Objective Questions

Chapter-02 : Definitions

1. The distance sufficient to ensure safety is called _____ (a)

   a) Adequate distance

   b) Clear distance

   c) Safety distance

   d) Marginal distance

2. _____ means special instructions approved of or prescribed by the Commissioner of Railway Safety (b)

   a) Special instructions

   b) Approved special instructions

   c) Instructions

   d) Notice

3. The person who is duly empowered by general or special order of the Railway administration, either by name or by virtue of his office, to issue instructions is called _____ (a)

   a) Authorised officer

   b) Special officer

   c) Driver

   d) Guard

4. The authority given to the Driver of a train, under the system of working, to enter the block section with his train is called _____ (a)

   a) Authority to proceed

   b) Caution order

   c) Speed restriction

   d) Temporary order

5. To despatch a message from a block station intimating to the block station immediately in rear on a double line, that the block section is obstructed or is to be obstructed is called _____ (b)

   a) Block section

   b) Block back

   c) Block forward

   d) Block limit

6. To despatch a message from a block station intimating to the block station immediately on either side on a single line, that the block section is obstructed or is to be obstructed is _____ (b)

   a) Block section

   b) Block back

   c) Block forward

   d) Block limit

7. To dispatch a message from a Block station on a double line intimating to the Block station immediately in advance the fact that the block section in advance is obstructed or is to be obstructed is called _____ (c)

a) Block section

b) Block back

c) Block forward

d) Block limit

8. The portion of the running line between two Block stations on to which no running train may enter until Line clear has been received from the Block station at the other end of the block section is _____ (a)

a) Block section

b) Station section

c) Block forward

d) Block limit

9. _____ means an arrangement of Signalling on double line in which a long block section is split into two portions each constituting a separate block section by providing an Intermediate Block Post (a)

a) Intermediate block signalling

b) Block section

c) Intermediate siding

d) Siding point

10 An arrangement, secured by the setting of points or other approved means, to protect the line so isolated from the danger of obstruction from other connected line or lines is called _____ (a)

a) Isolation

b) Shunting

c) line clear

d) Last stop signal

11. Points are said to be _____ when by their operation a train approaching them can be directly diverted from the line upon which it is running (b)

a) Trailing point

b) Facing Point

c) Trap point

d) Fixed point

12. _____ means the mark at which the infringement of fixed Standard Dimensions occurs, where two lines cross or join (c)

a) Fouling Bar

b) Fouling Mark

c) Fouling

d) Lock Bar

13. _____ means an arrangement of signals, points and other appliances, operated from a panel or lever frame, so interconnected by mechanical locking or electrical locking or both that their operation must take place in proper sequence to ensure safety. (a)

a) Interlocking

b) Non- interlocking

c) Pre-NI

d) Improper connection

14. _____ means a class `C' station on a double line, remotely controlled from the Block station in rear (a)

a) Intermediate block post

b) Intermediate block signalling

c) Interlocking

d) Isolation

15. _____ means an arrangement, secured by the setting of points or other approved means, to protect the line so isolated from the danger of obstruction from other connected line or lines (d)

a) Intermediate block post

b) Intermediate block signalling

c) Interlocking

d) Isolation

16. A fixed Stop Signal of a station controlling the entry of trains into the next block section is called _____ (a)

a) Last stop signal

b) Home signal

c) shunt signal

d) Gate stop signal

17. _____ means the permission given from a Block station to a Block station in rear for a train to leave the latter and approach the former (a)

a) Line clear

b) Block Back

c) Block forward

d) Block limit

18. _____ means a Signalling arrangement in which signals display at any one time any one of the three or more aspects and in which the aspect of every signal is pre-warned by the aspect of the previous signal or signals. (a)

a) MACLS

b) LQ Signal

c) Co-acting signal

d) Shunt Signal

19. _____ are not signals, but are appliances fitted to and working with points to indicate by day or by night the position in which the points are set (a)

    a) Point and trap indicator

    b) Facing point lock

    c) Hand plunger lock

    d) Pad lock

20. The movement of a vehicle or vehicles with or without an engine or of any engine or any other self-propelled vehicle for the purpose of attaching, detaching or transfer or for any other purpose is called _____ (a)

    a) Shunting

    b) Gradient

    c) Dead end

    d) Sand hump

21. _____ means instructions issued from time to time by the authorized officer in respect to particular cases or special circumstances (a)

    a) Special instructions

    b) under approved special instructions

    c) Temporary order

    d) A, B and C

22. The portion of a railway, which is under the control of a Station Master and is situated between the outermost signals of the station or as may be specified by special instructions is called _____ (a)

    a) Station limit

    b) Station section

    c) Block section

    d) Station Boundary

23. _____ means a special instruction, which is subservient to the General Rule to which it relates and shall not be at variance with any General Rule (b)

    a) General rule

    b) Subsidiary rule

    c) Working time table

    d) Special instructions

24. _____ is the distance travelled by train before coming to a stop by sudden application of brake at one stretch (a)

    a) Emergency breaking distance

    b) Breaking distance

    c) Normal breaking distance

    d) Service breaking distance

25. _____ means an electrical circuit provided to detect the presence of a vehicle on a portion of track, the rails of the track forming part of the circuit (a)

a) Track circuit

b) Selection circuit

c) Indication circuit

d) Internal circuits

26. A fixed signal which is displaying same aspect during day/ night time is _____ (a)

a) Colour light signal

b) Semaphore signal

c) Detonator

d) Flare signal

27. _____ means the territory over which an approaching train has to pass before reaching the signal location (c)

a) In advance of signal

b) Shunting

c) In rear of signal

d) Block back

28. _____ means the territory beyond a signal as seen from the approaching train (a)

a) In advance of signal

b) Shunting

c) In rear of signal

d) Block back

29. The maximum number of trains that can be run on any given section during a calendar day of 24 hour s is called _____ (a)

a) Section capacity

b) Section limit

c) Station limit

d) Block limit

30. The most restrictive aspect of the signal is _____ (a)

a) ON Aspect

b) OFF Aspect

c) Dual aspect

d) A, B and C

31. _____ is the distance required to stop the train running at the max permissible speed of the line, at such a rate of deceleration that the passengers do not suffer discomfort (a)

a) NBD

b) EBD

c) SBD

d) BD

Chapter-03 : Signalling Concepts

1. The time interval method of train working is not practicable due to _____ (a)

   a) Speed of trains vary

   b) Terrain is not same throughout the country

   c) Hauling capacity, Load of train and Brake power is not same for all trains

   d) All

2. It is not possible to control the movement of trains under the "Time interval method", a better method of control called the _____ is adopted (a)

   a) "Space Interval Method"

   b) Time interval method

   c) Pilot method

   d) shunting

3. A _____ means to convey a particular pre-determined meaning in non-verbal form to approaching loco pilot (a)

   a) Railway signal

   b) whistle

   c) voice

   d) b and c

Chapter - 4 : Fixed Signals, Aspects & Indications

1. Different types of signals used for train operation are _____ (d)

   a) Fixed signals

   b) Hand signals

   c) Flare/ Detonating signals

   d) a, b and c

2. "A signal of fixed location indicating a condition affecting the movement of a train and includes a semaphore arm or disc or fixed light for use by day and a fixed light for use by night" is _____ (a)

   a) Fixed signal

   b) Flare signal

   c) Hand signal

   d) Detonating signal

3. Semaphore signals used on the Railways are in the form of a _____ arm fixed to a vertical post. (d)

   a) Rectangular or fish tailed

   b) Square type

   c) Circle type

   d) a and c

4. Fixed signals are generally located on _____ of the track. (d)

   a) Left hand side

   b) Right hand side

   c) Center

   d) a and b

5. The semaphore arm of the _____ is square ended, painted Red with White bar parallel to the square end in front and painted white with black bar in rear of signal (a)

   a) stop signal

   b) Permisive signal

   c) Flare signal

   d) Detonating signal

6. Semaphore signal, horizontal position of the arm during day time is considered as the _____ aspect and the inclined position is the "OFF" aspect of the signal. (a)

   a) ON

   b) OFF

   c) Marker light

   d) a, b and c

7. Semaphore signal inclined position of the arm during day time is considered as the _____ aspect of the signal (b)

a) ON

b) OFF

c) Marker light

d) a, b and c

8. Name of the permissive signal in LQ signalling is _____ (a)

a) Warner signal

b) Outer signal

c) Home sig

d) Starter signal

9. The LQ signal which gives warning about the condition of the stop signal ahead is called _____ (a)

a) Warner signal

b) outer signal

c) Home sig

d) starter signal

10. Warner signal displaying OFF aspect indicates run through condition on _____ (a)

a) main line

b) loop line

c) siding line

d) Branch line

11. The combination of Green Light above a Red Light distinguishes a signal as a Warner Signal (on separate post) at _____ (a)

a) ON Position

b) OFF position

c) Center position

d) a, b and c

12. OFF aspect of warner signal provided on separate post during night time is _____ (d)

a) Caution aspect

b) Attention aspect

c) Red light

d) Fixed green light above proceed aspect

13. _____ marker should be provided on Warner signal in two aspect CLS. (a)

a) P

b) C

c) IB

d) R

14. _____ signal must not be capable of being taken 'OFF' for any line other than that over which the highest speed is permitted (i.e. main line) and not until all the relevant signals ahead are taken 'OFF' (a)

a) Warner signal

b) Outer signal

c) Shunt signal

d) Flare signal

15. Under certain circumstances a _____ signal is required to be placed on the same post of first stop signal of same station or last stop signal of previous station / LC gat, In such cases the fixed green light above Warner Signal is dispensed with. (a)

a) Warner signal

b) Outer signal

c) Shunt signal

d) Flare signal

16. The semaphore signal arm in the horizontal position in day will convey `ON' aspect indicating _____ to the loco pilot (a)

a) Stop dead

b) Proceed

c) Proceed with care

d) Proceed & be prepared to stop at next Stop Signal

17. The _____ signal arm is fishtailed similar to lower quadrant Warner signal. The front side facing the train is coloured yellow with a black bar and the back side is coloured white with a black bar, both bars are parallel to the end of the arm (a)

a) Distant

b) Outer signal

c) Home signal

d) Flare signal

18. Name of the permisive signals in MACLS are _____ (d)

a) Distant

b) Inner Distant

c) Warner

d) a and c

19. Normal aspect of Distant signal in MACLS is _____ (a)

a) Caution

b) Attention

c) proceed

d) stop dead

20. When Distant signal displaying Proceed aspect, it indicates _____ to the loco pilot (b)

a) Run through on loop line

b) Run through on Main line

c) Stop and start

d) Stop at starter

21. A _____ maker board shall be provided below Distant signal in MACLS (a)

a) P

b) C

c) IB

d) R

22. When DISTANT signal displaying caution aspect, it indicates _____ to the loco pilot (a)

a) Proceed and be prepared to stop at next stop Signal

b) Proceed

c) Proceed & be prepared to pass next Stop Signal at such a speed as prescribed by special instruction

d) Stop dead

23. When DISTANT signal display Attention aspect, it indicates _____ to the loco pilot (c)

a) Proceed and be prepared to stop at next stop Signal

b) Proceed

c) Proceed & be prepared to pass next Stop Signal at such a speed as prescribed by special instruction

d) Stop dead

24. _____ Signal day and night aspects are the same, therefore no confusion to the Loco Pilot (a)

a) MACLS

b) Semaphore signal

c) Semaphore home signal

d) b and c

25. A combination of 4 aspects can be possible in _____ (a)

a) MACLS

b) Semaphore signal

c) Semaphore home signal

d) b and c

26. The _____ Aspect of MACLS is placed at Loco Pilot's eye level. (c)

a) DG

b) HG

c) RG

d) HHG

27. Advantage of CLS are _____ (d)

a) more visibility

b) long range of operation

c) 4 aspects possible

d) a, b and c

28. Where "Distant" and "Inner Distant" signals are provided the Distant shall display _____ aspect. (Ref. 3.07.1 SR -SCR & BD's L.68/W3/SG/5/4 of 5/2/70). (a)

a) "Attention" or "Proceed"

b) Caution

c) only proceed

d) a and c

29. When MACL Stop signal display caution aspect, it indicates _____ to the loco pilot (b)

a) Stop dead

b) Proceed & be prepared to stop next Stop Signal

c) Proceed

d) Proceed & be prepared to pass next Stop Signal

30. When MACL Stop signal display Attention aspect, it indicates _____ to the loco pilot (d)

a) Stop dead

b) Proceed & be prepared to stop next Stop Signal

c) Proceed

d) Proceed & be prepared to pass next Stop Signal

31. When MACL Stop signal display proceed aspect, it indicates _____ to the loco pilot (c)

a) Stop dead

b) Proceed & be prepared to stop next Stop Signal

c) Proceed

d) Proceed & be prepared to pass next Stop Signal

32. Normal aspect of inner Distant signal is _____ (a)

a) Caution

b) Attention

c) Proceed

d) no light

33. Normal aspect of Distant signal is in double distant territory is _____ (b)

a) Caution

b) Attention

c) Proceed

d) no light

Chapter-5 : Designation of Signals

1. The Signals, which are governing the approach and entry of trains into a station section are _____ (a)
   a) Signal for Reception
   b) Signal for Dispatching
   c) Detonating signal
   d) Misllaneous signals

2. A _____ signal in case of Two aspect signalling can be placed below the first stop signal or below the Last Stop Signal or can be on a post by itself with fixed green light above (a)
   a) Warner
   b) shunt
   c) Flare sig
   d) starter

3. The Purpose of warner signal is to warn the Loco Pilot that he is approaching a stop signal or to warn him about the condition of _____ ahead. (b)
   a) Station
   b) Block section
   c) Station section
   d) Panel

4. In Multiple Aspect Signalling a _____ signal is provided to indicate the Loco Pilot about the condition of the stop signal ahead (b)
   a) Warner
   b) Distant
   c) Shunt
   d) Flare signal

5. If the sectional speed is 120 kmph or above, two "DISTANT" signals shall be provided, these signals are called _____ and _____ respectively (b)
   a) Home & Calling On
   b) Distant & inner Distant
   c) Starter & shunt
   d) Calling ON & Shunt

6. Minimum one permissive and one stop signal are sufficient for trains approaching a station, When stop signal is taken 'OFF' it permits the train to enter the station, this is called _____ signal of the station (c)
   a) Warner
   b) Distant
   c) Home
   d) Shunt

7. At a station where two stop signals are provided in the approach, the first one shall be called _____ and the next shall be _____ (a)

   a) Outer, Home signal
   b) Distant, Inner Distant
   c) Shunt, Calling ON
   d) Repeater, Route signal

8. Where the distance between the Home signal and the Reception lines of the station is far away, one more stop signal may be provided, as One Home signal will not be sufficient to facilitate the reception. So a stop signal provided between Home and the Reception lines shall be called a _____ (b)

   a) Starter signal
   b) Routing Home signal
   c) Flare signal
   d) Distant signal

9. Where the departure of trains is controlled by only one stop signal, it is called _____ and is the Last Stop Signal of the station. (a)

   a) Starter signal
   b) shunt signal
   c) intermediate starter sig
   d) Flare signal

10. The starter signal referring to any line is placed so as to protect the facing point or fouling mark and shall not be less than _____ mts in advance of the Home signal. (c)

    a) 200 mts
    b) 600 mts
    c) 400 mts
    d) 1000 mts

11. Where departure of trains is controlled by more than one Stop Signal, the Outer most starter signal shall be the Last _____ of the station and is called "Advanced Starter". (b)

    a) First stop signal
    b) Last stop signal
    c) Permissive signal
    d) Shunt signal

12. . LSS shall be placed at not less than _____ in the case of two aspect Signalling; from the outermost point on single line and outside all point connections. (b)

    a) 400 mts
    b) 180 mts
    c) 120 mts
    d) 1000 mts

13. LSS shall be placed at not less than _____ in the case of MACL Signalling, from the outermost point on single line and outside all point connections. (c)

a) 400 mts

b) 180 mts

c) 120 mts

d) 1000 mts

14. For placing of LSS, the minimum distance 120 mts in MACLS shall be reckoned from the _____ signal on double line (b)

a) Shunt signal

b) Starter

c) Home signal

d) Facing point

15. For placing of LSS on single line, the minimum distance 120 mts in MACLS shall be reckoned from the _____ (d)

a) Shunt signal

b) Starter signal

c) Home signal

d) Trailing point / Fouling mark

16. _____ is provided between starter & advanced starter where necessary, and is placed in rear of the point, which it protects (b)

a) Home signal

b) Intermediate starter

c) Flare signal

d) Route signal

17. Name of the FSS in LQ Signalling is _____ (b)

a) Home signal

b) Outer signal

c) Starter signal

d) LSS

18. Name of the FSS in MCL Signalling is _____ (a)

a) Home sig

b) Outer sig

c) Starter signal

d) Last stop signal

19. Name of the main signals for reception of train used in LQ Signalling are _____ (a)

a) Warner/ outer/ home signal

b) Distant / Home signal

c) Distant/ inner Dist / Home signal

d) a, b and c

20. Name of the main signals used for reception of train in MACL Signalling are _____ (c)

a) Warner/ outer/ home signal

b) Distant / Home signal

c) Distant/ inner Dist / Home signal

d) a, b and c

21. In Two aspect Signalling territory, to stop a train at starter signal _____ aspects conveyed to the Loco Pilot of an approaching train by Warner, outer and Home signals (b)

a) R G, RG, RG

b) RG, DG, DG

c) DG, DG, DG

d) RG, DG, RG

22. Distant is a permissive signal. Most restrictive aspect of a distant signal is _____ (b)

a) Proceed

b) Caution

c) Attention

d) No light

23. Distant is a permissive signal. Most restrictive aspect of a distant signal in double distant signaling territory is _____ (c)

a) Proceed

b) Caution

c) Attention

d) No light

24. Advanced Starter is _____ signal of a station (a)

a) Last stop signal

b) First stop signal

c) Permissive signal

d) b and c

25. When distant signal (single) display green aspect then it indicates _____ to the approaching train loco pilot (a)

a) Run through on main line

b) Run through on loop line

c) Run through on siding line

d) b and c

26. In LQ signalling run through on main line is indicated by _____ (c)

a) Home signal

b) Advanced starter

c) Warner

d) Distant signal

Chapter - 6 : Location of Signals

1. A Warner is a permissive signal may be placed either _____ (d)

   a) On a post by itself with a fixed green light by night 1.5 to 2 mts above it

   b) On the post, 1.5 to 2 mts below the arm of the Outer signal

   c) On the post, 1.5 to 2 mts below the Last Stop Signal of a station.

   d) a, b and c

2. A Warner signal may be shall be located on separate post at the distance of not less than _____ in rear of the first stop signal or Gate Stop Signal, unless otherwise it is permitted by approved special instructions. (a)

   a) 1200 mts

   b) 400 mts

   c) 600 mts

   d) 180 mts

3. In Two aspect signalling where Outer signal is provided, it will be the _____ of the station (a)

   a) First stop signal

   b) Last stop signal

   c) Permissive signal

   d) Flare signal

4. In two aspect signalling where Outer signal is provided, it shall be placed not less than _____ in rear of the point up to which the line may be obstructed after the line clear has been given to the station in rear on Double line (b)

   a) 1200 mts

   b) 400 mts

   c) 600 mts

   d) 180 mts

5. In two aspect signalling where Outer signal is provided on single line it shall be placed at not less than _____ in rear of the point up to which the line may be obstructed after the line clear has been given to the station in rear. (c)

   a) 1200 mts

   b) 400 mts

   c) 580 mts

   d) 180 mts

6. Home signal (LQ) shall be located in rear of all connections, and close to the first set of facing points clear of lock bar, or the fouling mark to protect _____ (a)

   a) Adjacent line

   b) Stop Board

   c) Trap point

   d) b and c

7. In LQ Signalling the starter signal shall be placed at not less than _____ in advance of the Home Signal (b)

   a) 1200 mts

   b) 400 mts

   c) 600 mts

   d) 180 mts

8. An _____ shall be placed in rear of the point or fouling mark to which it protects (a)

   a) Intermediate starter signal

   b) Shunt signal

   c) Flare signal

   d) Detonating signal

9. In LQ, an advanced starter shall be placed at outside all connections on the line to which it applies; it shall be placed at not less than _____ from the outermost point on single line. (d)

   a) 1200 mts

   b) 400 mts

   c) 600 mts

   d) 180 mts

10. In MAUQ on single line or double line, the distant signal shall be placed at an adequate distance i.e. Normal braking distance in rear of the first stop signal of the station or gate stop signal, which shall not be less _____ (a)

    a) 1000 mts

    b) 400 mts

    c) 100 mts

    d) 180 mts

11. In MAUQ signalling, Home signal is the _____ signal of the station (b)

    a) LSS

    b) First stop signal

    c) Permissive signal

    d) Flare signal

12. In MAUQ Signalling the Home signal is the first stop signal of the station usually placed at Normal braking distance in rear of next stop signal and _____ in rear of the point up to which the line may be obstructed, after the line clear has been given to the station in rear (d)

    a) 1000 mts

    b) 400 mts

    c) 100 mts

    d) 180 mts

13. In MAUQ signalling, to obtain maximum operational facility on single line, the Home signal shall be placed at not less than _____ block overlap + signal overlap (180 mts + 120 mts) in rear of the first facing point if the facility of shunting in the face of an approaching train is desired, so that BO is available between the Home and the opposite Advanced starter/Shunting Limit Board. (a)

a) 300 mts

b) 400 mts

c) 100 mts

d) 180 mts

14. In MAUQ signalling on double line the Home Signal may be located at a distance of _____ in rear of the facing point or Block section Limit Board (if first point in the approach is trailing or no point) (d)

a) 300 mts

b) 400 mts

c) 100 mts

d) 180 mts

15. _____ Signals are usually placed in rear of the facing point or fouling mark of the converging lines such that they should protect the adjacent running line or lines (a)

a) Starter

b) Co-acting signal

c) Shunt signal

d) Repeating signal

16. In MAUQ signalling the advanced starter shall be placed outside all connections on the line to which it applies, and shall not be less than _____ from the outermost point on single line (a)

a) 120 mts

b) 300 mts

c) 400 mts

d) 180 mts

17. In MACL Signalling inner distant signal placed at the distance of _____ from FSS (a)

a) 1000 mts

b) 300 mts

c) 400 mts

d) 180 mts

18. In MACL Signalling distant signal placed at the distance of _____ from FSS (d)

a) 1000 mts

b) 300 mts

c) 400 mts

d) Min 2 km

19. In MACL Signalling distant signal placed at the distance of _____ from inner distant signal (a)

a) Min 1000 mts

b) 300 mts

c) 400 mts

d) Min 2 km

20. When Warner signal provided on separate post in LQ signalling territory _____ board not required to provide (a)

a) Passenger warning

b) stop

c) Goods warning

d) FM

Chapter-7 : Subsidiary Signals, Repeaters, Aspects & Indications

1. The signals, which control the movement of trains within the station section are _____ and _____ signals (d)

   a) Calling –On sig

   b) Shunt signal

   c) Flare signal

   d) a and b

2. The signals, which control the movement of trains within the station section, are to be differentiated and should convey different indication to the Loco Pilot. These signals are (a) Shunt signals and (b) Calling on Signals and are called as _____ (a)

   a) Subsidiary signals

   b) Signal for dispatching

   c) Co-acting signal

   d) b and c

3. Shunt signals authorise movement only at such slow speeds as to be able to stop short of any obstruction and control _____ movements (a)

   a) Shunting

   b) Block Back

   c) Block Forward

   d) b and c

4.Shunt signal can be placed on a separate post by itself close to the ground or can be placed below a stop signal other than the _____ signal of a station (a)

   a) First and last stop signal

   b) Last stop signal

   c) Permissive signal

   d) Flare signal

5. More than one shunt signal may be placed on the same post in which case the top-most signal shall apply to _____ and the second shunt signal from the top shall apply to the next line from the extreme left and so on (a)

   a) Extreme left hand line

   b) Extreme right hand line

   c) center line

   d) b and c

6. Shunt signal shall be either _____ types (d)

   a) Disc type shunt signal

   b) Position Light Shunt Signal

   c) Under special instructions, a shunt signal may be a miniature arm also

   d) a, b and c

7. When a dependent Shunt Signal is placed below a Stop Signal, it shall show _____ in the "ON" position (a)

a) no light

b) yellow light

c) Green light

d) b and c

8. At certain stations where uninterrupted shunting operation is required in both the directions (to-and-fro towards the shunting neck or other connected lines), _____ may be provided for shunting (a)

a) a Shunting Permitted Indicator (SPI)

b) Route indicator

c) Flare signal

d) b and c

9. _____ is not a stop signal, but an indicator, which is operated by a ground frame lever and works in conjunction with the stop signal such that either the SPI or the associated Shunt signal can be taken off at a time (a)

a) a Shunting Permitted Indicator (SPI)

b) Route indicator

c) Flare signal

d) b and c

10. A Shunting Permitted Indicator is of _____ types (d)

a) Disc type - a black disc with yellow cross - painted on it.

b) Light type - Yellow cross light.

c) Control Disc

d) a and b

11. A calling on signal is a subsidiary signal and has no _____ (a)

a) Independent existence

b) OFF aspect

c) C marker

d) b and c

12. A calling on signal is a subsidiary signal and has no independent existence, It is provided below any stop signal other than _____ (b)

a) FSS

b) LSS

c) Permissive signal

d) Detonating signal

13. CALLING 'ON' signal can be a _____ type or _____ type in Two aspect or Multiple aspect territory (d)

a) Miniature semaphore arm

b) colour light

c) Route type

d) a and b

14. A Calling on signals of the colour light type are provided with a _____ board (b)
    a) R- Marker
    b) 'C' marker
    c) P marker
    d) A- Marker

15. Under approved special instructions, a "calling on" signal may be provided below any other stop signal except _____ (b)
    a) First stop signal
    b) Last Stop Signal
    c) Flare signal
    d) Permissive signal

16. In Two aspect Signalling territory, Miniature Semaphore arm type Calling ON Signal ON Aspect is _____ during night (c)
    a) Yellow
    b) Green
    c) No light
    d) a and b

17. In Two aspect Signalling territory, Miniature Semaphore type Calling ON Signal OFF Aspect is _____ during night (a)
    a) Yellow
    b) Green
    c) No light
    d) a and b

18. In MAUQ Signalling territory, Miniature Semaphore type Calling ON Signal OFF Aspect is _____ during night (a)
    a) Yellow
    b) Green
    c) No light
    d) a and b

19. When it is not possible to get the minimum continuous visibility of fixed signal due to a foot-over bridge or road-over bridge, or tunnel or any other partial obstruction, then _____ signals are required to be provided (b)
    a) Permissive
    b) Co-acting
    c) Calling-On
    d) shunt signal

20. Co-acting signals are _____ signals fixed one below the other running signals on the same post (a)
    a) Duplicate
    b) Main
    c) Detonating
    d) Hand

21. The main signal and _____ signal are rigidly connected and they work together (a)
    a) Co-acting
    b) Main
    c) Detonating
    d) Hand

22. Co-acting signals are normally provided in _____ signalling territory only (a)
    a) MAUQ
    b) LQ
    c) MACL
    d) a and c

23. A fixed signal shall be visible to the approaching Loco Pilot however, due to the terrain of the land, a tunnel or bridge coming in between or any other obstruction, then it may not be always possible to get a clear view of the signal from the specified distance. To overcome this _____ are provided. (a)
    a) Repeating signals
    b) Co-acting signal
    c) Shunt signal
    d) Calling-ON Signal

24. The purpose of repeating signal is to inform the Loco Pilot of the approaching train about the aspects displayed by the _____ which it repeats (a)
    a) Fixed signal in advance
    b) Fixed signal in rear
    c) the fixed signal in centre
    d) b and c

25. A repeating signal shall be provided with a _____ (a)
    a) 'R' Marker
    b) ’C’ marker
    c) ‘P’ marker
    d) ‘A‘ Marker

26. A repeating signal shall be provided with a marker 'R' and shall be _____ type (d)
    a) a square ended semaphore arm
    b) a banner type
    c) a colour light signal
    d) a, b and c

27. Repeating signals are normally required for _____ signalling (a)
    a) Two aspect
    b) MAUQ
    c) MACL
    d) Auto section

28. The ON aspect of the colour light type repeating signal is _____ (a)

a) Yellow

b) Green

c) No light

d) Double yellow

29. The OFF aspect of the colour light type repeating signal is _____ (b)

a) Yellow

b) Green

c) No light

d) Double yellow

30. Approach stop signals for goods running lines are provided with one _____ board on semaphore arm (b)

a) one black ring ‘R’

b) one black ring ‘O’

c) one black ring ‘C’

d) one black ring ‘D’

31. Approach stop signals leading to _____ are provided with letter 'D' in black on semaphore arm (a)

a) Dock platforms

b) Goods platforms

c) Siding platforms

d) Main platforms

32. Colour light Signal not in use or not commissioned are provided with _____ (a)

a) Crossbars on signal unit and such signals shall not be lit

b) Cross mark on signal unit rear and such signals shall not be lit

c) Cross mark on signal unit both sides and such signals shall not be lit

d) Crossbars on signal unit and such signals shall not be lit

33. Automatic stop signals are provided with _____ to distinguish the signal as a full automatic signal. (a)

a) ‘A’ Marker

b) C- Marker

c) R- Marker

d) P-Marker

34. Semi-automatic stop signals are provided with _____ to distinguish the signal, when working as an automatic signal and Letter 'A' extinguishes when the signal is working as a manual signal (a)

a) ‘A’ lit marker

b) C- Marker

c) R- Marker

d) P-Marker

35. Colour light permissive signals on a post by itself are provided with _____ (d)

a) 'A' lit marker

b) C- Marker

c) R- Marker

d) P-Marker

36. Gate stop signals are provided with _____ board (b)

a) 'A' lit marker

b) G- Marker

c) R- Marker

d) P-Marker

37. Intermediate block stop signals are provided with _____ Marker board (c)

a) 'A' lit marker

b) C- Marker

c) IB- Marker

d) P-Marker

38. Colour light calling on signals are provided with _____ Marker board (b)

a) 'A' lit marker

b) C- Marker

c) R- Marker

d) P-Marker

39. Repeating signals of semaphore type are provided _____ board (c)

a) 'A' lit marker

b) C- Marker

c) R- Marker

d) P-Marker

40. Repeating signals in colour light Two aspect signalling territory are provided with _____ Marker (c)

a) 'A' lit marker

b) C- Marker

c) R- Lit Marker

d) P-Marker

41. Gate signals in Automatic Block territory are provided with a 'G' marker and a _____ against black background. (a)

a) White illuminated letter A

b) C- Marker

c) R- Marker

d) P-Marker

42. Gate stop signal in semi - automatic block territory, when interlocked with points also provided with _____ (a)

a) White illuminated letters ‘A’ and ‘AG’ against black back ground.

b) White illuminated letters ‘A’ and ‘AC’ against black back ground.

c) White illuminated letters ‘C’ and ‘AG’ against black back ground.

d) b and c

43. The _____ stop signal is provided with IB marker board (d)

a) Starter signal

b) Gate stop signal

c) Distant signal

d) Intermediate block stop signal

44. Certain appliances are provided on the un-interlocked points to indicate to the Loco Pilot and Points man, whether the points are set for the straight line or for the diverging line are called _____ (a)

a) Point Indicators

b) Trap indicators

c) Markers

d) Name plates

45. Indicators are provided on the trap points to indicate whether they are open or closed. These are called _____ (b)

a) Point Indicators

b) Trap indicators

c) Markers

d) Name plate

46. All the Point indicators shall show a white target by day or a white light by night in both directions when the points are set for the _____ (a)

a) Straight line

b) Diversion line

c) No line

d) b and c

47. All the Point indicators shall show no target by day and a green light by night in both directions when the points are set for the _____ (a)

a) Turnout (Diversion)

b) Straight line

c) No line

d) b and c

48. _____ Types of Route Indicators to be provided on fixed signal (d)

a) Junction (directional type) b) Multi-lamp type

c) Stencil type d) a, b and c

49. In multiple aspect colour light signalling for speed in excess of 15 kmph _____ type route Indicator should be used (a)

a) Direction (Junction)

b) Multi lamp

c) Stencil type

d) b and c

50. In multiple aspect colour light signalling for speeds not exceeding 15 kmph _____ type route indicator to be used (d)

a) Any route Indicator of approved design.

b) Junction

c) Multi-lamp

d) all a, b and c

51. Multi-lamp type route indicator can display maximum _____ no of routes (c)

a) 06

b) 04

c) 99

d) 10

52. Stencil -lamp type route indicator can display maximum _____ no of routes (b)

a) 06

b) 04

c) 99

d) 10

53. Junction -lamp type route indicator can display maximum _____ no of routes (a)

a) 06

b) 04

c) 99

d) 10

54. At certain stations where colour light signalling is provided a Starter Indicator may be provided to repeat the aspect of the starter signal as an aid to the Guard to enable him to know the aspect of the starter signal, It should show no light when starter signal is at 'ON' and show a _____ when it is at 'OFF' (a)

a) Yellow light

b) Green light

c) White light

d) a, b and c

55. Shunting limit Board is provided on a single line _____ station where shunting in the face of an approaching train is permitted (a)

a) Class ‘B’ b) Class ‘A’

c) Class-D d) Class-C

56. The shunting limit board shall be placed at such a shunting distance from the outer most facing point as the local conditions may require, and shall not be less than _____ mts from the opposing first stop signal in Two aspect (b)

a) 200

b) 400

c) 180 mts

d) 120 mts

57. The shunting limit board shall be placed at such a shunting distance from the outer most facing point as the local conditions may require, and shall not be less than _____ mts from the opposing first stop signal in Multiple Aspect Signalling (c)

a) 200

b) 400

c) 180 mts

d) 120 mts

58. Shunting Limit Board demarcates the _____ section. (a)

a) Station section and Block

b) Station section and station limit

c) Station section and FM

d) a,b and c

59. Block section limit boards are provided on Double line in multiple aspect signalling territory to distinguish the limit of the _____ (a)

a) Block section

b) Station

c) Station limit

d) a, b and c

60. _____ shall be provided at a station on Double line, where there are no facing points or the outer most point at the approaching end is trailing (a)

a) Block section limit board

b) Station section limit board

c) Station limit board

d) Shunting limit board

61. An intermediate siding taking off in the facing direction of running line outside station limits is provided with a _____ to indicate to the Loco Pilot that a siding is being taken off from the main line (a)

a) 'S' marker

b) W/L marker

c) Passenger warning board

d) Goods warning board

62. BSLB shall be placed at distance not less than _____ mts from the Home Signal and protects the fouling mark of the trailing point (c)

a) 200

b) 400

c) 180 mts

d) 120 mts

63. Warning boards are provided in rear of the first stop signal of the station for the purpose of giving the Loco Pilot adequate warning that he is approaching a _____ (a)

a) Stop signal

b) Shunt signal

c) Calling on signal

d) b and c

64. Passenger warning boards shall be located at not less than 1 km in rear of _____ signal (a)

a) First stop

b) Last stop sig

c) Shunt signal

d) Shunting permitting indicator

65. In MACLS when distant signals are provided hence _____ warning board is not required. (a)

a) Passenger

b) Goods

c) Siding

d) a, b and c

66. Goods warning Board shall be located at not less than _____ km in rear of the first stop signal (b)

a) 2.4 KM

b) 1.4 KM

c) 1.0 KM

d) 0.5 KM

67. In Double Distant signalling territory _____ warning board is not required (b)

a) Passenger

b) Goods

c) Siding

d) a, b and c

68. To draw the attention of the Loco Pilot during the night self reflecting sheets/ plastic reflectors of approved design are fixed on _____ (d)

a) Passenger warning board

b) Goods warning board

c) S-Marker

d) a, b and c

69. Indication boards are provided to give warning to the Loco Pilot about change in type of signalling or of block working, these board will have suitable legend like _____ (d)

a) "Entering token territory"

b) Entering Automatic Block territory

c) "Entering Absolute Block territory"

d) a, b and c

70. Shunting limit board is provided only in _____ (c)

a) Class 'A' station on single line

b) Class 'B' station on double line

c) Class 'B' station on single line

d) None of the above

71. Calling on signal at ON position display _____ (a)

a) no light

b) Green

c) Green

d) b and c

72. A trap indicator shows _____ light when trap is closed. (a)

a) Green

b) White

c) Yellow

d) No light

73. A trap indicator shows _____ light when trap is open. (a)

a) Red

b) White

c) Yellow

d) No light

74. Semi-automatic stop signals are provided with A' lit marker to distinguish the signal, when working as an automatic signal and Letter 'A' extinguishes when the signal is working as _____ signal (a)

a) Automatic

b) Manual stop

c) Repeater signal

d) P-Marker

Chapter-8 : Overlaps

1. The length of track in advance of a stop signal, which should be kept clear before the signal next in rear can be taken 'OFF' is known as the _____ (a)

   a) Signal overlap

   b) Block overlap

   c) Alternative overlap

   d) b and c

2. To take ‘OFF’ a stop signal, the portion of the track to be kept clear not only up to the next stop signal but also for an adequate distance beyond it. This adequate distance is known as _____ (a)

   a) Signal overlap

   b) Block overlap

   c) Alternative overlap

   d) b and c

3. The overlap provided for last stop signals in Absolute Block territories is greater than for other stop signals and this is referred as _____ (b)

   a) Signal overlap

   b) Block overlap

   c) Alternative overlap

   d) b and c

4. In Two aspect signalling the Block overlaps is _____ (a)

   a) 400 mts

   b) 180 mts

   c) 120 mts

   d) 80 mts

5. In Two aspect signalling the signalling overlaps is _____ (b)

   a) 400 mts

   b) 180 mts

   c) 120 mts

   d) 80 mts

6. In multiple aspect signalling the Block overlaps is _____ (b)

   a) 400 mts

   b) 180 mts

   c) 120 mts

   d) 80 mts

7. In multiple - aspect signalling the length of signal overlaps on Double line is _____ (c)
   a) 400 mts
   b) 180 mts
   c) 120 mts
   d) 80 mts

8. In Auto signalling the length of Block overlaps is _____ (d)
   a) 400 mts
   b) 180 mts
   c) 120 mts
   d) Nil

9. In Auto signalling the length of signal overlaps is _____ (c)
   a) 400 mts
   b) 180 mts
   c) 120 mts
   d) Nil

10. Length of Block overlap in Automatic signalling on Single line is _____ (d)
   a) 400 mts
   b) 180 mts
   c) 120 mts
   d) Nil

11. Block overlap in a 3-aspect Signaling section is _____ mts (a)
   a) 180
   b) 120
   c) 580
   d) 200

Chapter-9 : Breaking Distance

1. _____ is the distance required to stop the train running at the maximum permissible speed of the line, at such a rate of deceleration that the passengers do not suffer discomfort or alarm. (a)

   a) Service braking distance

   b) Emergency breaking distance

   c) Normal breaking distance

   d) a, b and c

2. _____ is the distance travelled by train before coming to a stop by sudden application of brake at one stretch (b)

   a) Service braking distance

   b) Emergency breaking distance

   c) Normal breaking distance

   d) a, b and c

3. Train breaking distance is function of _____ factors (d)

   a) Speed of the train when the brakes are applied.

   b) The available friction between wheel and rail which influences the retardation rate available with complete brake application.

   c) Track gradient when brakes are applied and mass distribution of the track

   d) a, b and c

4. The factors affecting the braking distance are (d)

   a) Speed and Gradient

   b) Brake power and Rollability of wheels

   c) State of rails and curvellence

   d) All a, b, c

Chapter-10 : Sighting Distance & Visibility of Signals

1. _____ is the distance over which the most restrictive aspect of a signal is visible from the driving compartment of an approaching train under normal conditions of visibility (a)

a) Sighting Distance

b) Reaction distance

c) Breaking distance

d) b and c

2. _____ is the distance travelled at permissible speed during time taken by Loco Pilot to react to the aspect of a signal (a)

a) Reaction Distance

b) Sighting Distance

c) Breaking distance

d) b and c

3. Minimum Visibility of outer signal, Where the sectional speed is 100 kmph or above is _____ (a)

a) 1200 mts

b) 800 mts

c) 400 mts

d) 200 mts

4. Minimum Visibility of outer signal, Where the sectional speed is less than 100 kmph is _____ (b)

a) 1200 mts

b) 800 mts

c) 400 mts

d) 200 mts

5. Minimum Visibility of outer signal with warner separated is _____ (c)

a) 1200 mts

b) 800 mts

c) 400 mts

d) 200 mts

6. Minimum Visibility of warner signal on a separate post is _____ (c)

a) 1200 mts

b) 800 mts

c) 400 mts

d) 200 mts

7. Minimum Visibility of Home signal in LQ signalling is _____ (c)

a) 1200 mts

b) 800 mts

c) 400 mts

d) 200 mts

8. Minimum Visibility of main line sarter signal in LQ signalling is _____ (c)

a) 1200 mts

b) 800 mts

c) 400 mts

d) 200 mts

9. Minimum Visibility of loop line starter signal in LQ signalling is _____ (d)

a) 1200 mts

b) 800 mts

c) 400 mts

d) 200 mts

10. Minimum Visibility of Distant signal in MACLS is _____ (c)

a) 1200 mts

b) 800 mts

c) 400 mts

d) 200 mts

11. Minimum Visibility of inner Distant signal in MACLS is _____ (d)

a) 1200 mts

b) 800 mts

c) 400 mts

d) 200 mts

12. Minimum Visibility of main line starter signal in MACLS is _____ (d)

a) 1200 mts

b) 800 mts

c) 400 mts

d) 200 mts

13. Minimum Visibility of Loop line starter signal in MACLS is _____ (d)

a) 1200 mts

b) 800 mts

c) 400 mts

d) 200 mts

14. Visibility of calling-ON signal in MACLS is _____ (d)

a) 1200 mts

b) 800 mts

c) 400 mts

d) Visibility is not a criteria

15. If it is not possible to ensure _____ continuous visibility of any stop signal while approaching it, a suitable speed restriction shall be imposed as per Para 7.7.7 of SEM Part 1, 1988. (b)

a) 1200 mts

b) 200 mts

c) 400 mts

d) Visibility is not a criteria

16. As the 'ON' aspect of outer is pre-warned, _____ of outer is not important (a)

a) Sighting distance

b) Breaking distance

c) Reaction distance

d) b and c

Chapter-11 : Isolation

1. If speed is more than _____ then one goods line shall not be isolated from other goods line. (a)

   a) 50 kmph

   b) 100 kmph

   c) 75 kmph

   d) 15 kmph

2. If speed is less than _____, then isolation of a passenger line from other connecting passenger line is not required. (a)

   a) 50 kmph

   b) 100 kmph

   c) 75 kmph

   d) 15 kmph

3. The isolation of goods reception lines from _____ is considered desirable (a)

   a) Sidings

   b) Sand humps

   c) over run lines

   d) b and c

4. A catch siding shall be provided if the gradient steeper than 1:80 in near vicinity of station and falling _____ (b)

   a) Away from station

   b) Towards station

   c) Towards block section

   d) All a, b & c

5. A slip siding shall be provided if the gradient steeper than 1:100 in near vicinity of station and falling _____ (a)

   a) Away from station

   b) Towards station

   c) Towards block section

   d) All a, b & c

6. Catch siding will protects _____ (b)

   a) Block section

   b) Station section

   c) Station limit

   d) Station

7. Slip siding will protects _____ (a)

   a) Block section b) Station section

   c) Station limit d) Station

8. A line on which train movements at speeds higher than 50 kmph are permitted should be _____ from all connected lines (a)

a) Isolated

b) Pad lock

c) Chain lock

d) b and c

9. _____ are provided for isolation purpose only. (d)

a) Catch sidings

b) Slip sidings

c) Trap point

d) All a, b and c

10. Maximum recommended gradient on Indian Railways for all gauges is _____ (a)

a) 1 : 1200

b) 1 : 260

c) 1 : 400

d) None of these

11. The isolation of goods reception line from one another _____ (c)

a) Compulsory

b) Not required

c) Desirable

d) None

12. The provision of sand humps, trap points etc in the yard for _____ purpose (a)

a) Isolation

b) Connection

c) Derailing

d) b and c

Chapter-12 : Simultaneous reception & Dispatch of Trains

1. Taking OFF reception signals for different trains at the same time is called _____ of trains (a)

   a) Simultaneous reception

   b) Simultaneous dispatch

   c) Simultaneous stop

   d) b and c

2. To provide simultaneous reception and dispatching facility on two lines _____ and _____ is required (d)

   a) Overlap

   b) Isolation

   c) Fouling mark

   d) a and b

Chapter-13 : System of Working

1. In Indian Railways, _____ systems of train working are adopted (a)

   a) Six

   b) Four

   c) Two

   d) Seven

2. Where trains are worked on the Absolute Block System no train shall be allowed to leave a Block station unless Line clear has been received from the Block station _____ (a)

   a) In advance

   b) In rear

   c) Station limit

   d) b and c

3. As per essentials of automatic block system the line shall be provided with Continuous _____ (a)

   a) Track Circuits or Axle Counters

   b) Slots

   c) Points

   d) b and c

4. In auto signaling line between two stations may where required be divided into a series of section and each section known as _____ (a)

   a) "Automatic Block Signaling Section".

   b) Block section

   c) Station section

   d) b and c

5. In auto section track Circuits or Axle Counters should controls the aspects of the Signal such that to display HG aspect (4 aspect MACLS) _____ block sections plus overlap must be clear (a)

   a) One

   b) Two

   c) Three

   d) Four

6. In auto section track Circuits or Axle Counters should controls the aspects of the Signal such that to display HHG aspect (4 aspect MACLS) _____ block sections plus overlap must be clear (b)

   a) One

   b) Two

   c) Three

   d) Four

7. In auto section track Circuits or Axle Counters should controls the aspects of the Signal such that to display DG aspect (4 aspect MACLS) _____ block sections plus overlap must be clear (c)

   a) One

   b) Two

   c) Three

   d) Four

8. Normal aspect of automatic stop signal is _____ (b)

   a) Caution

   b) Proceed

   c) Attention

   d) b and c

9. Adequate distance in Automatic Block System on Double line is _____ (a)

   a) 180 mts

   b) 400 mts

   c) 120 mts

   d) 300 mts

10. When an automatic stop signal with ‘A’ marker is at ‘ON’, the Loco Pilot shall bring his train to stop in rear of the signal, after the train has been stopped he shall wait there for _____ by day and _____ by night to pass the signal at ON (a)

    a) One minute, two minutes

    b) Two minute, One minute

    c) One minute, Three minutes

    d) One minute, Four minutes

11. Automatic Signals interlocked with Level crossing gates are distinguished by the provision of ‘G’ marker (yellow enameled disc with a letter ‘G’ in black) in addition to _____ (a)

    a) Illuminated ‘A’ marker

    b) P- marker

    c) C- Marker

    d) R-Marker

12. Automatic signals interlocked with Point and Level crossing gates are distinguished by the provision of _____ and illuminated `A' marker (a)

    a) Illuminated AG

    b) P- marker

    c) C- Marker

    d) R-Marker

13. The normally used block working in Indian Railways is / are (d)

a) Absolute block system

b) Automatic block system

c) Pilot Guard System

d) both a and b

14. Absolute block system is based on _____ (a)

a) Space interval method

b) Time interval method

15. Complete arrival of the train is checked by _____ (d)

a) Physical verification with LV board

b) Physical verification with Tail lamp

c) Continuous track circuit / Axle counter

d) All the above is correct

16. The automatic stop signal can exhibit green aspect when the line is clear for two automatic block sections plus overlap in the case of _____ (a)

a) 3-aspect signalling

b) 4 aspect signalling

c) 2 Aspect signalling

d) 1 aspect signal

17. The automatic stop signal can exhibit double yellow when the line is clear for two automatic block sections plus overlap in the case of _____ (b)

a) 3-aspect signalling

b) 4 aspect signalling

c) 2 Aspect signalling

d) 1 aspect signal

18. The minimum equipment of fixed signals in automatic block territory on single line _____ (d)

a) a home signal

b) a starter signal

c) an automatic stop signal in rear of the home signal of station

d) All a, b and c

Chapter-14 : Classification of Stations – Comparison of A, B & C

1. In class-A station, Where Line Clear may not be given for a train unless the line on which it is intended to receive the train is clear for at least _____ beyond the Home signal or up to the Starter (a)

   a) 400 meters

   b) 200 mts

   c) 600 mts

   d) 1000 mts

2. In Class 'C' stations, where Line Clear may not be given for a train unless the whole of the last preceding train has passed complete at least _____ beyond the Home Signal and is continuing journey. This will also include an Intermediate Block Post. (a)

   a) 400 meters

   b) 200 mts

   c) 600 mts

   d) 1000 mts

3. _____ stations are stopping places which are situated between two consecutive block stations and do not form the boundary of any block section (a)

   a) Non-block stations or Class 'D'

   b) Class- A

   c) Class-C

   d) Class-B

4. _____ means that portion of the running line between two Block stations on to which no running train may enter until Line Clear has been received from the Block station at the other end of the Block section (a)

   a) Block section

   b) Station section

   c) Station limit

   d) Station

5. _____ is that portion of Station limits which can be used for shunting even after granting Line clear to station in rear (b)

   a) Block section

   b) Station section

   c) Station limit

   d) Station

6. Station section exists only for _____ Station (a)

   a) Class B

   b) Class C

   c) Class D

   d) Class A

7. Shunting in face of approaching train can be performed at _____ station (a)

a) Class B

b) Class C

c) Class D

d) Class A

8. Class A stations normally provided in _____ signaling territory (a)

a) LQ

b) MACLS

c) any where

d) b and c

9. Purpose of Class –C stations are _____ (a)

a) To increase section capacity

b) for safety

c) for shunting

d) b and c

10. Minimum signalling equipment required for Multiple aspect Class C station _____ (b)

a) Distant

b) Distant, Home

c) Distant, Home, Starter

d) Warner, Home

11. Shunting in the face of approaching train is not possible in _____ station (a)

a) class A

b) class B

c) class D

d) class C

12. _____Station Obstruction is protected by two stop signals, so more safe (a)

a) class A

b) class B

c) class D

d) class C

13. There is no station section in _____station (d)

a) class A

b) class B

c) class C

d) A and C

Chapter-15 : Standards of Interlocking

1. Where sectional speed is _____ above, two distant signals shall be provided. In such cases, these signals are called 'DISTANT' and 'INNER DISTANT' signal respectively (b)
   a) 100 kmph
   b) 120 kmph
   c) 50 kmph
   d) 75 kmph

2. The Maximum speed allowed in STD II revised interlocking is _____ (a)
   a) 50 kmph
   b) 110 kmph
   c) 140 kmph
   d) 160 kmph

3. The Maximum speed allowed in STD III revised interlocking is _____ (c)
   a) 50 kmph
   b) 110 kmph
   c) 140 kmph
   d) 160 kmph

4. The Maximum speed allowed in STD IV revised interlocking is _____ (d)
   a) 50 kmph
   b) 110 kmph
   c) 140 kmph
   d) 160 kmph

5. _____ of interlocking isolation is required (d)
   a) STD I R
   b) STD II R
   c) STD IV R
   d) a, b and c

6. Double distant signals are mandatory in _____ interlocking (d)
   a) STD I R
   b) STD II R
   c) STD IV R
   d) b and c

7. In STD IV revised interlocking, _____ mode of point operation is required (b)
   a) Mechanically
   b) Electrical
   c) GF Lever
   d) a and c

8. Prevention of SPAD cases desirable in _____ interlocking (c)

a) STD I R

b) STD II R

c) STD IV R

d) a, b and c

9. Isolation and point lock detection is not required in _____ std of interlocking (d)

a) STD I R

b) STD II R

c) STD IV R

d) STD 1R

10. The Multi aspect signals are made compulsory in _____ interlocking (a)

a) Standard III and standard IV

b) STD I R

c) STD II R

d) STD O

11. Starter signals are compulsory in _____ as they are required for high-speed operation (d)

a) STD II R

b) STD III R

c) STD IV R

d) b and c

12. The maximum speed permitted over the points for straight line fitted with Standard III revised interlocking is _____ (d)

a) 15 kmph

b) 50 kmph

c) 5 kmph

d) 140 kmph

13. Point Switch detection must be required for _____ interlocking (d)

a) STD I

b) STD II

c) STD III

d) a, b, and c

14. The first stop signal in a MACLS Std-III R station is _____ signal. (a)

a) Home b) Outer

c) Starter d) Warner

15. All running lines should be track circuited in _____ standard of interlocking (d)

a) STD I b) STD III

c) STD IV d) b and c

CHAPTER-16 : Operation of Points

1. The distance at which points may be worked by rodding is stipulated in and must not exceed _____ where the stroke at the lever tail is 150 mm (a)

   a) 320 mts

   b) 460 mts

   c) 280 mts

   d) 400 mts

2. The distance at which points may be worked by rodding is stipulated in and must not exceed _____ where the stroke at the lever tail is 200 mm (b)

   a) 320 mts

   b) 460 mts

   c) 280 mts

   d) 400 mts

3. The maximum speed permitted over facing points set for the straight road as per revised version of Standards I of Interlocking is as _____ (d)

   a) 110 kmph

   b) 140 kmph

   c) 160 kmph

   d) 50 kmph

3. The maximum speed permitted over facing points set for the straight road as per revised version of Standards II of Interlocking is as _____ (a)

   a) 110 kmph

   b) 140 kmph

   c) 160 kmph

   d) 50 kmph

4. The maximum speed permitted over facing points set for the straight road as per revised version of Standards III of Interlocking is as _____ (b)

   a) 110 kmph

   b) 140 kmph

   c) 160 kmph

   d) 50 kmph

5. The maximum speed permitted over facing points set for the straight road as per revised version of Standards IV of Interlocking is as _____ (c)

   a) 110 kmph

   b) 140 kmph

   c) 160 kmph

   d) 50 kmph

Chapter-17 : Inter Cabin Control

1. Inter cabin control is also known as _____ (a)

   a) Slotting

   b) LC Gate

   c) Point

   d) b and c

2. The _____ types of Controls/Slots are in general use in mechanical installations (d)

   (a) The mechanical lever lock worked by key transmitted electrically

   (b) The electric lever lock

   (c) The electric signal reverser post type

   (d) All a, b and c

3. In case of an emergency slotted signals _____ be replaced to ON by any one of the agencies. (b)

   a) may

   b) can

   c) cannot

   d) only c

Chapter-18 : Level Crossing Gates

1. When road traffic crosses the rail traffic at the same level they are known as _____ (a)

   a) Level crossings

   b) Bridges

   c) Cabins

   d) b and c

2. Where lifting barriers are operated mechanically from the nearest cabin, the distance from the cabin to the L.C is limited to _____ (a)

   a) 150 mts.

   b) 220 mts

   c) 400 mts

   d)100 mts

3. The classification of Level crossings is made after conducting the Level crossing census once in _____ by a team consisting of supervisors of Engineering and Traffic department shall do the census of TVU for seven days generally and average per day is taken up (b)

   a) 5 years

   b) 03 years

   c) 04 years

   d) 01 year

4. TVU train vehicle unit = _____ (a)

   a) No of trains x No of road vehicles

   b) No of trains x No of trains

   c) No of Road vehicle x No of road vehicles

   d) b and c

5. Special class LC Gate to be provided when TVU more than _____ (a)

   a) 50, 000

   b) 30,000

   c) 25,000

   d) 20,000

6. 'A' class LC Gate to be provided when TVU more than _____ and number of road vehicles greater than 1000 (b)

   a) 50, 000

   b) 30,000 – 50,000

   c) 25,000 – 20,000

   d) 20,000

7. 'B' class LC Gate to be provided when TVU more than _____ and number of road vehicles greater than 1000 (c)

   a) 50, 000

   b) 30,000 – 50,000

   c) 20,000 – 30,000

   d) 20,000

8. Level crossings should not be located on _____ lines (d)

   a) Fouling reception

   b) stabling

   c) within the signals overlap at stations

   d) a, b and c

9. A Special class LC gate provided in station limit should be interlocked with _____ (a)

   a) Station signals

   b) IB signal

   c) Starter repeater indicator

   d) b and c

10. A Special class LC gate provided in outside station limit should be interlocked with ___ (a)

   a) Station signals

   b) IB signal

   c) Starter repeater indicator

   d) b and c

11. C class (Manned) LC gate provided in outside station limit should be interlocked with _____ in Automatic Block signalling sections (b)

   a) Station signals

   b) Gate signal

   c) Starter repeater indicator

   d) b and c

12. All manned Level crossing gates both within and outside station limits falling on suburban section and Automatic Block signalling section shall be _____ irrespective of the classification/Train Vehicle Units of the gates (a)

   a) Interlocked

   b) Non-interlocked

   c) permanent close

   d) b and c

13. _____ Locking should be provided for Special class LC Gate signal in suburban section (a)

   a) Approach

   b) Dead approach

   c) conflicting

   d) b and c

14. _____ Locking should be provided for C class LC Gate signal in suburban Section (a)

a) Approach

b) Dead approach

c) Conflicting

d) b and c

15. In case of two aspect territories, a stop signal at _____ from the gate with a `G' marker and a warning board at 1 km in rear of the gate signal shall be provided (a)

a) 400 mts

b) 600 mts

c) 200 mts

d) 1000 mts

16. In case of multiple aspect territory, both colour light signalling and upper quadrant, a stop signal at _____ from the gate with a `G' marker and a distant signal at 1 km in rear of the stop signal shall be provided (a)

a) 180 mts

b) 400 mts

c) 200 mts

d) 120 mts

17. The Last Stop Signal-cum distant signal of L.C gate will display _____ aspect when the Line clear has not been obtained from the station in advance (a)

a) Red.

b) yellow

c) Green

d) White

18. The Last Stop Signal-cum distant signal of L.C gate will display _____ aspect when the Line clear has been obtained and the L.C gate is open to road traffic (b)

a) Red.

b) yellow

c) Green

d) White

19. The Last Stop Signal-cum distant signal of L.C gate will display _____ aspect When the Line clear has been obtained and the L.C gate is closed to road traffic (c)

a) Red.

b) yellow

c) Green

d) White

20. The Intermediate Block Signal (IB) - cum distant signal will display _____ aspect whenever the Block section ahead is not clear (a)

a) Red.

b) yellow

c) Green

d) White

21. The intermediate Block Signal (IB) - cum distant signal will display _____ aspect when the train is required to stop at the Home signal of station ahead (b)

a) Red.

b) yellow

c) Green

d) White

22. The intermediate Block Signal (IB) - cum distant signal will display _____ aspect when the train is required to stop at the Main line or Loop line Starter or is required to pass through via Loop line (d)

a) Red.

b) yellow

c) Green

d) Double yellow

23. The intermediate Block Signal (IB) - cum distant signal will display _____ When Block section ahead is clear train is to pass run through the station via Main line (c)

a) Red.

b) yellow

c) Green

d) Double yellow

24. _____ section all Level crossing gates shall be interlocked irrespective of the Classification (a)

a) Auto signalling

b) Block section

c) Sidings

d) b and c

25. _____ Section all Level crossings shall be provided with warning Bells operated by the approaching trains. (a)

a) Auto signalling

b) Block section

c) Sidings

d) b and c

26. A gate cum distant signal will have _____ number of aspects. (d)

a) One

b) Two

c) Three

d) Four

27. In UQ signaling a gate signal shall be located at minimum _____ mts from the gate. (b)

a) 400

b) 180

c) 120

d) 580

28. A gate stop signal will have _____ number of aspects. (a)

a) Two

b) Three

c) Four

d) One

29. If LC Gate is interlocked with advanced starter then _____ maker shall be provided below Advanced starter. (d)

a) G marker

b) AG marker

c) A & AG marker

d) NO marker

30. All Level crossing gates irrespective of classification, on Automatic sections Single/Double lines shall be _____ and provided with warning bells operated by approaching train (a)

a) Interlocked

b) Non- interlocked

c) Isolated

d) b and c

31. In case of multiple aspect territory, both colour light signalling and upper quadrant, a stop signal a 180 mts from the gate with a `G' marker and a distant signal at _____ in rear of the stop signal shall be provided (d)

a) 180 mts

b) 400 mts

c) 200 mts

d) 1000 mts

CHAPTER-19 : Section Capacity

1. The maximum number of trains that can be dealt on a given section of Railway during the period of twenty four hours is called _____ (a)

   a) Section Capacity

   b) Station capacity

   c) Signal capacity

   d) b and c

Chapter-20 : Principles of Signal Engineering

1. Each and every apparatus and circuit employed in a signalling system shall be so designed that a failure is occurring in any of all the component parts of the system results in the signal or signals controlled by the system displaying their _____ (a)

   a) Most restrictive aspects

   b) OFF aspect

   c) Malty aspects

   d) a and b

2. Reliability, simplicity and expansive capabilities shall be important considerations in the design of _____ and signaling systems. (a)

   a) Circuits

   b) Block diagram

   c) All diagrams

   d) b and c

3. The number of fixed signals provided shall be the _____ for each route (a)

   a) Minimum

   b) Maximum

   c) Optimum

   d) b and c

Objective Questions

Chapter - 1 : Introduction to Interlocking

1. In a station, different signalling gears are to be operated in a logical sequence for receiving or dispatching of trains for ensuring their ---------- (a)

   a) Safe running

   b) Un safe running

   c) late running

   d) b and c

2. Signals, Points, Lock bars and interlocked level crossing gates etc existing in a station yard are referred as _____ (a)

   a) Functions

   b) Interlocking

   c) Non-interlocking

   d) a, b and c

3. An arrangement of signals, points and other appliances, operated from a lever frame or panel, so interconnected by Mechanical locking or Electrical locking or both that their operation must take place in proper sequence to ensure safety" is _____ (b)

   a) Functions

   b) Interlocking

   c) Non-interlocking

   d) a, b and c

4. In mechanical signaling functions like signals, points and lock bars operated by _____ (a)

   a) Levers

   b) Plunger

   c) Tappet

   d) Down rod

5. If the levers operating the functions are located in the same lever frame, then the interlocking between the levers can be achieved _____ (a)

   a) Mechanically

   b) Electrically

   c) Electro- magnet coil

   d) b and c

6. The interlocking between a signal operated from cabin 'A' and the points in the overlap operated from cabin 'B' is achieved electrically through _____ (b)

   a) Plungers

   b) Slot

   c) Pad locks

   d) lock bar

7. This interlocking relationship between lever 1 and 2, can be expressed as 1 locks 2 and symbolically expressed as _____ (a)

   a) 1 x 2

   b) 2 % 1

   c) 1 / 2

   d) b and c

8. This interlocking relationship is expressed as 1 locks 2 symbolically expressed as (1 x 2), lever 1 is called _____ and lever 2 is called _____ (a)

   a) locking lever, locked lever

   b) locked lever, locking lever

   c) normal lever , Reverse lever

   d) b and c

9. This interlocking relationship between lever 1 and 2, can be expressed as 2 is Released by 1 and symbolically expressed as _____ (b)

   a) 2 x 1

   b) 2 ÷ 1

   c) 1 locks 2 both ways

   d) a and c

Chapter-2 : Preparation of Signalling Plan – The size of lever frame

1. Engineering scale plan is issued by _____ (a)

   a) Engg. Dept

   b) S & T Dept

   c) Operating Dept

   d) Commercial Dept

2. A signalling interlocking (SIP) plan is prepared based on _____ (a)

   a) ESP

   b) Working time table

   c) Special note

   d) SWR

3. A signalling plan is providing _____ information (d)

   a) Type of signalling

   b) The class of station

   c) The standard of interlocking

   d) a, b, & c

4. A single end point with rodding transmission can be operated up to a distance of _____ Meters (b)

   a) 275 mts

   b) 460 mts

   c) 600 mts

   d) 1000 mts

5. Cross over point with rodding transmission can be operated up to a distance of _____ Meters only (a)

   a) 275 mts

   b) 460 mts

   c) 600 mts

   d) 1000 mts

6. The locking tray of a "Catch Handle" type lever frame will be in combination or multiples of _____ (a)

   a) 8 and 10

   b) 5 and 7

   c) 4 and 8

   d) 12

7. In "Direct locking" type, the lever frame will be in a combination or multiples of _____ levers per bay (a)

   a) 5 and 7 b) 8 and 10

   c) 4 and 8 d) 12

8. All the levers in the lever frame are serially numbered from _____ with respect to the leverman facing the lever frame (a)

a) from left hand to right hand

b) Right hand to left hand

c) Center

d) b and c

9. _____ Numbering schemes may be adopted for numbering of levers in lever frame (d)

a) Geographical method

b) Group cum geographical method

c) Functional method

d) only a and b

10. The simplest method of numbering would be _____ method in which the functions operated from a particular cabin are numbered serially depending upon the geographical location in which they are situated (a)

a) Geographical

b) Group cum geographical method

c) Square sheet method

d) b and c

11. The disadvantage of geographical method numbering scheme is _____ (b)

a) Risky operation

b) cabin man have to move to and fro in the cabin for the various levers operation

c) Not feasible for big yards

d) a and c

12. The difficulty in lever operation experienced in geographical method of numbering can be overcome by numbering the functions in _____ method (a)

a) "Group-cum geographical"

b) geographical

c) Square sheet method

d) a, b and c

13. In "Group-cum geographical" method the functions in the yard are divided into three distinct groups & the numbering is done _____ and within the same group geographically (a)

a) group-wise

b) liver wise

c) lever position wise

d) b and c

14. In group-cum-geographical method of numbering all functions in a yard operated/controlled by this cabin are divided into _____ groups (c)

a) Two

b) four

c) three

d) five

15. In group-cum-geographical method of numbering the signals/slots to the extreme left of the cabin man as he faces the lever frame is identified and all signals/slots, which govern movement in the same direction, are grouped together in Group I ( )

    a) Group 1

    b) Group 2

    c) Group 3

    d) Group 5

16. In group-cum-geographical method of numbering all the level crossings, points and Lock bars operated from the cabin are grouped together in _____ (b)

    a) Group 1

    b) Group 2

    c) Group 3

    d) Group 4

17. In group-cum-geographical method of numbering the signals/slots leading to the direction opposite to that of signals in Group 1 are grouped together in _____ (a)

    a) Group 3

    b) Group 2

    c) Group 1

    d) Group 4

18. Spare levers are provided in the lever frame for the purpose of _____ (a)

    a) Future expansion of yard

    b) Easy operation of levers

    c) As general practice

    d) b and c

Chapter-3 : Essentials of Interlocking

1. It shall not be possible to take ' OFF' at the same time, any two fixed signals which can, lead to any_____ (a)

   a) conflicting movements

   b) Parallel movements

   c) Forward movement

   d) b and c

2. After the signal has been taken ' OFF ' it shall not be possible to move any points or lock on the route, including overlap and isolation, nor is to release any interlocked gates until the signal replaced to the_____ (a)

   a) 'ON' position

   b) OFF position

   c) Center position

   d) b and c

3. It shall not be possible to take 'OFF' a running signal, unless _____ (d)

   a) all points including isolation are correctly set,

   b) all facing points are locked

   c) all interlocked level crossing are closed and locked against public road for the line on which the train will travel including the overlap

   d) a, b and c

4. The distance between the signal and the first facing point has to be limited and Para 7.83 of Signal Engineering Manual Part-I specifies that this distance should not be more than _____ (b)

   a) 120 mts

   b) 180 mts

   c) 400 mts

   d) 600 mts

5. The distance between successive facing points has to be limited and Para 7.83 of SEM Part-I specifies that this distance should not be more than _____ mts (b)

   a) 120 mts

   b) 180 mts

   c) 400 mts

   d) 600 mts

6. If the distance becomes more than 180 Meters then an additional lock bar called _____ has to be introduced between the signal and the first facing point or between two successive facing points (d)

   a) Lock Retaining Bar

   b) Holding Bar

   c) Fouling mark

   d) a and b

7. Successive _____ locking is one of the arrangements of route holding (a)

a) Lock Bar

b) Points

c) Slots

d) b and c

8. Once the signal has been taken OFF, it must not be possible to alter the point unless the _____ has first been put back to the 'ON' position (b)

a) Point

b) Signal

c) Lock Bar

d) LC Gate

9. The Interlocking between the signal and the facing points and the Lock bars, results the points can not be unlocked and altered unless the _____ (a)

a) Signal lever is normalised

b) Point lever is normalised

c) Lock lever is normalised

d) Slot lever is normalised

10. The purpose of the lock bar on the facing point is such that the point cannot be unlocked when the train is passing over the _____ (a)

a) Lock bars.

b) Trailing point

c) LC Gate

d) b and c

11. Signal locks normal the _____ signal (a)

a) Conflicting

b) Flare signal

c) Detonating

d) b and c

12. Signal is released by the _____ (b)

a) Signal in rear

b) Signal in advance

c) Trailing lock bar

d) b and c

13. Signal releases _____ (a)

a) Signal in rear

b) Signal in advance

c) Trailing lock bar

d) b and c

14. Signal locks normal the point if required in _____ (a)
    a) Normal
    b) Reverse
    c) center
    d) b and c

15. Signal is released by the _____ if required in reverse (a)
    a) Point
    b) Slot
    c) Signal
    d) b and c

16. Signal locks both ways the point for _____ purpose (a)
    a) Route holding
    b) Route release
    c) Locking
    d) b and c

17. Signal is released by first _____ Lock bar (b)
    a) Trailing
    b) Facing
    c) Holding Bar
    d) a and c

18. Signal locks normal its _____ (b)
    a) Facing lock bar
    b) Trailing Lock bar
    c) Holding Bar
    d) a and c

19. Signal is _____ by L.C. Gate in the route (a)
    a) Released
    b) Locks normal
    c) Locks both ways
    d) b and c

20. Signal releases _____ for the same direction (a)
    a) Slot in rear
    b) L.C Gate
    c) Point
    d) Lock bar

21. Signal locks normal, the _____ for the opposite direction (a)
    a) Slot
    b) L.C Gate
    c) Point
    d) Lock bar

22. Point locks normal the _____ if required in normal (a)
    a) Signal
    b) Point
    c) Slot
    d) LC Gate

23. Point releases the _____ if required in reverse (a)
    a) Signal
    b) Point
    c) Slot
    d) LC Gate

24. Point locks normal the _____ (a)
    a) Conflicting points
    b) Signal
    c) Slot
    d) LC Gate

25. Point is released by _____ point in the route (a)
    a) More important
    b) Less important
    c) Centre
    d) b and c

26. Point releases _____ point in the route (b)
    a) More important
    b) Less important
    c) Centre
    d) b and c

27. Point releases _____ in case of trap point ( )
    a) Lock Bar
    b) Signal
    c) Slot
    d) LC Gate

28. Point is released by _____ in case of fouling protection (a)
    a) Lock Bar
    b) Signal
    c) Slot
    d) LC Gate

29. Point is released by _____in both ways in case of Slip siding /Catch siding (a)
    a) Lock Bar
    b) Signal
    c) Slot
    d) LC Gate

30. Point is released by _____ in the route in case of siding point (d)
    a) Lock Bar
    b) Signal
    c) Slot
    d) LC Gate

31. Point locks normal the _____ if required in normal (c)
    a) Lock Bar
    b) Signal
    c) Slot
    d) LC Gate

32. Point locks normal the _____ in case of isolation (c)
    a) Lock Bar
    b) Signal
    c) Slot
    d) LC Gate

33. First facing lock bar releases the _____ (b)
    a) Lock Bar
    b) Signal
    c) Slot
    d) LC Gate

34. Trailing lock bar locks normal the _____ (b)
    a) Lock Bar
    b) Signal
    c) Slot
    d) LC Gate

35. Lock bar releases in both ways in case of Slip siding /Catch siding (b)
    a) Lock Bar
    b) Point
    c) Slot
    d) LC Gate

36. Lock bar locks its own _____ both ways (b)
    a) Lock Bar
    b) Point
    c) Slot
    d) LC Gate

37. Lock bar is released by _____ in advance in the route (a)
    a) Lock Bar
    b) Point
    c) Slot
    d) LC Gate

38. Lock bar releases _____ in rear in the route (a)
    a) Lock Bar
    b) Point
    c) Slot
    d) LC Gate

39. Lock bar locks normal the opposite _____ in the route (a)
    a) Lock Bar
    b) Point
    c) Slot
    d) LC Gate

40. First facing lock bar releases the _____ (c)
    a) Lock Bar
    b) Point
    c) Slot
    d) LC Gate

41. Trailing lock bar locks normal the _____ (c)
    a) Lock Bar
    b) Point
    c) Slot
    d) LC Gate

42. LC Gate releases _____ in the route (c)

a) Lock Bar
b) Point
c) Signal
d) LC Gate

43. LC Gate releases the _____ (b)

a) Lock Bar
b) Siding Point
c) Signal
d) LC Gate

44. LC Gate r releases _____ in the route (c)

a) Lock Bar
b) Point
c) Slot
d) LC Gate

45. LC Gate releases _____ conditionally if separate overlap is available (c)

a) Lock Bar
b) Point
c) Slot
d) LC Gate

46. Slot released by _____ in advance for the same direction (b)

a) Lock Bar
b) Signal
c) Slot
d) LC Gate

47 Slot locks normal the _____ for the opposite direction (b)

a) Lock Bar
b) Signal
c) Slot
d) LC Gate

48. Slot locks normal the _____ if required in normal (c)

a) Lock Bar
b) Signal
c) Point
d) LC Gate

49. Slot locks normal the _____ in case of isolation (c)
    a) Lock Bar
    b) Signal
    c) Point
    d) LC Gate

50. Slot is released by the First facing _____ (a)
    a) Lock Bar
    b) Signal
    c) Point
    d) LC Gate

51. Slot locks normal the Trailing _____ (a)
    a) Lock Bar
    b) Signal
    c) Point
    d) LC Gate

52. Slot is released by _____ in the route (d)
    a) Lock Bar
    b) Signal
    c) Point
    d) LC Gate

53. Slot is released by _____ conditionally if separate overlap is available in the route (d)
    a) Lock Bar
    b) Signal
    c) Point
    d) LC Gate

54. Slot is released by _____ in advance of the route (c)
    a) Lock Bar
    b) Signal
    c) Slot
    d) LC Gate

55. Slot releases _____ in rear of the route (c)
    a) Lock Bar
    b) Signal
    c) Slot
    d) LC Gate

56. Slot locks normal the conflicting _____ (c)

a) Lock Bar
b) Signal
c) Slot
d) LC Gate

57. Warner is released by _____ (a)

a) Outer
b) Loop line Home
c) Advance starter
d) Calling ON

58. Warner is released by _____ (a)

a) Main line Home
b) Loop line Home
c) Advance starter
d) Calling ON

59. Outer is released by any one of _____ ( )

a) Home signal
b) Loop line Home
c) Advance starter
d) Calling ON

60. Main line Home locks loop line _____ having separate overlap (c)

a) Lock Bar
b) Signal
c) Slot
d) LC Gate

61. _____ signal locks shunt signal below it (a)

a) Running
b) Flare
c) Slot
d) b and c

62. A slot having separate overlap must lock all other _____ (c)

a) Lock Bar
b) Signal
c) Slot
d) LC Gate

63. Lock bar releases _____ in case of fouling protection (c)

a) Lock Bar

b) Point

c) Slot

d) LC Gate

64. Lock bar is released by point in case of _____ (b)

a) Lock Bar

b) Trap point

c) Slot

d) LC Gate

Chapter - 4 : Locking Tables – Single wire

1. For preparation of Locking Table _____ two methods can be adopted (d)
   a) Square sheet method
   b) Route method
   c) Route holding method
   d) a and b

2. Preparation of Locking in Square Sheet Method, disadvantage are _____ (d)
   a) Laboriousness
   b) time consuming
   c) More space consuming
   d) All a, b and c

3. Preparation of Locking Tables in ROUTE METHOD is more superior than _____ (a)
   a) Square sheet method
   b) Direct locking
   c) indirect locking method
   d) b and c

4. The locking between the conflicting functions pertaining to different routes is redundant through the _____ (a)
   a) Point levers
   b) lock bar lever
   c) Gate lever
   d) slot lever

5. The locking between the conflicting functions, which are directly on the same road, is achieved by the _____ (b)
   a) Point levers
   b) lock bar lever
   c) Gate lever
   d) slot lever

6. Electro-Mechanical yards as the function of route holding and track locking will be done by _____ (a)
   a) Track circuits
   b) internal circuits
   c) indication circuits
   d) b and c

Chapter - 6 : Locking Diagram

1. The interlocking relationships between various functions can be achieved either electrically or mechanically, for achieving it mechanically an interlocking _____ is used (a)

   a) Lever frame

   b) Relay

   c) Power supply

   d) b and c

2. A notch cut on the tappet exactly in the channel and available for the lock when it's lever is normal, is called the _____ (a)

   a) Normal notch

   b) Reverse notch

   c) Fouling notch

   d) b and c

3. A notch cut on a tappet at such a place that it comes in the channel and available for the lock when its lever is reversed, is called the _____ (b)

   a) Normal notch

   b) Reverse notch

   c) Fouling notch

   d) b and c

4. When any lever is reversed and due to the action of this lever if another lever is getting locked in the normal position is termed as _____ (a)

   a) Normal locking

   b) Back locking

   c) Fouling notch

   d) b and c

5. Due to the action of any lever if another lever is getting locked in the reverse position or a lever can not be reversed unless another lever is first reversed and when this lever is reversed the other gets locked in the reverse position is termed as _____ (a)

   a) released by or back lock

   b) normal locking

   c) Fouling notch

   d) b and c

6. "released by" or "back lock" is achieved by providing _____ on the tappet of another lever (b)

   a) Normal notch

   b) Reverse notch

   c) Fouling notch

   d) b and c

7. When action of any lever has to lock another lever in what so ever position it is prior to the operation of this lever, is termed as _____ (d)

a) Released by or back lock

b) Normal locking

c) Fouling notch

d) Locks both ways

8. A lever when operated from normal to reverse position actuates the lock pieces and results locking on other lever/s are generally termed as _____ (a)

a) Locking Lever

b) Locked lever

c) Fouling notch

d) b and c

9. A lever which is getting locked by lever when operated from normal to reverse position is called _____ (b)

a) "Locking Lever"

b) Locked lever

c) Fouling notch

d) b and c

10. Locking lever should always have a _____ (a)

a) Normal notch

b) Reverse notch

c) Fouling notch

d) b and c

11. On locking lever Lock should be _____ (a)

a) Inside the notch

b) Outside the notch

c) on lever

d) b and c

12. Locked Lever will have _____ for locks normal condition of lever (a)

a) Normal notch

b) reverse notch

c) Fouling notch

d) b and c

13. Locked Lever will have _____ for released by condition of lever (b)

a) Normal notch

b) reverse notch

c) Fouling notch

d) b and c

14. The maximum number of bridle bars that can be used at a given place in the channel shall not exceed to _____ (a)

a) 04

b) 05

c) 06

d) 02

15. The swinger, which is available in the channel when its lever is normal, is called as _____ (a)

a) "Normal Swinger"

b) Reverse swinger

c) Top piece

d) b and c

16. The swinger which comes in the channel when its lever is reversed is called as _____(a)

a) "Reverse Swinger

b) Normal swinger

c) Top piece

d) b and c

17. The number of swingers required to achieve the Locking is equal to the number of condition _____ (a)

a) Imposing levers

b) levers normal

c) lever position center

d) b and c

18. When the swinger is on locking lever, it is only a _____ and both the locks are inside (b)

a) Normal swinger

b) reverse swinger

c) Dummy Dog

d) a and c

19. Inherently every special locking is having _____ locking relations (where n = No. of levers in the group). (b)

a) n (n-2)

b) n (n-1)

c) n (n-3)

d) n (n-5)

20. Grouping of locking is necessary for _____ the locking materials, channels and workmanship (a)

a) Economising

b) More

c) Swingers

d) b and c

21. The swinger/ the top piece should not be provided in the _____ channels (a)

a) First and the last

b) middle

c) Any channel

d) b and c

22. _____ in the second channel and normal swinger in the last but one channel should not be provided (b)

a) Normal swinger

b) Reverse swinger

c) cut - piece

d) a and c

23. Swingers/top pieces should not be provided in the _____ on the same tappet (a)

a) Adjacent channel

b) Adjacent lever

c) Top piece

d) b and c

24. The number of bridle bars at any given place of a channel should not exceed _____ (b)

a) Two

b) Four

c) One

d) Five

25. An unconnected length of a bridle bar to a distance of more than 10 levers to be supported by a _____ (a)

a) Dummy lock.

b) Cut-Piece

c) Rivet

d) b and c

26. Pusher and bar butts should not be used in the _____ (a)

a) Lever frame

b) Lever lock

c) Lever tail

d) b and c

27. Use of top pieces shall be the last alternative for avoiding the _____ (a)

a) Fouling notches.

b) Normal notch

c) Reverse notch

d) b and c

28. Plan both ways locking to be provided in first and last channels to avoid _____ (a)
    a) Fouling of notches
    b) Normal notch
    c) Reverse notch
    d) b and c

29. The converse locking of locks normal is _____ (a)
    a) Same
    b) different
    c) conditional
    d) b and c

30. A swinger is required for a _____ (a)
    a) Conditional (special) locking
    b) Normal locking
    c) Converse locking
    d) b and c

Chapter - 7 : Testing of Locking

1. Interlocking lever frames must be tested at least _____ (a)

   a) Once in a year or earlier

   b) once in a two year

   c) once in a three year

   d) once in 5years

2. _____ are two methods of testing the lockings (Para 13.15SEM part-2) (d)

   a) Against the interlocking table,

   b) Against the Signalling plan

   c) Against Lever frame

   d) a and b

3. Overhauling of lever frames carried out once in _____ (c)

   a) Once in a year or earlier

   b) once in a two year

   c) once in a three year

   d) once in 5 years

Objective questions

Chapter - 1 : Lever frames

1. Single Wire lever frame classified as (a)
   (a) 3 types
   (b) 2 types
   (c) 4 types
   (d) 5 types

2. Length of the direct lever (SA 530) is (b)
   (a) 1455 mm
   (b) 2275 mm
   (c) 1980 mm
   (d) 2512 mm

3. Pitch of the Direct lever is (b)
   (a) 100 mm
   (b) 125 mm
   (c) 150 mm
   (d) 175 mm

4. Angular through of the Direct lever is (c)
   (a) 33 deg.
   (b) 52 deg.
   (c) 27 deg.
   (d) 42 deg.

5. Stroke of the Tappet in Direct lever is (a)
   (a) 346 mm
   (b) 277 mm
   (c) 65 mm
   (d) 178 mm

6. Pitch of the Channel in Direct Lever (SA-530) frame (a)
   (a) 110 mm
   (b) 70 mm
   (c) 63.3 mm
   (d) 84 mm

7. Width of the Channel in Direct Lever (SA-530) frame (b)
   (a) 55 mm
   (b) 70 mm
   (c) 40 mm
   (d) 65 mm

8. Max. No. of interlocking Bar in Direct Lever (SA-530) frame (a)
   (a) 3 Top and 3 Bottom
   (b) 2 Top and 3 Bottom
   (c) 2 Top and 2 Bottom
   (d) 3 Top and 2 Bottom

9. Max. No. of channels in Direct Lever (SA-530) frame (a)
   (a) 5 & 8
   (b) no limit
   (c) 2 & 4
   (d) 6

10. Bay in Direct Lever (SA-530) frame (c)
   (a) 8 or 10
   (b) 1, 2, 3, 4, 5, 6
   (c) 5 or 7
   (d) 12

11. Length of the Catch handle (SA 1101) is (c)
   (a) 1455 mm
   (b) 2275 mm
   (c) 1980 mm
   (d) 1645 mm

12. Pitch of the Catch handle (SA 1101) (c)
   (a) 150 mm
   (b) 125 mm
   (c) 100 mm
   (d) 210 mm

13. Angular Through of the Catch handle (SA 1101) is (a)
   (a) 33 deg.
   (b) 52 deg.
   (c) 27 deg.
   (d) 31 deg.

14. Stroke of the Tappet in Catch handle (SA 1101) is (c)
   (a) 346 mm
   (b) 277 mm
   (c) 65 mm
   (d) 156 mm

15. Pitch of the Channel in Catch handle (SA 1101) frame (c)
    (a) 110 mm
    (b) 70 mm
    (c) 55 mm
    (d) 65 mm

16. Width of the Channel in Catch handle (SA 1101) frame (c)
    (a) 55 mm
    (b) 70 mm
    (c) 40 mm
    (d) 65 mm

17. Max. No. of interlocking Bar in Catch handle (SA 1101) frame (c)
    (a) 3 Top and 3 Bottom
    (b) 2 Top and 3 Bottom
    (c) 2 Top and 2 Bottom
    (d) 3 Top and 2 Bottom

18. Max. No. of channels in Catch handle (SA 1101) frame (c)
    (a) 5 & 8
    (b) 2 & 4
    (c) no limit
    (d) 10

19. Bay in Catch handle (SA 1101) frame ( )
    (a) 8 or 10
    (b) 1, 2, 3, 4, 5, 6
    (c) 5 or 7
    (d) 6

20. Length of the Ground lever (a)
    (a) 1455 mm
    (b) 2275 mm
    (c) 1980 mm
    (d) 1755 mm

21. Pitch of the Ground lever (c)
    (a) 150 mm
    (b) 125 mm
    (c) 100 mm
    (d) 140 mm

22. Angular Through of the Ground lever (b)
    (a) 33 deg.
    (b) 52 deg.
    (c) 27 deg.
    (d) 65 deg.

23. Stroke of the Tappet in Ground lever (b)
    (a) 346 mm
    (b) 277 mm
    (c) 65 mm
    (d) 156 mm

24. Pitch of the Channel in Ground lever frame (b)
    (a) 110 mm
    (b) 63.3 mm
    (c) 55 mm
    (d) 85 mm

25. Width of the Channel in Ground lever frame (a)
    (a) 55 mm
    (b) 70 mm
    (c) 40 mm
    (d) 58 mm

Chapter - 2 : Cranks

1. First crank used in a rod transmission (c)
   (a) Accommodating Crank
   (b) Horizontal Crank
   (c) Vertical Crank
   (d) Relief crank

2. Adjustable sleeve in Adjustable Crank can be shifted in steps of (b)
   (a) 10 mm
   (b) 12 mm
   (c) 15 mm
   (d) 8 mm

3. Last crank used in rod transmission (b)
   (a) Accommodating crank
   (b) Adjustable crank
   (c) Vertical crank
   (d) Relief crank

4. To adjust the required stroke _____ crank is used (b)
   (a) Accommodating
   (b) Adjustable
   (c) Vertical
   (d) Relief

5. To divert the rod run up to 20^0 _____ crank is used (d)
   (a) Accommodating
   (b) Adjustable
   (c) Vertical
   (d) Relief

6. To divert the rod run up to _____ Relief crank is used (a)
   (a) 20^0
   (b) 30^0
   (c) 40^0
   (d) 25^0

7. One of the arm is CURVED in _____ crank (a)
   (a) Accommodating
   (b) Adjustable
   (c) Vertical
   (d) Relief

8. _____ crank used in Outside lead out (a)
   (a) Accommodating
   (b) Adjustable
   (c) Vertical
   (d) Relief

9. _____ crank used in Inside lead out (c)
   (a) Accommodating
   (b) Adjustable
   (c) Vertical
   (d) Relief

10. _____ crank is fixed at the base of signal (b)
   (a) Accommodating
   (b) Signal
   (c) Vertical
   (d) Relief

11. _____ crank is fixed at the base of signal (b)
   (a) Accommodating
   (b) Signal
   (c) Vertical
   (d) Relief

12. _____crank is used to convert vertical movement into horizontal movement (c)
   (a) Accommodating
   (b) Adjustable
   (c) Vertical
   (d) Relief

13. Vertical crank is used in _____lead out. (a)
   (a) Inside
   (b) Outside
   (c) Wire transmission
   (d) a & b

14. To divert the rod run 90 _____ crank is used (d)
   (a) Accommodating
   (b) Vertical
   (c) Relief
   (d) a & b

15. Accommodating crank 300mm x 300mm (12” x 12”) is used for lever pitch is ___ mm (b)
    (a) 125
    (b) 100
    (c) 133
    (d) 127

16. Accommodating crank _____ size is used for lever pitch is 100 mm (b)
    (a) 400 mm x 400 mm
    (b) 300 mm x 300 mm
    (c) 350 mm x 350 mm
    (d) 300 mm x 400 mm

17. Accommodating crank _____ size is used for lever pitch is 125 mm (a)
    (a) 350 mm x 350 mm
    (b) 300 mm x 300 mm
    (c) 400 mm x 300 mm
    (d) 300 mm x 400 mm

18. Accommodating crank 350mm x 350mm (12” x 12”) is used for lever pitch is ____ mm (a)
    (a) 125
    (b) 100
    (c) 133
    (d) 127

19. _____ 300 mm x 300 mm (12” x 12”) is used for lever pitch is 100 mm (4”) (a)
    (a) Accommodating
    (b) Adjustable
    (c) Vertical
    (d) Relief

20. _____ 350 mm x 350 mm (12” x 12”) is used for lever pitch is 100 mm(4”) (a)
    (a) Accommodating
    (b) Adjustable
    (c) Vertical
    (d) Relief

21. In adjustable crank length of the arms are _____ (d)
    (a) 400 mm x 400 mm
    (b) 300 mm x 300 mm
    (c) 350 mm x 350 mm
    (d) 300 mm x 450 mm

22. In _____ crank length of the arms are 300 mm x 450 mm (b)
    (a) Accommodating
    (b) Adjustable
    (c) Vertical
    (d) Relief

23. Signal crank arm length are _____ (a)
    (a) 225 mm x 300 mm
    (b) 300 mm x 300 mm
    (c) 225 mm x 350 mm
    (d) 300 mm x 450 mm

24. _____ crank arm length are 225 mm x 300 mm (d)
    (a) Accommodating
    (b) Adjustable
    (c) Vertical
    (d) Signal

25. Changing the alignment of Roding run i.e., 500 mm or 600 mm _____ Crank is used (a)
    (a) Straight Arm
    (b) Adjustable
    (c) Vertical
    (d) Signal

Chapter - 3: LEAD OUT

1. Inside cabin potion called as_____ (b)
   (a) Out side lead out
   (b) Inside lead out
   (c) Basement
   (d) Locking box

2. Out side cabin potion called as_____ (a)
   (a) Out side lead out
   (b) Inside lead out
   (c) Basement
   (d) Locking box

3. There are _____ types of Lead outs (c)
   (a) three
   (b) four
   (c) two
   (d) six

4. _____ is conned to vertical crank in inside lead out (a)
   (a) down rod
   (b) top rod
   (c) bottom rod
   (d) side rod

5. _____ is conned to Rocking shaft in inside lead out (a)
   (a) down rod
   (b) top rod
   (c) bottom rod
   (d) side rod

6. Down rod is conned to _____in inside lead out (d)
   (a) Relief crank
   (b) Horizontal crank
   (c) Accommodating
   (d) vertical crank

7. Down rod is conned to _____ in inside lead out (d)
   (a) Relief crank
   (b) Horizontal crank
   (c) Accommodating
   (d) Rocking shaft

8. Out side lead out _____crank is provided (c)
   (a) Relief
   (b) Horizontal
   (c) Accommodating
   (d) Rocking shaft

9. _____ lead out accommodating crank is provided (a)
   (a) Out side
   (b) Inside
   (c) Basement
   (d) Locking box

10. _____ is available in three heights (c)
   (a) Relief crank
   (b) Horizontal crank
   (c) Accommodating
   (d) Rocking shaft

11. Accommodating crank is available in _____ heights (a)
   (a) three
   (b) four
   (c) two
   (d) six

12. _____ is available in two sizes (c)
   (a) Relief crank
   (b) Horizontal crank
   (c) Accommodating
   (d) Rocking shaft

13. Accommodating crank is available in _____ sizes (c)
   (a) three
   (b) four
   (c) two
   (d) six

14. Channel irons are used for fixing of _____ in inside lead outs (d)
   (a) Relief crank
   (b) Horizontal crank
   (c) Accommodating
   (d) Vertical crank

15. Channel irons are used for fixing of _____ in In side lead outs (d)
    (a) Relief crank
    (b) Horizontal crank
    (c) Accommodating
    (d) Rocking shaft

16. Channel irons are used for fixing of _____ in Out side lead outs (c)
    (a) Relief crank
    (b) Horizontal crank
    (c) Accommodating
    (d) Rocking shaft

17. _____ is provided in inside lead out (d)
    (a) Relief crank
    (b) Horizontal crank
    (c) Accommodating
    (d) Vertical crank

18. _____ is provided in inside lead out (d)
    (a) Relief crank
    (b) Horizontal crank
    (c) Accommodating
    (d) Rocking shaft

19. _____ is provided in Out side lead out (c)
    (a) Relief crank
    (b) Horizontal crank
    (c) Accommodating
    (d) Rocking shaft

20. A Base is provided to fixed _____ (d)
    (a) Relief crank
    (b) Horizontal crank
    (c) Adjustment crank
    (d) All the cranks

21. _____must required concrete foundation to fix cranks (a)
    (a) A Base
    (b) Horizontal crank
    (c) Adjustment crank
    (d) Relief crank

22. A Base must required concrete foundation to fix _____ cranks (d)

(a) three
(b) four
(c) two
(d) all

23. A Base is provided to fixed _____ (d)

(a) Relief crank
(b) Horizontal crank
(c) Adjustment crank
(d) All the cranks and wheels

24. _____ must not required concrete foundation (d)

(a) Relief crank
(b) Horizontal crank
(c) Adjustment crank
(d) Trestle

25. Trestle _____ concrete foundation (a)

(a) Not required
(b) Required
(c) May required
(d) Must required

Chapter - 4: Rodding, Supports, Joints & Alignment

1. Solid rod dia. (b)
   (a) 25mm
   (b) 33mm
   (c) 55mm
   (d) 44mm

2. Solid rod available in length (a)
   (a) 18’
   (b) 15’
   (c) 17’
   (d) 16’

3. Solid rod weight (a)
   (a) 4 lb/ft
   (b) 6 lb/ft
   (c) 2 lb/ft
   (c) 3 lb/ft

4. The distance between two adjacent roller stands should not be more than _____ in solid rodding (a)
   (a) 2.2M
   (b) 3.3M
   (c) 1.89M
   (d) 4 M

5. The distance between two adjacent roller stands should not be more than _____ in tubular rodding (c)
   (a) 2.2M
   (b) 3.3M
   (c) 1.85M
   (d) 4 M

6. Trestles are supplied in (a)
   (a) 2-way & 4-way
   (b) 3-way & 4-way
   (c) 1-way & 3-way
   (d) 2-way & 3-way

7. Bottom rollers required for 2-way roller stand (b)
   (a) 3 no.
   (b) 2 no.
   (c) 4 no.
   (d) 5 no.

8. Bottom rollers required for 4-way roller stand (c)

(a) 3 no.

(b) 2 no.

(c) 4 no.

(d) 5 no.

9. Top rollers required for 2-way roller stand (b)

(a) 3 no.

(b) 2 no.

(c) 4 no.

(d) 5 no.

10. Top rollers required for 4-way roller stand (c)

(a) 3 no.

(b) 2 no.

(c) 4 no.

(d) 5 no.

11. Top roller pins required for 2-way roller stand (b)

(a) 3 no.

(b) 2 no.

(c) 4 no.

(d) 5 no.

12. Top roller pins required for 4-way roller stand (c)

(a) 3 no.

(b) 2 no.

(c) 4 no.

(d) 5 no.

13. Split pins required for 2-way roller stand (a)

(a) 3 no.

(b) 2 no.

(c) 4 no.

(d) 5 no.

14. Split pins required for 4-way roller stand (b)

(a) 3 no.

(b) 2 no.

(c) 4 no.

(d) 5 no.

15. The top of the rodding should not be less than _____ below the bottom of the rails (a)

(a) 25mm

(b) 33mm

(c) 55mm

(d) 44mm

16. The top of roller standards adjacent to tracks shall not be fixed more than _____ above rail level. (d)

(a) 25mm

(b) 33mm

(c) 55mm

(d) 64mm

17. The distance from the nearest rod to the center of the track shall not be less than _____ on BG lines. (c)

(a) 2025 mm

(b) 1370 mm

(c) 1905 mm

(d) 1164 mm

18. The distance from the nearest rod to the center of the track shall not be less than _____ on MG lines. (b)

(a) 2025 mm

(b) 1370 mm

(c) 1905 mm

(d) 1164 mm

19. Off-sets in the rodding should be limited _____ (a)

(a) 90mm

(b) 33mm

(c) 55mm

(d) 64mm

20. The distance between two adjacent roller stands should not be more than _____ in tubular rodding (a)

(a) 2.2M

(b) 3.3M

(c) 1.85M

(d) 4 M

21. A Base is provided to fixed _____ (d)

(e) Relief crank

(f) Horizontal crank

(g) Adjustment crank

(h) All the cranks

22. _____must required concrete foundation to fix cranks (a)

(e) A Base
(f) Horizontal crank
(g) Adjustment crank
(h) Relief crank

23. A Base must required concrete foundation to fix _____cranks (d)

(e) three
(f) four
(g) two
(h) all

24. A Base is provided to fixed _____ (d)

(e) Relief crank
(f) Horizontal crank
(g) Adjustment crank
(h) All the cranks and wheels

25. _____must not required concrete foundation (d)

(e) Relief crank
(f) Horizontal crank
(g) Adjustment crank
(h) Trestle

CH5: Rod Compensator

1. Compensator need not be used for points operation up to the length of (a)
   (a) 12 M
   (b) 13 M
   (c) 18.5 M
   (d) 8 M

2. Compensator need not be used for lock bar operation up to the length of (c)
   (a) 12 M
   (b) 13 M
   (c) 18.5 M
   (d) 8 M

3. In compensator Acute angle crank arm sizes are (b)
   (a) 375 x 235 mm
   (b) 406 x 253 mm
   (c) 300 x 225 mm
   (b) 300 x 253 mm

4. In compensator Obtuse angle crank arm sizes are (b)
   (a) 375 x 235 mm
   (b) 406 x 253 mm
   (c) 300 x 225 mm
   (b) 300 x 253 mm

5. Angle between Acute angle crank arms (d)
   (a) 120^0
   (b) 80^0
   (c) 90^0
   (d) 60^0

6. Angle between Obtuse angle crank arms (a)
   (a) 120^0
   (b) 80^0
   (c) 90^0
   (d) 60^0

7. In compensator link rod size is (b)
   (a) 346 mm
   (b) 275 mm
   (c) 165 mm
   (d) 180 mm

8. One compensator must be provided up to _____ Mtrs. of the rod transmission (b)
   (a) 346 M
   (b) 210 M
   (c) 265 M
   (d) 180 M

9. _____ compensator must be provided up to 210 Mtrs. of the rod transmission (c)
   (a) 3
   (b) 2
   (c) 1
   (d) 4

10. Two compensators must be provided for more than _____ Mtrs. of the rod transmission (b)
   (a) 346 M
   (b) 210 M
   (c) 265 M
   (d) 180 M

11. _____ no. of compensators must be provided for more than 210 Mtrs. of the rod transmission (b)
   (a) 3
   (b) 2
   (c) 1
   (d) 4

12. _____used as compensator up to 120M transmission. (d)
   (a) Accommodating Crank
   (b) Horizontal Crank
   (c) Vertical Crank
   (d) Reverse crank

13. A reverse crank used as compensator up to _____ transmission. (a)
   (a) 120 M
   (b) 210 M
   (c) 265 M
   (d) 180 M

14._____ crank used as compensator. (d)
   (a) Accommodating
   (b) Horizontal
   (c) Vertical
   (d) Reverse

15. Push movement is converted into Pull movement _____ crank is used (d)
    (a) Accommodating
    (b) Horizontal
    (c) Vertical
    (d) Reverse

16. Push movement is converted into Push movement _____ crank is used (a)
    (a) Normal
    (b) Horizontal
    (c) Vertical
    (d) Reverse

17. _____ movement is converted into Pull movement Reverse crank is used (c)
    (a) Pull
    (b) Horizontal
    (c) Push
    (d) Reverse

18. _____ movement is converted into Push movement Reverse crank is used (a)
    (a) Pull
    (b) Horizontal
    (c) Push
    (d) Reverse

19. _____ movement is converted into Pull movement Normal crank is used (a)
    (a) Pull
    (b) Horizontal
    (c) Push
    (d) Reverse

20. _____ movement is converted into Push movement Normal crank is used (c)
    (a) Pull
    (b) Horizontal
    (c) Push
    (d) Reverse

21. The _____ setting of the crank arms should correspond with prevailing temperature (b)
    (a) final
    (b) Initial
    (c) Push
    (d) Reverse

22. Acute angle crank works like _____ crank (a)
    (a) normal
    (b) initial
    (c) Push
    (d) Reverse

23. Obtuse angle crank works like _____ crank (d)
    (a) normal
    (b) initial
    (c) Push
    (d) Reverse

24. _____ crank works like normal crank (a)
    (a) Acute angle
    (b) Horizontal
    (c) Vertical
    (d) Obtuse angle

25. _____ crank works like Reverse crank (d)
    (a) Acute angle
    (b) Horizontal
    (c) Vertical
    (d) Obtuse angle

Ch6: Facing and Trailing point layouts

1. Facing point lock plunger length in In and Out type of locking without cross slide is (c)
   (a) 346 mm
   (b) 755 mm
   (c) 500 mm
   (d) 450 mm

2. Facing point lock plunger length in In and Out type of locking with cross slide is (b)
   (a) 3 46 mm
   (b) 755 mm
   (c) 500 mm
   (d) 450 mm

3. Facing point lock plunger length in straight through type of locking is (b)
   (a) 346 mm
   (b) 755 mm
   (c) 500 mm
   (d) 450 mm

4. Facing point lock plunger thickness is (a)
   (a) 20 mm
   (b) 38 mm
   (c) 50 mm
   (d) 45 mm

5. Facing point lock plunger width in (c)
   (a) 20 mm
   (b) 38 mm
   (c) 50 mm
   (d) 45 mm

6. Facing point lock plunger width in straight through type of locking is (b)
   (a) 20 mm
   (b) 38 mm
   c) 50 mm
   (d) 45 mm

6. Notch width in split stretcher bar in In and Out type of locking is (c)
   (a) 23 mm
   (b) 38 mm
   (c) 53 mm
   (d) 45 mm

7. Notch depth in split stretcher bar in In and Out type of locking is (a)
   (a) 23 mm
   (b) 41 mm
   (c) 53 mm
   (d) 45 mm

8. Notch width in split stretcher bar in straight through type of locking is (a)
   (a) 41 mm
   (b) 38 mm
   c) 53 mm
   (d) 45 mm

9. Notch depth in split stretcher bar in straight through type of locking is (a)
   (a) 23 mm
   (b) 41 mm
   (c) 53 mm
   (d) 45 mm

10. The length of lock bar is (a)
    (a) 42 ft
    (b) 38 ft
    (c) 53 ft
    (d) 45 ft

11. Section of lock bar is (a)
    (a) 50 x 50 x 6 mm
    (b) 50 x 40 x 6 mm
    (c) 50 x 50 x 20 mm
    (d) 40 x 40 x 6 mm

12. Inter distance between two lock bar clips shall not exceed (b)
    (a) 1040 mm
    (b) 1220 mm
    (c) 1250 mm
    (d) 950 mm

13. Total lift of lock bar is (c)
    (a) 35 mm
    (b) 38 mm
    (c) 44 mm
    (d) 40 mm

14. Leading stretcher bar should be fixed on BG at a distance of 13” from the toe of the switch rail. (a)

    (a) 13”

    (b) 14”

    (c) 15”

    (d) 12”

15. Leading stretcher bar should be fixed on MG at a distance of 15” from the toe of the switch rail. (c)

    (a) 13”

    (b) 14”

    (c) 15”

    (d) 12”

16. Leading stretcher bar should be fixed on ____ at a distance of 13” from the toe of the switch rail. (a)

    (a) BG

    (b) NG

    (c) MG

    (d) SG

17. Leading stretcher bar should be fixed on ____ at a distance of 15” from the toe of the switch rail. (c)

    (a) BG

    (b) NG

    (c) MG

    (d) SG

18. _____ stretcher bar should be fixed on BG at a distance of 13” from the toe of the switch rail. (a)

    (a) Leading

    (b) following I

    (c) following II

    (d) following III

19. . _____ stretcher bar should be fixed on MG at a distance of 15” from the toe of the switch rail. (a)

    (a) Leading

    (b) following I

    (c) following II

    (d) following III

20. Leading stretcher bar having the size on ____ is 6’ x 3” x ½”. (a)

    (a) BG

    (b) NG

    (c) MG

    (d) SG

21. Leading stretcher bar having the size on _____ is 4' x 2 1/2" x 3/8". (b)

    (a) BG

    (b) NG

    (c) MG

    (d) SG

22. The following stretcher bar should be fixed on ____ at a distance of 55" from the toe of the switch rail (a)

    (a) BG

    (b) NG

    (c) MG

    (d) SG

23. The following stretcher bar should be fixed on BG at a distance of ___ from the toe of the switch rail. (c)

    (a) 23"

    (b) 44"

    (c) 55"

    (d) 62"

24. The following stretcher bar should be fixed on ___ at a distance of 54" from the toe of the switch rail. (c)

    (a) BG

    (b) NG

    (c) MG

    (d) SG

25. The following stretcher bar should be fixed on MG at a distance of 54" from the toe of the switch rail. (c)

    (a) 43"

    (b) 54"

    (c) 55"

    (d) 42"

Ch-7 : Point and Lock Detector

1. Detector can be fixed on _____ and _____ sleepers (a)
   (a) 2 and 3
   (b) 3 and 4
   (c) 1 and 2
   (d) 4 and 5

2. _____ can be fixed on 2 and 3 sleepers (b)
   (a) FPL
   (b) Detector
   (c) Point
   (d) Radial guide

3. To install Detector on ____ and ____ sleepers sleepers must be long sleepers (a)
   (a) 2 and 3
   (b) 3 and 4
   (c) 1 and 2
   (d) 4 and 5

4. To connect _____ switch extension pieces to be fixed for tongue rails (b)
   (a) FPL
   (b) Detector
   (c) Point
   (d) Radial guide

5. To connect detector switch _____ pieces to be fixed for tongue rails (b)
   (a) FPL
   (b) extention
   (c) Point
   (d) Radial guide

6. To connect detector switch extension pieces to be fixed for _____rails (a)
   (a) tongue
   (b) Detector
   (c) Point
   (d) Radial guide

7. In _____ cross slide is connected to detector lock slide (a)
   (a) FPL
   (b) extention
   (c) Point
   (d) Radial guide

8. In FPL _____slide is connected to detector lock slide (a)
   (a) cross
   (b) extention
   (c) Point
   (d) Radial guide

9. In FPL cross slide is connected to _____ lock slide (b)
   (a) tongue
   (b) Detector
   (c) Point
   (d) Radial guide

10. In FPL cross slide is connected to detector _____ slide (b)
   (a) tongue
   (b) lock
   (c) Point
   (d) Radial guide

11. Maximum _____ slides can be used in detector (c)
   (a) 2
   (b) 3
   (c) 4
   (d) 5

12. Maximum four slides can be used in _____ (b)
   (a) FPL
   (b) Detector
   (c) Point
   (d) Radial guide

13. _____ is connected perpendicular to point and lock slides (a)
   (a) Signal slide
   (b) Detector
   (c) Point
   (d) Radial guide

14. Signal slide is connected perpendicular to _____ and lock slides (c)
   (a) FPL
   (b) Detector
   (c) Point
   (d) Radial guide

15. Signal slide is connected _____ to point and lock slides (a)
    (a) perpendicular
    (b) straight
    (c) side
    (d) parallel

16. _____ installed in the wire transmission (b)
    (a) FPL
    (b) Detector
    (c) Point
    (d) Radial guide

17. Detector installed in the _____ transmission (d)
    (a) FPL
    (b) rod
    (c) Point
    (d) Wire

18. _____ ensures correct setting of tongue rails with stock rail & correct locking of point (b)
    (a) FPL
    (b) Detector
    (c) Point
    (d) Radial guide

19. Detector ensures correct setting of ____ rails with stock rail & correct locking of point (b)
    (a) FPL
    (b) tongue
    (c) Point
    (d) guide

20. Detector ensures correct setting of tongue rails with _____ rail and correct locking of point (a)
    (a) stock
    (b) tongue
    (c) Point
    (d) guide

Ch8: Signals & Fittings

1. _____ lower quadrant semaphore signals are generally worked by single wire transmission (a)
   (a) 2- aspect
   (b) 3- aspect
   (c) 4- aspect
   (d) Multi aspect

2. 2-Aspect lower quadrant semaphore signals are generally worked by _____ transmission (a)
   (a) Single wire
   (b) Double wire
   (c) rod
   (d) all the above

3. _____ quadrant semaphore signals are generally worked by double wire transmission (d)
   (a) 2- aspect
   (b) 3- aspect
   (c) 4- aspect
   (d) Multi aspect

4. Upper quadrant semaphore signals are generally worked by _____ transmission (b)
   (a) Single wire
   (b) Double wire
   (c) Rod
   (d) all the above

5. In Mechanical _____ arm is connected to the down rod (a)
   (a) Signal spectacle
   (b) Signal
   (c) Signal roundels
   (d) Signal bracket

6. In Mechanical signals spectacle arm is connected to the _____ (b)
   (a) Top rod
   (b) Bottom rod
   (c) Down rod
   (d) wire

7. In tubular signal post the maximum height being only _____ (d)
   (a) 10 M
   (b) 12 M
   (c) 8 M
   (d) 10.5 M

8. Ladder on the signal post fixed at '225mm' from the top of the post. (d)
   (a) 210 mm
   (b) 125 mm
   (c) 215 mm
   (d) 225 mm

9. Type A spectical red roundel is _____ (a)
   (a) 213 mm
   (b) 125 mm
   (c) 215 mm
   (d) 225 mm

10. Type A spectical green roundel is _____ (b)
   (a) 210 mm
   (b) 245 mm
   (c) 215 mm
   (d) 225 mm

11. Type B spectical roundel is _____ (d)
   (a) 210 mm
   (b) 125 mm
   (c) 215 mm
   (d) 245 mm

12. Type A spectical _____ roundel is 213 mm (b)
   (a) yellow
   (b) red
   (c) green
   (d) white

13. Type A spectical _____ roundel is 245 mm (c)
   (a) yellow
   (b) red
   (c) green
   (d) white

14. _____ spectical red roundel is 213 mm (a)
   (a) Type A
   (b) Type B
   (c) Type C
   (d) Type D

15. _____ spectical green roundel is 245 mm (a)
    (a) Type A
    (b) Type B
    (c) Type C
    (d) Type D

16. _____ spectical red and green roundel is 245 mm (b)
    (a) Type A
    (b) Type B
    (c) Type C
    (d) Type D

17. _____ spectacle Down rod connected in the rear (a)
    (a) Type A
    (b) Type B
    (c) Type C
    (d) Type D

18. _____ spectacle Down rod connected in the front (b)
    (a) Type A
    (b) Type B
    (c) Type C
    (d) Type D

19. Type A spectacle Down rod connected in the _____ (c)
    (a) front
    (b) top
    (c) rear
    (d) bottom

20. Type B spectacle Down rod connected in the _____ (a)
    (a) front
    (b) top
    (c) rear
    (d) bottom

21. Type A spectacle _____connected in the rear (a)
    (a) Down rod
    (b) Top rod
    (c) Rear rod
    (d) Side rod

22. Type B spectacle _____ connected in the front (a)
    (a) Down rod
    (b) Top rod
    (c) Rear rod
    (d) Side rod

23. Dead space in Type A spectical is _____ (b)
    (a) 37 mm
    (b) 63 mm
    (c) 44 mm
    (d) 52 mm

24. Dead space in Type B spectical is _____ (a)
    (a) 37 mm
    (b) 63 mm
    (c) 44 mm
    (d) 52 mm

25. _____ in Type A spectical is 63 mm (d)
    (a) Front space
    (b) Top space
    (c) Rear space
    (d) Dead space

Ch-9: Transmission of Signal Wire

1. The maximum spacing between the pulley stakes should not exceed. (b)
   (a) 8M
   (b) 10M
   (c) 4M
   (d) 6 M

2. The joints on the wire should be sufficiently clear of pulley stakes is about (a)
   (a) 2M
   (b) 6M
   (c) 4M
   (d) 8M

3. The lowest transmission wire should be about _____ clear from the ground. (b)
   (a) 120 mm
   (b) 150 mm
   (c) 200 mm
   (d) 175 mm

4. The lowest transmission wire should be about 150mm clear from the _____ (c)
   (a) top wire
   (b) side wire
   (c) ground
   (d) bottom wire

5. The _____transmission wire should be about 150mm clear from the ground. (c)
   (a) top wire
   (b) side wire
   (c) lowest
   (d) bottom wire

6. When wire run crossing under road are made through pipes provided in the level crossings (d)
   (a) pipes
   (b) channel
   (c) concrete struff
   (d) all the above

7. _____ lever may be employed at a distance of 60 to 80 M from the signal. (a)
   (a) Facile stroke lever
   (b) direct lever
   (c) catch handle
   (d) ground lever

8. Facile stroke lever may be employed at a distance of _____from the signal. (c)
   (a) 50 to 80 M
   (b) 70 to 80 M
   (c) 60 to 80 M
   (d) 60 to 70 M

9. Facile stroke lever may be employed at a distance of 60 to 80 M from the _____ (b)
   (a) point
   (b) signal
   (c) lever frame
   (d) lock bar

10. Signal transmission up to _____ Comes under short distance transmission (a)
   (a) 300 M
   (b) 400 M
   (c) 250 M
   (d) 350 M

11. Signal transmission up to 300 mtrs. Comes under _____distance transmission (d)
   (a) long
   (b) medium
   (c) very long
   (d) short

12. _____ transmission above 300 mtrs Comes under short distance transmission (b)
   (a) point
   (b) signal
   (c) lever frame
   (d) lock bar

13. Signal transmission above _____ Comes under short distance transmission (a)
   (a) 300 M
   (b) 400 M
   (c) 250 M
   (d) 350 M

14. Signal transmission above 300 mtrs. Comes under _____distance transmission (a)
   (a) long
   (b) medium
   (c) very long
   (d) short

15. _____ transmission up to 300 mtrs Comes under short distance transmission (b)
    (a) point
    (b) signal
    (c) lever frame
    (d) lock bar

16. The length of pulley stake is about _____ (a)
    (a) 1220 mm
    (b) 1200 mm
    (c) 1150 mm
    (d) 1250 mm

17. The length of _____is about 1220 mm (b)
    (a) Facile stroke lever
    (b) pulley stake
    (c) catch handle
    (d) ground lever

18. The _____ of pulley stake is about 1220 mm (c)
    (a) height
    (b) depth
    (c) length
    (d) size

19. The signal wire transmission exceeding ____ is provided with a cabin wire adjuster (a)
    (a) 300 M
    (b) 400 M
    (c) 250 M
    (d) 350 M

20. The signal wire transmission exceeding 300 mtrs. Is provided with a _____ (c)
    (a) Facile stroke lever
    (b) pulley stake
    (c) cabin wire adjuster
    (d) wire adjusting screw

21. Vertical rope wheel is provided to convert ____ movement into horizontal Movement (b)
    (a) horizontal
    (b) vertical
    (c) parallel
    (d) side

22. Vertical rope wheel is provided to convert vertical movement into _____ Movement (a)
    (a) horizontal
    (b) vertical
    (c) parallel
    (d) side

23. The signal wire transmission less than 300 mtrs. Is provided with a _____ (d)
    (a) Facile stroke lever
    (b) pulley stake
    (c) cabin wire adjuster
    (d) wire adjusting screw

24. The signal wire transmission less than _____ is provided with a wire adjusting screw (a)
    (a) 300 M
    (b) 400 M
    (c) 250 M
    (d) 350 M

25. Signal crank fixed on signal base connected with _____ one side and down rod other side (a)
    (a) wire
    (b) rod
    (c) down rod
    (d) top rod

Ch-10: Level Crossing Gates

1. SPL – Class L.C. Gates can be provided if the TVU is more than _____ (c)
   (a) 30,000
   (b) 25,000
   (c) 50,000
   (d) 40,000

2. A – Class L.C. Gates can be provided if the TVU is more than _____ (a)
   (a) 30,000
   (b) 25,000
   (c) 50,000
   (d) 40,000

3. B – Class L.C. Gates can be provided if the TVU is more than _____ (b)
   (a) 30,000
   (b) 20,000
   (c) 50,000
   (d) 40,000

4. Range of operation for lifting barrier type is _____ (c)
   (a) 200 M
   (b) 125 M
   (c) 150 M
   (d) 250 M

5. The open position of the lifting barrier shall be within _____ degrees from the horizontal (c)
   (a) 80 to 90
   (b) 75 to 85
   (c) 80 to 85
   (d) 40 to 70

6. The closed position of the lifting barrier shall be within _____ degrees from the horizontal. (a)
   (a) 0 to 10
   (b) -5 to +5
   (c) 0 to 5
   (d) 5 to 10

7. _____ L.C. Gates can be provided if the TVU is more than 50,000 (a)
   (a) SPL – Class
   (b) A Class
   (c) B Class
   (d) C Class

8._____ L.C. Gates can be provided if the TVU is more than 30,000 (b)

(a) SPL – Class

(b) A Class

(c) B Class

(d) C Class

9._____ L.C. Gates can be provided if the TVU is more than 20,000 (c)

(a) SPL – Class

(b) A Class

(c) B Class

(d) C Class

10. _____ L.C. Gates can be provided if the TVU is more than 25,000 (c)

(a) SPL – Class

(b) A Class

(c) B1 Class

(d) C Class

11. L.C. Gate Census will be taken once in _____years (c)

(a) 1

(b) 2

(c) 3

(d) 4

12. The Whistle Board is provided on track at _____ Mtrs. while approaching L.C Gate (b)

(a) 200

(b) 600

(c) 550

(d) 800

13. The _____Board is provided on track at 600 Mtrs. while approaching L.C. Gate (a)

(a) Whistle

(b) Passenger warning

(c) Goods warning

(d) Sighting

14. Visibility of manned gate is _____ (c)

(a) 4 M

(b) 2 M

(c) 5 M

(d) 6 M

15. Speed Breakers are provided at _____ from center of track on both sides. (b)

(a) 40 M

(b) 20 M

(c) 15 M

(d) 25 M

16. Gate post be provided at _____ from center of track (d)

(a) 4 M

(b) 2 M

(c) 5 M

(d) 3 M

17. _____ L.C. Gates provided for cattle crossing (a)

(a) D Class

(b) A Class

(c) B Class

(d) C Class

18. Fencing parallel to the track in L.C. Gate to be provided both side of track on either side of road is _____ (c)

(a) 40 M

(b) 20 M

(c) 15 M

(d) 25 M

19. Gate lodge to be provided at _____ from center of track. (b)

(a) 4 M

(b) 6 M

(c) 5 M

(d) 3 M

20. Height gauge to be provided at _____ from center of track (d)

(a) 4 M

(b) 6 M

(c) 5 M

(d) 8 M

21. Boom height from road surface is _____ to be maintained (d)

(a) 4 M

(b) 6 M

(c) 0.5 to 1 M

(d) 0.8 to 1 M

22. Road width in A Class gate is _____ (c)

(a) 4 M

(b) 6 M

(c) 5.5 M

(d) 8 M

23. Road width in D Class gate is _____ (d)

(a) 4 M

(b) 6 M

(c) 5.5 M

(d) 2 M

24. The boom shall be either painted with _____ mm bands of alternate black and yellow color or provided with approved type of retro-reflective strips. (d)

(a) 200

(b) 600

(c) 550

(d) 300

25. Range of Mechanical lifting barrier is _____ (d)

(a) 200 M

(b) 600 M

(c) 150 M

(d) 300 M

CH11: Key Locks

1. Standard size of Key lock (E-type) _____ (b)
   (a) 155 x 100 x 65 mm
   (b) 155 x 95 x 65 mm
   (c) 155 x 95 x 75 mm
   (d) 100 x 75 x 65 mm

2. E-type Key locks used for locking _____ (d)
   (a) points
   (b) levers
   (c) location boxes
   (d) all the above

3. The stroke of the E-type lock is _____ (c)
   (a) 20 mm
   (b) 15 mm
   (c) 25 mm
   (d) 30 mm

4. The no. of wards in the key is _____ (d)
   (a) 2
   (b) 1
   (c) 5
   (d) 3

5. Length of each key ward _____ (b)
   (a) 2 mm
   (b) 6 mm
   (c) 5 mm
   (d) 3 mm

6. Length of each lug _____ (a)
   (a) 18 mm
   (b) 15 mm
   (c) 25 mm
   (d) 30 mm

7. Length of key ward _____ (a)
   (a) 18 mm
   (b) 15 mm
   (c) 25 mm
   (d) 30 mm

8. Length of each feather _____ (a)
   (a) 18 mm
   (b) 15 mm
   (c) 25 mm
   (d) 30 mm

9. No. of ward combination is _____ in E Type lock (c)
   (a) 20
   (b) 25
   (c) 24
   (d) 30

10. Types E Type of locks available is 42 (a)
   (a) 42
   (b) 50
   (c) 40
   (d) 30

11. H.P Locks are fixed at a distance of ____ from normal tongue side in the point on BG (d)
   (a) 620 mm
   (b) 515 mm
   (c) 250 mm
   (d) 500 mm

12. H.P Locks are fixed at a distance of ____ from normal tongue side in the point on MG (d)
   (a) 620 mm
   (b) 515 mm
   (c) 250 mm
   (d) Center

13. H.P Locks are fixed at a distance of ____ from normal tongue side in the point on NG (d)
   (a) 620 mm
   (b) 515 mm
   (c) 250 mm
   (d) center

14. H.P. Locks are fixed at a distance of 500 mm from normal tongue side in the point on _____ (a)
   (a) BG
   (b) MG
   (c) NG
   (d) SG

15. H.P Locks are fixed at a distance of center from normal tongue side in the point on ___ (d)
    (a) BG
    (b) MG
    (c) NG
    (d) MG & NG

16. _____H. P. Locks fixed for trap point (a)
    (a) 1- way
    (b) 2- way
    (c) 3- way
    (d) 4 – way

17. Tumblers will actuate with correct _____ combination (a)
    (a) ward
    (b) lug
    (c) feather
    (d) lug and feather

18. Operating piece will actuate with correct _____ combination (d)
    (a) ward
    (b) lug
    (c) feather
    (d) lug and feather

19. _____will actuate with correct ward combination (a)
    (a) Tumblers
    (b) lug
    (c) feather
    (d) Operating piece

20. _____ will actuate with correct lug and feather combination (d)
    (a) Tumblers
    (b) lug
    (c) ward
    (d) Operating piece

Objective Questions

Ch-2: Double Wire Levers

1. Double wire levers rotate through _____, when operated from normal to reverse. (a)
   (a) 180^0
   (b) 360^0
   (c) 270^0
   (d) 90^0
2. Double wire levers rotate through _____, when operated from reverse to normal (a)
   (a) 180^0
   (b) 360^0
   (c) 270^0
   (d) 90^0
3. The stroke transmitted to the tappet is _____ when a lever is operated from normal to reverse. (b)
   (a) 30 mm
   (b) 40 mm
   (c) 50 mm
   (d) 45 mm
4. Locking tappet stroke of a clutch lever is _____ upwards when tripped at Normal. (b)
   (a) 20 mm
   (b) 12 mm
   (c) 15 mm
   (d) 18 mm
5. Locking tappet stroke of a clutch lever is _____ downwards when tripped at Reverse. (b)
   (a) 20 mm
   (b) 12 mm
   (c) 15 mm
   (d) 18 mm
6. Locking tappet stroke of direct lever is _____ upwards while operating from Normal to Reverse. (d)
   (a) 20 mm
   (b) 12 mm
   (c) 35 mm
   (d) 40 mm

7. Locking tappet stroke of direct lever is _____ downwards while operating from Reverse to Normal. (c)

   (a) 20 mm

   (b) 12 mm

   (c) 40 mm

   (d) 18 mm

8. Locking tappet stroke of clutch lever is _____ upwards while operating from Normal to Reverse. (a)

   (a) 40 mm

   (b) 42 mm

   (c) 50 mm

   (d) 45 mm

9. Locking tappet stroke of clutch lever is _____ downwards while operating from Reverse to Normal. (a)

   (a) 40 mm

   (b) 42 mm

   (c) 50 mm

   (d) 45 mm

10. Locking tappet stroke of Rack & Pinion lever is _____ upwards while operating from Normal to Reverse. (a)

    (a) 40 mm

    (b) 42 mm

    (c) 50 mm

    (d) 45 mm

11. Locking tappet stroke of Rack & Pinion is _____ downwards while operating from Reverse to Normal. (a)

    (a) 40 mm

    (b) 42 mm

    (c) 50 mm

    (d) 45 mm

12. Locking tappet stroke is _____ upwards while operating from Normal to Pull of the three position miniature lever. (c)

    (a) 40 mm

    (b) 42 mm

    (c) 20mm

    (d) 45 mm

13 Locking tappet stroke is _____ downwards while operating from Normal to Push of the three position miniature lever. (a)

(a) 40 mm

(b) 42 mm

(c) 20 mm

(d) 45 mm

14. Locking tappet stroke is _____ downwards while operating from Normal to Push of the miniature lever. (c)

(a) 40 mm

(b) 42 mm

(c) 20 mm

(d) 45 mm

15. _____ stroke Direct lever operates the signal without detector up to 1200 Mts. (b)

(a) 400 mm

(b) 500 mm

(c) 600 mm

(d) 450 mm

16. 500 mm stroke Direct lever operates the signal without detector up to _____ Mts. (a)

(a) 1200

(b) 1500

(c) 1600

(d) 1000

17. _____ stroke Direct lever operates the signal without detector greater than 1200 Mts. (c)

(a) 400 mm

(b) 500 mm

(c) 600 mm

(d) 450 mm

18. 600 mm stroke Direct lever operates the signal without detector greater than _____ Mts. (a)

(a) 1200

(b) 1500

(c) 1600

(d) 1000

19 _____ stroke Clutch lever operates the Points up to 500 Mts. (b)

(a) 400 mm

(b) 500 mm

(c) 600 mm

(d) 450 mm

20. 500 mm stroke Clutch lever operates the Points up to _____ Mts. (b)

(a) 200
(b) 500
(c) 600
(d) 1000

21 _____ stroke Clutch lever operates the Point up to 730 Mts. (c)

(a) 400 mm
(b) 500 mm
(c) 600 mm
(d) 450 mm

22. 600 mm stroke Clutch lever operates the Point up to _____ Mts. (a)

(a) 730
(b) 500
(c) 600
(d) 1000

23. _____ stroke Clutch lever operates the Detector up to 600 Mts. (b)

(a) 400 mm
(b) 500 mm
(c) 600 mm
(d) 450 mm

24. 500 mm stroke Clutch lever operates the Detector up to ____ Mts. (c)

(a) 730
(b) 500
(c) 600
(d) 1000

25. The stroke of the Rack& Pinion lever is 200 mm (c)

(a) 400 mm
(b) 500 mm
(c) 200 mm
(d) 450 mm

Ch-3: Coupling of Levers

1. Coupling of levers economizes cost of material of ____ transmission. (d)
   (a) two
   (b) three
   (c) four
   (d) one

2. Coupling of levers economizes cost of installation of ____transmission. (d)
   (a) two
   (b) three
   (c) four
   (d) one

3. Coupling of levers economizes cost of maintenance of _____ transmission. (d)
   (a) two
   (b) three
   (c) four
   (d) one

4. Coupling of levers economizes cost of _____ compensator. (d)
   (a) two
   (b) three
   (c) four
   (d) one

5. Coupling of levers economizes cost of _____ signal mechanism when located on the same signal post. (d)
   (a) two
   (b) three
   (c) four
   (d) one

6. The _____ levers should be adjacent in the lever frame for coupling. (a)
   (a) two
   (b) three
   (c) four
   (d) one

7. The two levers should be _____in the lever frame for coupling. (a)
   (a) Adjacent
   (b) Far
   (c) Front and back
   (d) Starting and end

8. Length of transmission between the two coupled functions should not be greater than _____. (c)
   (a) 80 M
   (b) 70 M
   (c) 73 M
   (d) 85 M

9. _____ coupling to be adopted for the conflicting functions. (a)
   (a) Push-pull
   (b) Push-push
   (c) Pull-pull
   (d) Pull-push

10. Pull-Pull coupling to be adopted for the successive operated functions. (c)
   (a) Push-pull
   (b) Push-push
   (c) Pull-pull
   (d) Pull-push

11. _____ wires of both the coupling device levers are connected to the coupling device levers in Push-Pull coupling. (a)
   (a) Pull
   (b) Push
   (c) Return
   (d) Push and pull

12. _____ wire of first operated lever and Pull wire of second operated lever are connected are connected to the coupling device levers in Pull-Pull coupling. (c)
   (a) Pull
   (b) Push
   (c) Return
   (d) Push and pull

13. L.Q. Main and Loop Line home signals are connected in _____ coupling. (a)
   (a) Push-pull
   (b) Push-push
   (c) Pull-pull
   (d) Pull-push

14. L.Q. or U.Q. 1st loop and 2nd loop home signals are connected in _____ coupling (a)
   (a) Push-pull
   (b) Push-push
   (c) Pull-pull
   (d) Pull-push

15. A starter and a shunt below starter are connected in _____ coupling. (a)
    (a) Push-pull
    (b) Push-push
    (c) Pull-pull
    (d) Pull-push

16. Two shunt signals one below the other are connected in _____ coupling. (a)
    (a) Push-pull
    (b) Push-push
    (c) Pull-pull
    (d) Pull-push

17. A Home Signal and a Calling on signal below Home signal are connected in _____ coupling. (a)
    (a) Push-pull
    (b) Push-push
    (c) Pull-pull
    (d) Pull-push

18. Normal and Reverse detectors are connected in _____coupling. (a)
    (a) Push-pull
    (b) Push-push
    (c) Pull-pull
    (d) Pull-push

19. Main line Home signal on a multiple aspect signalling territory are connected in _____ coupling. (c)
    (a) Push-pull
    (b) Push-push
    (c) Pull-pull
    (d) Pull-push

20. _____ is adopted to prevent the tripping of a coupled clutch lever. (a)
    (a) Hook lock
    (b) Coupling device
    (c) Clutch
    (d) Push-pull

Ch-4: Points

1. The rack movement during unlocking of point is _____ (a)
   (a) 51 mm
   (b) 62 mm
   (c) 42 mm
   (d) 37 mm

2. The rack movement during Point setting stroke _____ (b)
   (a) 51 mm
   (b) 107 mm
   (c) 42 mm
   (d) 95 mm

3. The rack movement during unlocking of point is _____ (c)
   (a) 51 mm
   (b) 62 mm
   (c) 42 mm
   (d) 37 mm

4. The point mechanism movement during unlocking of point is _____ (d)
   (a) 150 mm
   (b) 62 mm
   (c) 42 mm
   (d) 127 mm

5. The point mechanism movement during Point setting stroke _____ (d)
   (a) 150 mm
   (b) 162 mm
   (c) 142 mm
   (d) 268 mm

6. The point mechanism movement during unlocking of point is_____ (a)
   (a) 105 mm
   (b) 62 mm
   (c) 42 mm
   (d) 268 mm

7. The total movement of rack during its lever operation is _____ (b)
   (a) 150 mm
   (b) 200 mm
   (c) 142 mm
   (d) 137 mm

8. Broken wire lock pawls must be tested once in _____ (b)
   (a) A month
   (b) three months
   (c) six months
   (d) a year

9. The width of the lock plunger on EFPL is _____ (d)
   (a) 51 mm
   (b) 62 mm
   (c) 42 mm
   (d) 49.8 mm

10. The width of the locks on the EFPL is _____ independently for N and R (d)
   (a) 51 mm
   (b) 62 mm
   (c) 42 mm
   (d) 38 mm

11. The two locks on the EFPL are staggered by _____ (a)
   (a) 12 mm
   (b) 62 mm
   (c) 42 mm
   (d) 38 mm

12. The two locks on the EFPL are separated by the distance by _____ (a)
   (a) 158 mm
   (b) 162 mm
   (c) 142 mm
   (d) 150 mm

13. EFPL to be connected by the thumb rule _____ (b)
   (a) Right in left out
   (b) Left in right out
   (c) Right in
   (d) Left out

14. The pitch of the notches on split lock stretchers with EFPL is _____in BG. (d)
   (a) 151 mm
   (b) 162 mm
   (c) 142 mm
   (d) 127 mm

15. The movement of cross slide when unlocked in EFPL is _____ (b)
    (a) 15 mm
    (b) 16 mm
    (c) 12 mm
    (d) 13 mm

16. The movement of cross slide when relocked in EFPL is _____ (b)
    (a) 15 mm
    (b) 16 mm
    (c) 12 mm
    (d) 13 mm

17. The movement of cross slide during point operation in EFPL is _____ (a)
    (a) Zero mm
    (b) 16 mm
    (c) 12 mm
    (d) 13 mm

18. Facing point Lock are fixed at a distance of _____ from normal tongue side in the point on BG (d)
    (a) 620 mm
    (b) 515 mm
    (c) 250 mm
    (d) 500 mm

19. Facing point Lock are fixed at a distance of _____ from normal tongue side in the point on MG (d)
    (a) 620 mm
    (b) 515 mm
    (c) 250 mm
    (d) Center

20. Facing point Lock are fixed at a distance of _____ from normal tongue side in the point on NG (d)
    (a) 620 mm
    (b) 515 mm
    (c) 250 mm
    (d) Center

21. Facing point lock plunger length in straight through type of locking is _____ (b)
    (a) 346 mm
    (b) 755 mm
    (c) 500 mm
    (d) 450 mm

22. Facing point lock plunger width in straight through type of locking is ____ (b)
    (a) 20 mm
    (b) 38 mm
    (c) 50 mm
    (d) 45 mm

23. The length of lock bar is _____ (a)
    (a) 42 ft
    (b) 38 ft
    (c) 53 ft
    (d) 45 ft

24. Section of lock bar is _____ (a)
    (a) 50 x 50 x 6 mm
    (b) 50 x 40 x 6 mm
    (c) 50 x 50 x 20 mm
    (d) 40 x 40 x 6 mm

25. Total lift of lock bar is _____ (c)
    (a) 35 mm
    (b) 38 mm
    (c) 44 mm
    (d) 40 mm

Ch-5: Signals

1. Signal mechanism should provide _____ protection (a)
   (a) Broken wire
   (b) Wire loose
   (c) Broken rod
   (d) lever

2. Point mechanism should provide _____ protection (a)
   (a) Broken wire
   (b) Wire loose
   (c) Broken rod
   (d) Lever

3. Detector mechanism should provide _____ protection (a)
   (a) Broken wire
   (b) Wire loose
   (c) Broken rod
   (d) lever

4. _____ mechanism should provide broken wire protection (d)
   (a) Signal
   (b) Point
   (c) Detector
   (d) All the above

5. Signal mechanism should increase the range of signal operation & ease of lever operation. (d)
   (a) Signal
   (b) Point
   (c) Detector
   (d) All the above

6. A single signal mechanism has _____ stop (a)
   (a) One
   (b) Two
   (c) Three
   (d) four

7. A coupled signal mechanism has _____ stops (b)
   (a) One
   (b) Two
   (c) Three
   (d) four

8. $0 - 45^0 - 90^0$ Signal Mechanism is used for working 3 aspects main line Home used for working 3 aspects main line Home (a)
   (a) $0 - 45^0 - 90^0$
   (b) $0 - 0 - 90^0$
   (c) $45^0 - 0 - 90^0$
   (d) $45^0 - 0 - 45^0$

9. $45^0 - 0 - 90^0$ Signal Mechanism is used for working the distant signal. (c)
   (a) $0 - 45^0 - 90^0$
   (b) $0 - 0 - 90^0$
   (c) $45^0 - 0 - 90^0$
   (d) $45^0 - 0 - 45^0$

10. $0 - 45^0 - 90^0$ Signal Mechanism is used for working of (a)
   (a) MAUQ Mine line starter
   (b) MAUQ loop line starter
   (c) MAUQ advance starter
   (d) MAUQ distance starter

11. $0 - 45^0$ Signal Mechanism is used for working of (b)
   (a) MAUQ Mine line starter
   (b) MAUQ loop line starter
   (c) MAUQ advance starter
   (d) MAUQ distance starter

12. $0 - 90^0$ Signal Mechanism is used for working of (c)
   (a) MAUQ Mine line starter
   (b) MAUQ loop line starter
   (c) MAUQ advance starter
   (d) MAUQ distance starter

13. $45^0 - 0 - 90^0$ Signal Mechanism is used for working the distant signal. (d)
   (a) MAUQ Mine line starter
   (b) MAUQ loop line starter
   (c) MAUQ advance starter
   (d) MAUQ distance starter

14. $0 - 45^0$ Signal Mechanism is used for working of (b)
   (a) TALQ Mine line starter
   (b) TALQ loop line starter
   (c) TALQ advance starter
   (d) All the above

15. _____ signal mechanism provided for distant signal (b)

(a) Pull-pull

(b) Push-pull

(c) Push

(d) Pull

Ch-6: Detectors

1. Length of Bottom rim is_____. (a)
   (a) 176 mm
   (b) 869 mm
   (c) 75 mm
   (d) 30 mm

2. Length of Detecting rim is _____ (b)
   (a) 176 mm
   (b) 869 mm
   (c) 75 mm
   (d) 30 mm

3. Length of Control rim is _____ (c)
   (a) 176 mm
   (b) 869 mm
   (c) 75 mm
   (d) 30 mm

4. Length of Locking rim is 30 mm. (d)
   (a) 176 mm
   (b) 869 mm
   (c) 75 mm
   (d) 30 mm

5. Length of _____ rim is 176 mm (a)
   (a) Bottom
   (b) Control
   (c) Detecting
   (d) Locking

6. Length of _____ rim is 869 mm (c)
   (a) Bottom
   (b) Control
   (c) Detecting
   (d) Locking

7. Length of _____ rim is 75 mm (b)
   (a) Bottom
   (b) Control
   (c) Detecting
   (d) Locking

8. Length of _____ rim is 30 mm (d)
   (a) Bottom
   (b) Control
   (c) Detecting
   (d) Locking

9. Height of Bottom rim is _____ (c)
   (a) 16 mm
   (b) 25 mm
   (c) 10 mm
   (d) 30 mm

10. Height of _____ rim is 10 mm. (a)
   (a) Bottom
   (b) Control
   (c) Detecting
   (d) Locking

11. Height of Control rim is _____ (b)
   (a) 16 mm
   (b) 25 mm
   (c) 10 mm
   (d) 30 mm

12. Height of _____ rim is 25 mm (b)
   (a) Bottom
   (b) Control
   (c) Detecting
   (d) Locking

13. Height of Detecting rim is _____ (c)
   (a) 16 mm
   (b) 25 mm
   (c) 10 mm
   (d) 30 mm

14. Height of _____ rim is 10 mm. (c)
   (a) Bottom
   (b) Control
   (c) Detecting
   (d) locking

15. Height of Locking rim is _____ (c)
    (a) 16 mm
    (b) 25 mm
    (c) 10 mm
    (d) 30 mm

16. Height of _____ rim is10 mm. (d)
    (a) Bottom
    (b) Control
    (c) Detecting
    (d) Locking

17. _____ rim permits the detector to be installed in a signal transmission (c)
    (a) Bottom
    (b) Control
    (c) Detecting
    (d) Locking

18. _____ rim establishes correct relation between switch and stock rails. (d)
    (a) Bottom
    (b) Control
    (c) Detecting
    (d) Locking

19. _____ rim locks the points in the last operated position when the wire opposite this rim breaks. (d)
    (a) Bottom
    (b) Control
    (c) Detecting
    (d) Locking

20. _____ rim proves the route (b)
    (a) Bottom
    (b) Control
    (c) Detecting
    (d) Locking

21. _____ rim acts as a limiting stop in the event of wire breakage (b)
    (a) Bottom
    (b) Control
    (c) Detecting
    (d) Locking

22. _____ rim helps the Locking rim to lock the points in the last operated position in the event of wire breakage. (b)

    (a) Bottom

    (b) Control

    (c) Detecting

    (d) Locking

23. _____ rim helps the Detecting rim to lock the points in the last operated position in the event of wire breakage. (b)

    (a) Bottom

    (b) Control

    (c) Detecting

    (d) Locking

24. Control Rim ensures the tripping of clutch lever. (b)

    (a) Bottom

    (b) Control

    (c) Detecting

    (d) locking

25. Control Rim ensures the tripping of _____. (a)

    (a) Clutch lever

    (b) Direct lever

    (c) Miniature lever

    (d) Rack and pinion lever

Ch-7: Compensators

1. Double wire compensator introduces initial tension _____ in the transmission wires with the transmission at rest. (c)
   (a) 48 kgs
   (b) 58 kgs
   (c) 68 kgs
   (d) 85 kgs

2. Double wire _____ introduces initial tension 68 kgs. in the transmission wires with the transmission at rest. (d)
   (a) detector
   (b) coupling device
   (c) point mechanism
   (d) compensator

3. The compensator levers should be _____ during operation of the lever. (a)
   (a) Locked
   (b) Free
   (c) Vertical
   (d) Parallel

4. The _____ should be locked during operation of the lever. (d)
   (a) detector
   (b) coupling device
   (c) point mechanism
   (d) compensator levers

5. Stretch in the intact wire in case of point transmission _____ (b)
   (a) 150 mm
   (b) 100 mm
   (c) 200 mm
   (d) 250 mm

6. Stretch in the intact wire in case of _____ transmission is 100 mm (a)
   (a) Point
   (b) Detector
   (c) Signal
   (d) L C Gate

7. Wire breakage mark is indicated by _____ counter sunk depression (b)
   (a) 5 mm
   (b) 6 mm
   (c) 7 mm
   (d) 4 mm

8. Compensator locking stroke should not be greater than _____ (c)
   (a) 15 mm
   (b) 20 mm
   (c) 25 mm
   (d) 30 mm

9. _____ locking stroke should not be greater than 25 mm (d)
   (a) detector
   (b) coupling device
   (c) point mechanism
   (d) compensator

10. Compensator having _____ levers (b)
   (a) 3
   (b) 2
   (c) 1
   (d) No levers

11. Compensator each lever provided _____ kgs weight (a)
   (a) 95 kgs
   (b) 58 kgs
   (c) 68 kgs
   (d) 85 kgs

12. Single compensator will have _____ pairs of wheels. (c)
   (a) 2
   (b) 4
   (c) 3
   (d) 1

13. Coupled compensator will have 4 pairs of wheels. (b)
   (a) 2
   (b) 4
   (c) 3
   (d) 1

14. 'A' Type Compensator Single, which is capable of stroke _____ (a)
   (a) 56"
   (b) 45"
   (c) 72"
   (d) 92"

15. _____ Compensator Single, which is capable of stroke 56” (a)
    (a) ‘A’ Type
    (b) ‘B’ Type
    (c) ‘C’ Type
    (d) ‘D’ Type

16. ‘A’ Type Compensator Coupled, which is capable of stroke _____ (a)
    (a) 56”
    (b) 45”
    (c) 72”
    (d) 92”

17. _____ Compensator Coupled, which is capable of stroke 56” (a)
    (a) ‘A’ Type
    (b) ‘B’ Type
    (c) ‘C’ Type
    (d) ‘D’ Type

18. ‘B’ Type Compensator Single, which is capable of stroke _____ (c)
    (a) 56”
    (b) 45”
    (c) 72”
    (d) 92”

19. _____ Compensator Single, which is capable of stroke 72” (b)
    (a) ‘A’ Type
    (b) ‘B’ Type
    (c) ‘C’ Type
    (d) ‘D’ Type

20. ‘B’ Type Compensator Coupled, which is capable of stroke _____ (c)
    (a) 56”
    (b) 45”
    (c) 72”
    (d) 92”

21. _____ Compensator Coupled, which is capable of stroke72” (b)
    (a) ‘A’ Type
    (b) ‘B’ Type
    (c) ‘C’ Type
    (d) ‘D’ Type

22. 'C' Type Compensator Coupled, which is capable of stroke _____ (d)
    (a) 56"
    (b) 45"
    (c) 72"
    (d) 92"

23. _____ Compensator Coupled, which is capable of stroke 92" (c)
    (a) 'A' Type
    (b) 'B' Type
    (c) 'C' Type
    (d) 'D' Type

24. 'A' Type single 56" stroke compensator used up to _____ transmission for point operation (b)
    (a) 500 M
    (b) 730 M
    (c) 1400 M
    (d) 1000 M

25. 'A' Type single 56" stroke compensator used up to _____ transmission for signal operation (b)
    (a) 500 M
    (b) 730 M
    (c) 1400 M
    (d) 1000 M

26. 'A' Type single 56" stroke compensator used up to _____ transmission for detector operation (b)
    (a) 500 M
    (b) 730 M
    (c) 1400 M
    (d) 1000 M

27. 'B' Type single 72" stroke compensator used up to _____ transmission for signal operation (c)
    (a) 500 M
    (b) 730 M
    (c) 1400 M
    (d) 1000 M

28. 'B' Type single 56" stroke compensator used up to _____ transmission for detector operation (b)
    (a) 500 M
    (b) 730 M
    (c) 1400 M
    (d) 1000 M

29. ‘C’ Type coupled 92” stroke compensator used up to _____ transmission for signal operation (c)

    (a) 500 M

    (b) 730 M

    (c) 1400 M

    (d) 1000 M

30. ‘C’ Type single 92” stroke compensator used up to _____ transmission for detector operation (c)

    (a) 500 M

    (b) 730 M

    (c) 1400 M

    (d) 1000 M

Ch-8 : Transmissions

1. Inter distance between two pulley stakes should not be greater than _____ in case of Signals. (a)
   (a) 20 M
   (b) 15 M
   (c) 25 M
   (d) 30 M

2. Inter distance between two pulley stakes should not be greater than 20 Mts in case of _____. (a)
   (a) Signal
   (b) Point
   (c) Detector
   (d) Lock bar

3. Inter distance between two pulley stakes should not be greater than _____ in case of Points. (b)
   (a) 20 M
   (b) 15 M
   (c) 25 M
   (d) 30 M

4. Inter distance between two pulley stakes should not be greater than 15 Mts in case of _____. (b)
   (a) Signal
   (b) Point
   (c) Detector
   (d) Lock bar

5. Inter distance between two pulley stakes should not be greater than _____ in case of Detectors. (b)
   (a) 20 M
   (b) 15 M
   (c) 25 M
   (d) 30 M

6. Inter distance between two pulley stakes should not be greater than 15 Mts in case of _____. (c)
   (a) Signal
   (b) Point
   (c) Detector
   (d) Lock bar

7. Inter distance between two pulley stakes should not be greater than _____ in case of Signals with Detectors. (b)

   (a) 20 M

   (b) 15 M

   (c) 25 M

   (d) 30 M

8. Inter distance between two pulley stakes should not be greater than 15 Mts in case of _____ (c)

   (a) Signal with signal

   (b) Signal with Point

   (c) Signal with Detector

   (d) Signal with Lock bar

9. Bottom most pulley should be 300 mm clear of ground in the D.W transmission. (d)

   (a) 200 mm

   (b) 150 mm

   (c) 250 mm

   (d) 300 mm

10. Transmission running in the diversion up to _____ should run through diversion pulley (b)

    (a) 20^0

    (b) 10^0

    (c) 30^0

    (d) 40^0

11. Transmission running in the diversion from straight up to 10^0 should run through _____. (a)

    (a) Diversion pulley

    (b) Diversion wheel dia. 195 mm

    (c) Diversion wheel dia. 225 mm

    (d) Diversion wheel dia. 150 mm

12. Transmission running in the diversion up to _____ should run through horizontal diversion wheel of dia 195 mm. (c)

    (a) 20^0

    (b) 10^0

    (c) 30^0

    (d) 40^0

13. Transmission running in the diversion from 10^0 up to 30^0 should run through horizontal _____. (b)
    (a) Diversion pulley
    (b) Diversion wheel dia. 195 mm
    (c) Diversion wheel dia. 225 mm
    (d) Diversion wheel dia. 150 mm

14. Transmission running in the diversion _____ should run through horizontal diversion wheel of dia 225 mm. (a)
    (a) Above 30^0
    (b) Above 20^0
    (c) Above 40^0
    (d) Above 50^0

15. Transmission running in the diversion greater than should run through horizontal _____. (c)
    (a) Diversion pulley
    (b) Diversion wheel dia. 195 mm
    (c) Diversion wheel dia. 225 mm
    (d) Diversion wheel dia. 150 mm

Objective

Chaprer-1 : Introduction to OHE System

1. Electric Traction began in India in 1925 with (d)
   (a) 1000 Volt D.C.
   (b) 7500 Volt D.C.
   (c) 2000 Volt D.C.
   (d) 1500 Volt D.C.

2. In the year of 1958 _____ Volt DC Electric Traction was introduced in India (c)
   (a) 2000 Volt D.C.
   (b) 2500 Volt D.C.
   (c) 3000 Volt D.C.
   (d) 3500 Volt D.C.

3. In the year 1951, _____ country first introduced 25 KV AC single phase 50 cycle traction system in the world (a)
   (a) FRANCE
   (b) JAPAN
   (c) CHINA.
   (d) INDIA

4. Traction Sub-Stations located along the route of the electrified sections at distances of _____ (c)
   (a) 10 to 20 KM
   (b) 30 to 40 KM
   (c) 40 to 50 KM
   (d) 50 to 60 KM

5. At each traction sub-station, normally _____ no of single phase transformers of 21.6/30.2 MVA capacity are installed (b)
   (a) One
   (b) Two
   (c) three
   (d) four

6. The permissible variation of bus bar RE voltage is within _____ (b)
   (a) +10% to –10%
   (b) +10% to –5%
   (c) +5% to –10%
   (d) +5% to –5%

7. Emergency telephone socket boxes are provided along the track at an interval of (d)
   (a) 0.5 to 0.75 km
   (b) 0.25 to 0.5km
   (c) 1 to 1.5 km
   (d) 0.75 to 1 km

8. By plugging the portable telephone into an emergency socket it is possible to communicate with the (a)
   (a) TPC.
   (b) Station SM
   (c) Test Room
   (d) Controler

9. Power for traction is tapped from different phases at adjacent substations in cyclic order(a)
   (a) To minimize imbalance
   (b) To improve the voltage
   (c) To improve PF
   (d) To minimise power loss

10. Electrical separation is achieved by providing _____ (a)
   (a) Neutral Sections
   (b) SSP
   (c) AT
   (d) TSS

11. These are situated approximately midway between two TSS (b)
   (a) SSP
   (b) SP
   (c) AT
   (d) STAGGERING

12. Neutral section is provided to avoid _____ of two different phases (c)
   (a) staggering
   (b) switching
   (c) bridging
   (d) anchoring

13. SSP facilitates maintenance and rapid isolation of OHE faults. (a)
   (a) maintenance and rapid isolation
   (b) switching
   (c) bridging
   (d) staggering

14. A stranded Cadmium Copper wire of about ____ sq.mm cross-section used for catenary (c)
    (a) 100 sq.mm
    (b) 150 sq.mm
    (c) 65 sq.mm
    (d) 50 sq.mm

15. A stranded Aluminium alloy wire of about ____ sq.mm cross-section used for catenary (a)
    (a) 115 sq.mm
    (b) 150 sq.mm
    (c) 65 sq.mm
    (d) 50 sq.mm

16. A grooved hard drawn Copper contact wire of 150 sq. mm wire is used to cater for higher catenary current in new works (b)
    (a) 115 sq.mm
    (b) 150 sq.mm
    (c) 65 sq.mm
    (d) 50 sq.mm

17. The contact wire is supported from the catenary by means of droppers _____ (a)
    (a) droppers
    (b) insulators
    (c) clips
    (d) ties

18. OHE with automatic tensioning is called _____ OHE. (a)
    (a) Regulated
    (b) Un Regulated
    (c) automatic tensioning
    (d) Normal

19. The normal height of contact wire for regulated OHE is 5.55 m above rail level (a)
    (a) 5,5 Mtrs
    (b) 7.5 Mtrs
    (c) 6.5 Mtrs
    (d) 6 Mtrs

20. On straight tracks, the catenary system is normally supported at maximum intervals of _____ m for BG (d)
    (a) 50 Mtrs
    (b) 65 Mtrs
    (c) 55 Mtrs
    (d) 72 Mtrs

21. On curvatured tracks, the catenary system is normally supported at minimum intervals of _____ m for BG (d)
    (a) 20 Mtrs
    (b) 35 Mtrs
    (c) 55 Mtrs
    (d) 27 Mtrs

22. The contact wire is "Staggered" so that it ensures a _____ (b)
    (a) uniform wear & tear of the contact wire.
    (b) uniform wear & tear of the pantographs.
    (c) uniform wear & tear of the catenary wire.
    (d) proper contact of pantograph with contact wire .

23. Providing of catenary wire along with contact wire to ensure (d)
    (a) traction return current though it.
    (b) Strengthening of conductivity.
    (c) Less voltage drop.
    (d) Constant hight of contact wire w.r.to rail .

24. The OHE conductors are terminated at intervals of about 1.5 KM to 2.0 KM with _____ anchored (a)
    (a) anchored.
    (b) isolated.
    (c) Staggered
    (d) neutralised.

25. _____ are provided at all the signalling and operationally essential lighting installations (a)
    (a) Auxiliary transformers
    (b) Sub sectioning posts
    (c) Sectioning posts
    (d) TSS.

26. Auxiliary transformers are to supply ac at _____ (d)
    (a) 240 V, 60 Hz.
    (b) 1100 V, 50 Hz.
    (c) 2200 V, 50 Hz
    (d) 240 V, 50 Hz.

27. Auxiliary transformers (AT) is made available to ensure reliable supply for Level crossings located at a distance of more than 2 km from Railway Station (b)
    (a) less than 2 km from Railway Station
    (b) more than 2 km from Railway Station
    (c) at 2 km from Railway Station
    (d) more than 1 km from Railway Station

28. For collecting power from 25 KV AC contact wire pantographs are provided with _____ In order to improve the life of the contact wire (a)

    (a) carbon strips

    (b) silver strips

    (c) brass strips

    (d) copper strips

29. To indicate to the driver that he is approaching a neutral section two warning boards at a distance of (b)

    (a) 500 m and 250 m in rear

    (b) 500 m and 250 m in advance

    (c) 500 m and 1000 m in rear

    (d) 500 m and 1000 m in advance

Chapter-2 : Signal Clearance And Visibility

1. In the vicinity of high voltage conductors, a minimum electrical clearance is required to be provided to safeguard against (c)

   (a) flashing

   (b) arcing

   (c) flashing/arcing

   (d) Conducting

2. Vertical clearance between any live part of OHE or Pantograph and part of any fixed structure (a)

   (a) 320 mm.

   (b) 270 mm.

   (c) 220 mm.

   (d) 300 mm.

3. Vertical clearance between any live part of OHE or Pantograph and part of moving load (b)

   (a) 320 mm.

   (b) 270 mm.

   (c) 220 mm.

   (d) 300 mm.

4. Lateral clearance between any live part of OHE or Pantograph and part of any fixed structure (a)

   (a) 320 mm.

   (b) 270 mm.

   (c) 220 mm.

   (d) 300 mm.

5. Lateral clearance between any live part of OHE or Pantograph and part of moving load (c)

   (a) 320 mm.

   (b) 270 mm.

   (c) 220 mm.

   (d) 300 mm.

6. Under no circumstances, a signal post or any of its fittings must be allowed to infringe _____ (b)

   (a) Outside un-shaded portion

   (b) in the un-shaded portion

   (c) arcing zone

   (d) plashing zone

7. When the signals have to be so located that they infringe, in to the shaded area (c)

   (a) Warning board to be provided (b) Wire mesh without earth

   (c) Wire mesh with earth (d) Earhing of Signal post

8. In case of signals located above the contact wire and provided with the iron screen it is necessary to connect them to the earth with earth resistance not exceeding _____ Ohms (b)
   (a) 100 Ohms
   (b) 10 Ohms
   (c) 5 Ohms
   (d) 2 Ohms

9. The screen shall be provided on the side adjacent to the catenary and for a signal post between two wired tracks _____ (a)
   (a) a screen on either side of the post will be required
   (b) a screen any one side of the post will be required
   (c) a screen on neither side of the post required
   (d) its a option

10. The distance between the signal and the mast in front of it must be _____ (b)
   (a) Less than 30 metres.
   (b) more than 30 metres.
   (c) Less than 10 metres.
   (d) more than 10 metres.

11. It is not desirable to locate a signal closer than _____ from the mast behind it. (d)
   (a) 50 metres.
   (b) 40 metres.
   (c) 20 metres.
   (d) 10 metres.

12. The distance from centre line of track to the nearest part of the masts is normally _____. This is called normal implantation or normal setting distance. (b)
   (a) 2 metres.
   (b) 2.5 metres.
   (c) 3 metres.
   (d) 3.5 metres.

13. The nearest part of the signal post from the centre line of track shall be _____ (c)
   (a) 2 metres.
   (b) 2.55 metres.
   (c) 2.844 metres.
   (d) 3.58 metres.

14. RDSO have recommended the setting distances/extra implantation of the masts in front of the signal MACLS without Route Indicator for a visibility of ____ on a tangent track. (b)
   (a) 500 metres.
   (b) 600 metres.
   (c) 650 metres.
   (d) 1000 metres.

15. RDSO have recommended the setting distances/extra implantation of the masts in front of the signal MACLS without Route Indicator for a visibility of _____ on a tangent track. (d)
    (a) 500 metres.
    (b) 600 metres.
    (c) 650 metres.
    (d) 1000 metres.

16. RDSO have recommended the setting distances/extra implantation of the masts in front of the signal MACLS with route indicator with horizontal arm for a visibility of _____. (b)
    (a) 500 metres.
    (b) 600 metres.
    (c) 650 metres.
    (d) 1000 metres.

17. RDSO have recommended the setting distances/extra implantation of the masts in front of the signal MACLS with route indicator without horizontal arm for a visibility of _____ (b)
    (a) 500 metres.
    (b) 600 metres.
    (c) 650 metres.
    (d) 1000 metres.

18. Signal units are generally so fixed that the height of the centre line of the red signal is _____ above rail level (c)
    (a) 4.35 metres.
    (b) 3.85 metres.
    (c) 3.65 metres.
    (d) 5.2 metres.

19. No part of a signal without route indicator shall normally be higher than _____ above rail level. (d)
    (a) 4.35 metres.
    (b) 3.85 metres.
    (c) 3.65 metres.
    (d) 5.2 metres.

20. For implantation no masts shall be provided for at least _____ spans in front of the signal. (b)
    (a) 4
    (b) 3
    (c) 2
    (d) 1

Chapter 3 – Protection of Operating and S&T Staff

1. Traction return currents pass through _____ (c)
   (a) Catenary
   (b) Separate cable
   (c) Rails
   (d) Direct Earth

2. The rods and wires in AC Electrified areas do carry a certain amount of _____ (c)
   (a) induced Current
   (b) induced voltage
   (c) induced voltage and current
   (d) No induced voltage and current

3. To protect the Operating and S&T staff from the effects of the voltages the rod runs and wires are (a)
   (a) provided with insulations.
   (b) provided with metal paint.
   (c) provided with warning
   (d) provided with normal arrangement

4. Each rod shall be provided with an insulator in the lead-out as close to the cabin as possible. (a)
   (a) as close to the cabin
   (b) as away from the cabin
   (c) as middle to the cabin
   (d) as any where to the cabin

5. Providing rod and wire insulator, it must be ensured that (b)
   (a) contact between the insulated and un insulator
   (b) no contact between the insulated and un insulator
   (c) contact between two insulated
   (d) contact between two un insulator

6. An additional insulator shall be provided between the last adjustable crank and the point/lock bar (b)
   (a) The purpose to provide the adjustment to the run of rods
   (b) The purpose to prevent the rail voltage being passed on to the run of rods
   (c) The purpose to prevent the corrosion of rods
   (d) The purpose to provide strength to the run of rods

7. If the rod transmission is more than 300 metres, _____ shall be provided on each rod at every 300 metres (c)
   (a) additional warning board
   (b) additional adjustable crank
   (c) additional insulators
   (d) additional compensator

8. If the rod transmission is more than _____ metres, additional insulators shall be provided on each rod at every 300 metres (c)

   (a) 200

   (b) 400

   (c) 300

   (d) 250

9. The distance between the insulators and the adjacent rod roller guide shall be _____ to permit the normal movement of the rod (d)

   (a) Very close

   (b) 1 Mtr

   (c) 2 Mtrs

   (d) adequate

10. Since the normal stroke is 200 mm, the insulation shall be at least _____ mm from the rod roller guide (a)

    (a) 305

    (b) 310

    (c) 300

    (d) 200

11. In case there is a large number of rodding in the same alignment, the insulated joints shall be provided on each rod run between the. (a)

    (a) same sets of rod roller guides

    (b) different sets of rod roller guides

    (c) two no. of staggering of roller guides

    (d) three no. of staggering of roller guides

12. The insulations shall be staggered so that the distance between the insulated joints of the two neighbouring rods shall not be less than _____ mm (a)

    (a) 305

    (b) 310

    (c) 300

    (d) 200

13. For rod running under the track, the top of the rod shall not be less than _____ mm below the bottom of the rail (b)

    (a) 20

    (b) 40

    (c) 30

    (d) 34

14. The distance between any OHE mast & the point rod shall not be less than ____ mm (b)
    (a) 20
    (b) 40
    (c) 30
    (d) 34

15. The wire insulator shall be provided on each wire as close to the cabin as possible. It is advisable to provide the insulator inside the cabin. (b)
    (a) To avoid theft.
    (b) is not exposed to sun and rain directly.
    (c) For easy of maintenance.
    (d) For better conduction.

16. An insulator shall be provided in each wire _____ the gear of operation (a)
    (a) Near.
    (b) At Starting to.
    (c) Middle to.
    (d) Any place to

17. All insulators shall be provided between _____ supporting brackets. (b)
    (a) between three consecutive stakes or pulleys
    (b) between two consecutive stakes or pulleys
    (c) between four consecutive stakes or pulleys
    (d) between six consecutive stakes or pulleys

18. The horizontal distance between two wires shall not be less than _____ mm. (b)
    (a) 20
    (b) 50
    (c) 30
    (d) 34

19. The vertical distance between two wires shall not be less than _____ mm. (d)
    (a) 305
    (b) 310
    (c) 300
    (d) 200

20. A minimum distance of _____ mm shall be maintained between the wire and the nearest edge of the rail or mast (b)
    (a) 20
    (b) 40
    (c) 30
    (d) 34

Chapter 4 : Earthing arrangements in RE Area

1. To afford safety to the operating and maintenance personnel against electric shock. (c)
   (a) Provide safety precaution
   (b) Provide insulated gears
   (c) Provide proper earthing to metal gears and safety precaution
   (d) Avoid staff operating the gears

2. Dangerous (voltage) potential appearing on the exposed parts with respect to earth due to (c)
   (a) electromagnetic induction
   (b) electrostatic induction
   (c) electromagnetic or electrostatic induction
   (d) Proper earthing

3. To ensure reliable and safe operation of the equipment by limiting or eliminating the _____ signal and Block circuits. (a)
   (a) induced voltages in
   (b) earthing of
   (c) increasing length of parallelism
   (d) introducing more metallic gears in

4. Block filter earthing and earthing of metallic cable sheath and armour are examples of this type of earthing (d)
   (a) increasing length of parallelism
   (b) introducing more metallic gears in
   (c) separation from earthing
   (d) limiting or eliminating the induced voltages

5. Equipment against build up of unduly high, voltages this can cause dielectric (_____) breakdown (a)
   (a) dielectric (Insulation) breakdown
   (b) dielectric (conductor) breakdown
   (c) dielectric (Earthing) breakdown
   (d) dielectric (metallic body) breakdown

6. Dielectric (Insulation) breakdown can occur mostly due to the _____ and lightning (b)
   (a) earthing
   (b) physical contact of 25 KV with Track
   (c) increasing length of parallelism
   (d) introducing more metallic gears in

7. The lever frame and other metallic frames of the cabin _____ (b)
   (a) No earthing is required
   (b) shall be connected together to a separate earthing
   (c) shall be connected separate to a separate earthing
   (d) shall be connected together to a block earthing

8. Metallic sheath and armouring of all underground cables (a)
   (a) to be earthing both ends
   (b) not to be earthed
   (c) Earthing is option
   (d) to be earthing any one ends

9. In case of signals falling within 2 meters from the live parts of the OHE, the protection screen shall be connected (d)
   (a) to the +ve Rails
   (b) to the -ve Rails
   (c) to the Both Rails
   (d) to earth

10. The resistance of an earth shall not exceed _____ ohms. Where a number of cables are run together (c)
   (a) 2
   (b) 4
   (c) 10
   (d) 5

Chapter 5 : Laying of Signalling Cables

1. In the vicinity of 25KV AC OHE, _____ permitted to be used as they are subjected to induction (b)

   (a) aerial lines are (b) No aerial lines are

   (c) No underground cable are (d) No MW comm. allowed

2. The main cables on AC electrified sections shall ordinarily be _____ cable (d)

   (a) PVC insulated

   (b) Armoured

   (c) aerial lines

   (d) PVC insulated and armoured

3. Paper insulated lead sheathed and armoured cables were earlier used but have since been discontinued in view of (c)

   (a) special jointing are requirements

   (b) special terminating requirements

   (c) special jointing and terminating requirements

   (d) Not to RE standards

4. Paper insulated Lead Sheathed (PILC) cables Failures on account of _____ resulting in low insulation (a)

   (a) ingress of moisture

   (b) Improper Earthing

   (c) Electro Magnetic induction

   (d) Electro Static induction

5. Insulation resistance of each core shall not be _____ at 500C as per IRS: S 63-89. (d)

   (a) more than 5.0 mega ohms/km

   (b) less than 5.0 K. ohms/km

   (c) more than 5.0 K. ohms/km

   (d) less than 5.0 mega ohms/km

6. The use of screened cables was discontinued owing to practical reasons involving _____ (c)

   (a) realisable earthing effect

   (b) realisable cost effect

   (c) realisable screening effect

   (d) realisable induction effect

7. As per extant instructions, _____ shall be used for carrying signalling circuits. (a)

   (a) only PVC insulated, sheathed, armoured unscreened cable

   (b) only PVC insulated, sheathed, armoured screened cable

   (c) only PVC sheathed, armoured unscreened cable

   (d) only PVC insulated, armoured unscreened cable

8. Screened signalling cable may be used in cases of signalling installations where _____ its further use (a)
   (a) screened cable is already in use
   (b) screened cable is already in use site conditions demand
   (c) site conditions demand
   (d) lightening is more

9. The cables laid parallel to the track shall normally be buried at a depth of _____ (c)
   (a) 0.50 m
   (b) 0.60 m
   (c) 0.80 m
   (d) 1.00 m

10. The cables laid across the track must be at a depth of _____ Below the bottom of the rail. (d)
   (a) 0.50 m
   (b) 0.60 m
   (c) 0.80 m
   (d) 1.00 m

11. in case of rocky soil, the depth of main cable may be reduced to _____ (a)
   (a) 0.50 m
   (b) 0.20 m
   (c) 0.30 m
   (d) 0.10 m

12. The depth of tail cables, which serve the track apparatus, shall not be less than ____ (a)
   (a) 0.50 m
   (b) 0.20 m
   (c) 0.30 m
   (d) 0.10 m

13. The cable shall be so laid that it is not less than _____ from the nearest edge of the mast supporting the catenary or any other live conductor. (d)
   (a) 3.00 m
   (b) 2.00 m
   (c) 2.00 m
   (d) 1.00 m

14. When the cable is laid at a depth greater than 0.5 m, a min distance of _____ between the cable and the nearest edge of the OHE structure shall be maintained (a)
   (a) 3.00 m
   (b) 2.00 m
   (c) 2.00 m
   (d) 1.00 m

15. The depth of the cable does not exceed _____ if the distance between the cable and OHE structure is Less than 3 mtr (a)

    (a) 0.50 m

    (b) 0.60 m

    (c) 0.80 m

    (d) 1.00 m

16. If it is difficult to maintain distances between the cable and OHE structure the cable shall be laid in concrete/heavy duty HDPE/Ducts or any other approved means for a distance of _____ on either side of the mast (a)

    (a) 3.00 m

    (b) 2.00 m

    (c) 2.00 m

    (d) 1.00 m

17. the cable laid in concrete/heavy duty HDPE/Ducts or any other approved means for a distance of 3 m on either side of the mast the distance between the cable and the mast may be reduced to _____ (c)

    (a) 0.80 m

    (b) 0.60 m

    (c) 0.50 m

    (d) 1.00 m

18. In the vicinity of TSS, the cables shall be laid at least _____ away from any metallic body of the substation (d)

    (a) 0.80 m

    (b) 0.60 m

    (c) 0.50 m

    (d) 1.00 m

19. In the vicinity of TSS, the cables shall be laid _____ away from the substation earth (d)

    (a) 0.80 m

    (b) 0.60 m

    (c) 0.50 m

    (d) 1.00 m

20. In the vicinity of TSS The cables shall therefore be laid in concrete pipes or enclosed brick channels for a length of _____ on either side of the sub-station (c)

    (a) 100 m

    (b) 200 m

    (c) 300 m

    (d) 400 m

21. In the vicinity of TSS As far as possible, the cables shall be laid _____ to the sub-station side. (b)

    (a) on the side of the track same

    (b) on the side of the track opposite

    (c) in between the track

    (d) Close to the TSS

22. In the vicinity of the switching stations the cables shall be laid at least _____ metre away from any metallic body of the station which is fixed in the ground. (d)

    (a) 0.80 m

    (b) 0.60 m

    (c) 0.50 m

    (d) 1.00 m

23. In the vicinity of the switching stations the cables shall be laid at least _____ away from the switching station earthing. (d)

    (a) 3.00 m

    (b) 2.00 m

    (c) 4.00 m

    (d) 5.00 m

24. by laying the cables through a concrete pipes In the vicinity of the switching station earting the distance can be reduced to _____ (a)

    (a) 1.00 m

    (b) 2.00 m

    (c) 4.00 m

    (d) 5.00 m

25. When more than one cable is laid and the sheath and armouring of each cable is _____, the screening improves, thereby reducing induced voltages (a)

    (a) separately earthed

    (b) earthed together

    (c) isolated from earth

    (d) connected to +ve Rail

26. When _____ cables are laid in the same trench, a distance of 100mm is to be maintained between them (b)

    (a) signalling main and tail cables

    (b) signalling and telecom cables

    (c) signalling and LT or HT power cables

    (d) telecom and tail cables

27. When _____ cables are laid in the same trench, they must be separated by a row of bricks between them. (c)
    (a) signalling main and tail cables
    (b) signalling and telecom cables
    (c) signalling and LT or HT power cables
    (d) telecom and tail cables

28. For recognising different cables in same trench the cables shall be laid in an order from top (b)
    (a) Telecom, HT, bricks, signal, LT. cable
    (b) Telecom, signal, bricks, LT,HT. cable
    (c) Telecom, bricks ,signal,, LT,HT. cable
    (d) signal, bricks, LT, Telecom, HT. cable

29. When _____ are laid in separate trench and are running parallel, a minimum horizontal distance of 0.50 m (a)
    (a) HT or LT power and signalling cables
    (b) signalling and Telecom cables
    (c) Telecom and signalling cables
    (d) HT and LT power cables

30. When HT or LT power cables and signalling cables are laid in separate trench _____ a minimum distance of 0.20 metres shall be maintained. (b)
    (a) On fat forms
    (b) On track crossings
    (c) On bridges
    (d) On culverts

31. During track crossings The cables should cross the track _____ (b)
    (a) Parallel to the track
    (b) at right angles
    (c) at angle of 45º
    (d) ZIG Zag to the track

32. The cables should cross the track under _____ (c)
    (a) points and crossings
    (b) bridges
    (c) plain track where no points and crossings
    (d) any place

33. The cables are to be laid in _____ while crossing the track (a)
    (a) concrete pipes
    (b) GI pipe
    (c) HDFC Pipes
    (d) PVC Pipe

34. The _____ of the cable trench shall be normally 0.46 metre (c)
    (a) Depth
    (b) Length
    (c) width
    (d) Size

35. The bottom of the cable trench In case, the ground is rocky, the cable shall be laid on a layer of _____ of 50mm thickness deposited at the bottom of the trench (c)
    (a) River Sand
    (b) Sea Sand
    (c) Coal
    (d) Metal stone

36. When cables have to cross a metallic bridge, they shall be placed inside a _____ withstand 6000 V AC (a)
    (a) GI trough filled with sealing compound suitable to
    (b) RCC Pipes
    (c) GI PIPES
    (d) HDFC

37. _____ the cables shall be laid at a distance of 8 to 10 metres from the centre of the nearest track (c)
    (a) Within the station limits
    (b) Outside Block section
    (c) Outside station limits
    (d) Station and Block section limits

38. _____ where there are no OHE masts along the route of the cable, the trenches shall preferably be dug at a distance of 3 metres from the centre of track. (a)
    (a) Within the station limits
    (b) Outside Block section
    (c) Outside station limits
    (d) Station and Block section limits

39. _____ when there are OHE masts along the route of the cable, the trenches shall be dug at a distance of not less than 5.5 metres from the centre of the track. (a)
    (a) Within the station limits
    (b) Outside Block section
    (c) Outside station limits
    (d) Station and Block section limits

40. Trenches shall be dug, cables laid and refilling done _____ (c)
    (a) Within one week
    (b) Within 10 days
    (c) on the same day
    (d) as per site condition

41. During excavation, the soil of the trenches shall be thrown _____ (b)
    (a) on the ballast
    (b) away from the ballast
    (c) In side of track
    (d) In between up and Down Track

42. In the case of track crossings, the work shall be done in the presence _____ (d)
    (a) ASTE
    (b) Sr.DSTE
    (c) RPF
    (d) JE/SSE P way

43. The cabling work shall be supervised at site personally by an official of S&T department not below the rank of (d)
    (a) ASTE
    (b) Sr.DSTE
    (c) SSE/Sig
    (d) JE/Sig

Chapter 6 : Block Instruments & Circuits

1. The block circuits shall he transferred to _____ in RE area (a)
   (a) underground cables
   (b) areal lines
   (c) MW
   (d) Wan Network

2. Since block circuits are safety circuits, _____ shall be provided for block circuits in RE area (a)
   a. special P.V.C. insulated quads
   b. underground cables
   c. aerial lines
   d. underground Un Screened cables

3. A _____ is provided for each pair of block quad (c)
   a. Circuit Breaker
   b. Earthing
   c. transformer
   d. Condenser

4. The pairs are used through the transformers for _____ circuits (d)
   a. block telephones
   b. block bell
   c. block Instrument
   d. block telephones and block bell

5. For block circuits, which work on DC, _____ used and so direct connection through the cables (b)
   a. transformers can be
   b. transformers cannot be
   c. SPD can be
   d. Condensers in series

6. To _____ cable conductors, the phantoms of each pair is used for the block circuit (c)
   a. Improve insulation of
   b. Reliable service of
   c. economise on
   d. avoid noise in

7. Protective devices shall be provided _____ for protection of the instruments as well as the staff operating them (d)
   a. as per site condition
   b. at one end of the block circuit
   c. as an option
   d. at either end of the block circuit

8. The principal protective device used is called _____ For block working (c)
   a. phantoms circuit
   b. Isolation T/F
   c. Block Filter
   d. Condenser

9. The filter unit consists of _____ connected across the junction (b)
   a. four chokes with Four condensers
   b. four chokes with two condensers
   c. Two chokes with two condensers
   d. Two chokes with Four condensers

10. When OFC, Radio or other communication means are used for block working _____ of approved design shall be used (d)
   a. Block panel
   b. SSDAC
   c. BPAC
   d. UFSBI

11. UFSBI equipment always _____ block instruments (c)
   a. in centre of Block section
   b. Away from the
   c. be close to the
   d. Keep At LSS or Home for

12. In case the distance between UFSBI and block instrument is more than 500 metres _____ shall be inserted (c)
   a. SPD
   b. Isolation T/F
   c. block filter
   d. RE Cutting

13. When a block section originates at a station in electrified area and terminates at a station in non-electrified area, filters _____ of such block section (a)
   a. shall be provided at both ends
   b. shall be provided at one ends
   c. are not required
   d. are option

Chapter 7 : Stray Currents

1. Natural currents are found to be flowing in the soil in most parts of the world especially in _____ (b)

   a. Black Soils
   b. rocky Soils
   c. Hills area
   d. sea shores

2. It is necessary that stray current tests be carried out to ensure that _____ do not operate with stray currents (a)

   a. DC track relays
   b. Point operating relays
   c. Block operating relays
   d. Point operating relays

3. For measuring the stray current test are to be carried out only on _____ (d)

   a. Station sections
   b. Block sections
   c. Electrified Areas
   d. Non-electrified Areas

4. For measurement of stray voltage the resistance 'R' shall be equal to the resistance of the (b)

   a. Earth pit
   b. Track Relays
   c. Rails
   d. Ballast

5. For measurement of stray voltage, _____ as measured across the Resistance 'R' shall not exceed 100 mill volts. (c)

   a. Earth pit drop voltage
   b. Track Relays voltage
   c. Rail earth voltage
   d. Cable Voltage Drop

6. The total stray current as measured, shall not exceed 10 milliamps if the length of the track circuit is (a)

   a. less than 100 metres
   b. More than 100 metres
   c. less than 100 Khmers
   d. More than 100 K.metres

7. The total stray current as measured, shall not exceed 100 milliamps, if the length of the track circuit is. (b)

   a. less than 100 metres b. More than 100 metres
   c. less than 100 Khmers d. More than 100 K.metres

Chapter 8 : Alterations to Track Circuits

1. In a _____ only one rail is used for traction return current and the other rail is insulated for track circuiting (a)

   a. DC track circuit

   b. Audio Frequency track circuit

   c. Universal AXC

   d. Digital AXC

2.The rail, which is reserved for traction return current, is called the un insulated rail Any connection from the OHE mast or any other structure shall be made to the _____ only (a)

   a. un insulated rail

   b. insulated rail

   c. un insulated and insulated rail

   d. Near by S&T Location

3. When the track is shunted by a pair of wheels at the far end large alternating current can flow through –ve rail and producing a voltage drop of 10 volts per 90 metres across _____ at 250 Amps. (d)

   a. battery

   b. Charger

   c. +ve Rail

   d. Track Relay

4. There are two contemporary methods of A.C. immunisation, one employing a series _____ and the other inherently immunising the relay itself (c)

   a. battery

   b. Charger

   c. Choke

   d. Track repeater Relay

5. _____ has high A.C. impedance, and D.C. resistance of only few ohms which can easily be connected in series with the relay (c)

   a. battery

   b. Charger

   c. Choke

   d. Track Relay

6. _____ safe and reliable operation, could be maintained with max: 50 V A.C. across the relay and on this basis, a maximum length of 450 meters (c)

   a. Using A.C. immunised Track Repeater relays

   b. Choke

   c. Using A.C. immunised Track Relay

   d. Regulating Resistance of 0-30Ω

7. If the feed end and relay ends happen to be interchanged, then the _____ is required to be protected from the A.C. voltages. (a)
   a. battery
   b. Charger
   c. Choke
   d. Track Relay

8. At Feed end, transformer rectifier set alone should _____ (a)
   a. not be used
   b. be used
   c. Option
   d. be used with SPD and filters

9. The maximum length of track circuit is 450 m, if _____ are provided with a train shunt resistance (TSR) value of 0.5 ohm. (b)
   a. concrete sleepers
   b. wooden sleepers
   c. Iron sleeper
   d. concrete and wooden sleepers

10. D.C. single rail track circuit length shall not exceed 350 metres when _____ are used (RDSO's letter No. STS/EANS/SLP dated 18.10.1978) (a)
   a. concrete sleepers
   b. wooden sleepers
   c. Iron sleeper
   d. concrete and wooden sleepers

11. Transverse Bonding is provided by Electrical Department but the identification of the non-insulated rail is to be done _____ Department (c)
   a. Engineering
   b. OHE
   c. S and T
   d. Operating

12. In the event of a break in the _____ very heavy current will have flow through the track relay as well as the equipment to avoid this, the un-insulated rails of adjacent tracks shall be cross bonded at intervals of 100 metres. (a)
   a. un-insulated rail
   b. insulated rail
   c. un-insulated and insulated rail
   d. catenary

13. _____ shall be provided on the un-insulated rail at either end of the track circuit in case the track circuit is less than 100 metres (b)
   a. Transverse Bonding
   b. Cross Bonding
   c. Structural Bonding
   d. Longitudinal Bonding

14. Cross Bonding shall be provided on the _____ at either end of the track circuit in case the track circuit is less than 100 metres (a)
    a. un-insulated rail
    b. insulated rail
    c. S & T Signal Post
    d. Un insulated and insulated rail

15. On single line sections, beyond top Points For _____ an extra rail (scrap rail) will be laid by Engineering Department (b)
    a. Transverse Bonding
    b. Cross Bonding
    c. Structural Bonding
    d. Longitudinal Bonding

16. Structural Bonds provided to connect any metallic structure of _____ which is near by the side of track to un-insulated rail (b)
    a. Engineering
    b. OHE
    c. S and T
    d. Operating

17. Structural Bonds provided to connect any metallic structure of OHE which is near by the side of track to _____ rail (a)
    a. un-insulated rail
    b. insulated rail
    c. S and T Sigg Post
    d. un-insulated and insulated rail

18. Longitudinal bonding on the insulated rails of single track circuits shall be provided by _____ with Standard No.8 SWG, G.I. wire (c)
    a. Engineering Department
    b. Electrical Department
    c. S and T Department
    d. Operating Department

19. Longitudinal bonding on the Un-insulated rails of single track circuits shall be provided by _____ (c)
    a. Engineering Department
    b. Electrical Department
    c. S and T Department
    d. Operating Department

20. The Cross Bonding, longitudinal bonding, transverse bonding, structural bonding and shunt bonding are done by _____. (b)
    a. Engineering Department
    b. Electrical Department
    c. S and T Department
    d. Operating Department

21. _____ has good immunity to 50Hz AC induced voltage or harmonics generated by thyristor controlled locos (a)

    a. AFTC track circuit

    b. AFTC and DC track circuit

    c. DC track circuit

    d. AC track circuit

Chapter 9 : Induction & It's Effects on Signalling

1. When a conductor carries current, there is a _____ around the conductor (d)
   a. EMF
   b. Static field
   c. magnetic field
   d. Static field, magnetic field and EMF

2. Any conductor linking with magnetic lines of force, has a _____ in it according to the well known "Faraday's Law of Electromagnetic Induction (a)
   a. voltage induced
   b. Static field
   c. magnetic field
   d. Static and magnetic field

3. The _____ emanates from the positive charge and ends at the negative charge unlike magnetic lines of force (b)
   a. electro-Magnetic static field
   b. electro-static field
   c. magnetic field
   d. Electro Static and magnetic field

4. The electro-static field emanates and any conductor that exists within the field will ____ (d)
   a. electro-Magnetic static field
   b. electro-static field
   c. magnetic field
   d. Get charged

5. The power conductor and the S&T conductor in the vicinity can be deemed to have small capacitance _____ (b)
   a. to Centenary
   b. to earth and between themselves
   c. to earth only
   d. between themselves only

6. The magnitude of the capacitances depends on the _____ in RE area (b)
   a. physical separation conditions only
   b. physical separation and atmospheric conditions
   c. atmospheric conditions only
   d. cant say

7. The voltage induced electrostatic ally in an _____ situated at a distance of 10 metres from the track was calculated to be about 3000V If the parallelism of this line is 1 KM (a)
   a. an overhead
   b. Return Rail
   c. UG Signalling Cable
   d. UG Telecom Cable

8. The voltage induced electrostatic ally in an overhead if someone touch this line, a current of about _____ will flow through the body of the person (b)

   a. 4 amps

   b. 4 milliamps

   c. 10 milliamps

   d. 10 amps

9. If the value of the current is _____ or above, it would prove to be fatal to a person. (c)

   a. 4 amps

   b. 4 milliamps

   c. 15 milliamps

   d. 15 amps

10. Electro-static voltage can be eliminated by providing _____ between the catenary and the signal and telecommunication lines (b)

    a. an earthed metallic armour

    b. an earthed metallic screen

    c. an earthed cable cores

    d. an earthed power supply of trough cable

11. The best method to eliminate the electrostatic induction there shall be _____ in the vicinity of A.C. Electrified track. (c)

    a. aerial lines with earthed aerial post

    b. aerial lines only

    c. no aerial lines

    d. MW and Aerial lines

12. When the entire outward and return current is restricted to two conductors located physically close to each other, the induced voltage on a third conductor due to each one of these will _____ (b)

    a. high

    b. very nearly zero

    c. low

    d. We cant say low are high

13. If there is no parallel path through the earth, the whole of the traction return current would flow in the rails throughout their length, the screening factor of the rails would have a _____ value (b)

    a. high

    b. low

    c. medium

    d. normal

14. The screening factor is _____ near the vehicle and near the sub-station than elsewhere (b)
    a. higher
    b. lower
    c. medium
    d. Normal

15. The return current through the rails helps in reducing the induced voltage to some extent. This property of the rail current is defined as _____ (a)
    a. rail reduction factor
    b. screening factor
    c. Power factor
    d. safety factor

16. _____ is 0.56 in. the case of single track and 0.4 in the case of double track. (d)
    a. screening factor
    b. mutual screening factor
    c. safety factor
    d. rail reduction factor

17. The induced voltage in the core reduces considerably by using screened cables. The extent by which the induced voltage is reduced is called as _____ (a)
    a. screening factor
    b. mutual screening factor
    c. safety factor
    d. rail reduction factor

18. _____ due to the presence of other cables and metallic objects is taken as 0.75 (b)
    a. screening factor
    b. mutual screening factor
    c. safety factor
    d. rail reduction factor

19. For calculating the induced voltages, the _____ current has been taken as 600 Amps. on Double line and 300 Amps on Single Line. (d)
    a. Cable load
    b. Rail return
    c. Loco
    d. catenary

20. The value of 35 _____ was finally used for S&T system design. A common design was adopted for single and double/multiple track electrified sections for screened cable (c)
    a. V/M DC
    b. V/KM DC
    c. V/KM AC
    d. V/M AC

21. The value of 87.5 _____ was finally used for S&T system design. A common design was adopted for single and double/multiple track electrified sections for un screened cable (c)
    a. V/M DC
    b. V/KM DC
    c. V/KM AC
    d. V/M AC

22. The maximum length of _____ that can run parallel to the track shall be 3.5 Km. for safe handling by staff (a)
    a. screened cable
    b. Un screened cable
    c. screened and unscreened cable
    d. Aerial lines

23. The maximum length of _____ that can run parallel to the track shall be 1.2 Km. for safe handling by staff (b)
    a. screened cable
    b. Un screened cable
    c. screened and unscreened cable
    d. Aerial lines

24. The lowest voltage at which glowing of the lamp occurs is called the _____ (c)
    a. Static Voltage
    b. saturated Voltage
    c. Glow Voltage
    d. AC Voltage

25. The _____ is found to be 2.3 volts for a signal lamp working on 12 volts. (b)
    a. Static Voltage
    b. Glow Voltage
    c. saturated Voltage
    d. AC Voltage

26. All equipment should, therefore, be capable of withstanding higher induced voltage. This safety margin is called _____ (c)
    a. screening factor
    b. mutual screening factor
    c. factor of safety
    d. rail reduction factor

27. The _____ for signalling equipment used for line side circuit is prescribed as 2.5 times (c)
    a. screening factor
    b. mutual screening factor
    c. factor of safety
    d. rail reduction factor

28. The maximum length of direct feeding of signals shall not exceed _____ when screened cables are used. (a)

    a. 600 meters

    b. 240 Km

    c. 600 km

    d. 240 meters

29. The maximum length of direct feeding of signals shall not exceed _____ when un screened cables are used. (d)

    a. 600 meters

    b. 240 Km

    c. 600 km

    d. 240 meters

Chapter 10 : Personnel safety in 25KV RE Area

1.The size of the Caution Board shall be 225 mm x 200 mm indicating in Hindi, English and regional language in white letters with a red back ground provided at a height of 3 metres above _____ (a)

a. Rail Level.

b. Ground level.

c. Ground and Rail level.

d. Ground or Rail level

2. The flow of return current in the rails will give rise to a _____ (c)

a. Rail Resistance.

b. Rail impedance.

c. Potential difference.

d. Ballast Resistance

3. Induction in Metallic Bodies situated close to _____ Equipment (a)

a. Overhead Electric.

b. Track Rail

c. Underground cables.

d. Aerial Lines

4. No work shall be done within a distance of two meters from the _____ of the O.H.E without a 'permit-to-work. (c)

a. mast

b. Earth pit.

c. Live parts

d. Anchor support

5. For work adjacent to overhead equipment the _____ shall apply to the proper authority sufficiently in advance for sanctioning the traffic and power block required (c)

a. SSE/JE Engg

b. Dy.SS.

c. SSE/JE Sigg

d. SSE/JE OHE

6. The Traction Power Controller through Traction Foreman will arrange to _____ the section concerned on the date and at the time specified in consultation with the Traffic Controller (d)

a. isolate

b. earth.

c. isolate or earth

d. isolate and earth

7. Use rubber gloves as far as possible or alternatively use _____. (d)

   a. Earth support

   b. isolate

   c. isolate and earth

   d. insulated rubber mats

8. Where a plastic sleeve cannot be provided as in the cases of tommy bars etc., the tools may be painted with insulating paint _____ (c)

   a. at regular intervals of 2 to 3 days.

   b. at regular intervals of 2 to 3 weeks

   c. at regular intervals of 2 to 3 months.

   d. at regular intervals of 2 to 3 Years.

Chapter 11 : Evaluation & Upgradation of Existing System Design – Various parameters

1. Realisable screening factor of 0.4 can be achieved for a cable with Intrinsic Screening factor - _____ with earthing resistance of (b)

   a. 2 Ohms

   b. 0.2 Ohms

   c. 10 Ohms

   d. 1 Ohms

2. Due to anticipated increase in Traffic upgraded traction current on single line normal case. (a)

   a. 800Amps

   b. 6000Amps

   c. 1000Amps

   d. 8000Amps

3. Due to anticipated increase in Traffic upgraded traction current on single line Short circuit case. (b)

   a. 800Amps

   b. 6000Amps

   c. 1000Amps

   d. 8000Amps

4. Due to anticipated increase in Traffic upgraded traction current on Double line normal case. (c)

   a. 800Amps

   b. 6000Amps

   c. 1000Amps

   d. 8000Amps

5. Due to anticipated increase in Traffic upgraded traction current on Double line Short circuit case. (d)

   a. 800Amps

   b. 6000Amps

   c. 1000Amps

   d. 8000Amps

Chapter 12 : Induced Voltages due to Higher Catenary Currents

1. Resistance of _____ determines the realisable screening factor (a)
   a. Earthing
   b. Soil
   c. Rals
   d. Cables

2. Low _____ resistance is not always feasible the Signal Standards Committee came to the conclusion that use of Screened cable may be discarded and to adopt Unscreened Cable for revised design. (a)
   a. Earthing
   b. Soil
   c. Rals
   d. Cables

3. In _____ The Induced Voltage with revised standard, has been calculated as 95 V/KM for Double Line 116V/KM for Single Line (b)
   a. screened with armouring earthed
   b. Unscreened with armouring earthed
   c. screened without armouring earthed
   d. un screened without armouring earthed

4. Track Cable Separation when both the rails are available for traction return current single line (b)
   a. 9m
   b. 8m
   c. 6m
   d. 4m

5. Track Cable Separation when both the rails are available for traction return current Double line (a)
   a. 9m
   b. 8m
   c. 6m
   d. 4m

6. Rail Reduction Factor when both the rails are available for traction return current Double line (a)
   a. 0.2666
   b. 0.3926
   c. 0.4
   d. 0.5

7. Rail Reduction Factor when both the rails are available for traction return current Single line (b)

a. 0.2666
b. 0.3926
c. 0.4
d. 0.5

8. Rail Impedance when both the rails are available for traction return current Double line (b)

a. 0.701
b. 0.561
c. 0.2
d. 0.3

9. Rail Impedance when both the rails are available for traction return current Single line (a)

a. 0.701
b. 0.561
c. 0.2
d. 0.3

Chapter 13 : Revised Design of Signalling System to Suit High Catenary Currents

1. _____ cables would be used and that the induced voltages have been calculated as 95V/KM for double line and 116V/KM for single line. as per the revised standards (a)
   a. unscreened
   b. unscreened and screened
   c. screened
   d. Normal

2. Unscreened cables would be used and that the induced voltages have been calculated as _____ for double line. as per the revised standards (a)
   a. 95 V/KM
   b. 35 V/KM
   c. 87.5 V/KM
   d. 116 V/KM

3. Unscreened cables would be used and that the induced voltages have been calculated as _____ for single line. as per the revised standards (d)
   a. 95V/KM
   b. 35V/KM
   c. 87.5V/KM
   d. 116V/KM

4. The maximum induced voltage which can safely be handled by maintenance staff as per the revised standards (d)
   a. 120 V
   b. 235 V
   c. 440 V
   d. 400 V

5. Block filters are provided to protect the equipment up to _____ A.C. (b)
   a. 120 V
   b. 600 V
   c. 440 V
   d. 400 V

6. If the induced voltage exceeds _____ the lightning arrestors to be provided on the line side of the block filter (c)
   a. 120 V
   b. 300 V
   c. 150 V
   d. 400 V

7. The Polarised Relays for block working currently in use, as per IRS-S.31-80 have an inherent A.C. immunity of _____ only (d)
   a. 120 V
   b. 300 V
   c. 50 V
   d. 10 V

8. As per the revised standards the max. length of parallelism of a power cable is _____ (c)
   a. 2.0 KM
   b. 2.4 KM
   c. 3.0 KM
   d. 2.6 KM

9. Block circuits are taken in Telecom Cables having an Intrinsic Screening factor of ____ (d)
   a. 2
   b. 1
   c. 3
   d. 0.1

10. Electrical Point Machine non-trailable type with this the maximum permissible distance between the machine and the contactor would be _____ (b)
   a. 2 KM
   b. 1.1 KM
   c. 1.3 KM
   d. 0.6 KM

11. Point Contactor type PPWR 1 of WSF make, which is planned for manufacture in India, has an immunity value of _____ (b)
   a. 2000 V
   b. 1000 V
   c. 500 V
   d. 750 V

12 QBAT relays can be used up to a maximum length of track circuit of _____ using one 'B' type choke at the relay end (c)
   a. 350 mtrs
   b. 450 mtrs
   c. 750 mtrs
   d. 1000 mtrs

13. With 120 ohm. Impedance choke (3 ohm D.C. resistances) in series with the track relay, the length can be increased in single line with revised standards (b)
   a. 350 mtrs
   b. 450 mtrs
   c. 750 mtrs
   d. 1000 mtrs

14. With 120 ohm. Impedance choke (3 ohm D.C. resistances) in series with the track relay, the length can be increased in Double line with revised standards (b)
    a. 350 mtrs
    b. 450 mtrs
    c. 750 mtrs
    d. 1000 mtrs

15. With 120 ohm. Impedance choke 3 ohm D.C. resistances in series with the track relay, the length can be increased in single line with out revised standards (d)
    a. 350 mtrs
    b. 450 mtrs
    c. 300 mtrs
    d. 200 mtrs

16. With 120 ohm. Impedance choke 3 ohm D.C. resistances in series with the track relay, the length can be increased in Double line without revised standards (c)
    a. 350 mtrs
    b. 450 mtrs
    c. 300 mtrs
    d. 1000 mtrs

17. As per RDSO specification No.S24/90 - for Electrical Point Machine non-trailable type, specifies the A.C. immunity level of Electrical Point Machine shall (b)
    a. less than 160V RMS at 50 Hz
    b. more than 160V RMS at 50 Hz
    c. less than 110V RMS at 50 Hz
    d. more than 110V RMS at 50 Hz

18. AC. Immunity level of SIEMENS IC type Point machine is (c)
    a. 200V
    b. 300V
    c. 400V
    d. 500V

19. AC. Immunity level of SIEMENS IB type Point machine is (b)
    a. 200V
    b. 300V
    c. 400V
    d. 500V

20. AC. Immunity level of SIEMENS IA type Point machine is (a)
    a. 160V
    b. 300V
    c. 400V
    d. 500V

21 A.C. immunity level of Electrical Point Machine with 160V RMS at 50 Hz, the maximum permissible distance between the machine and the contactor would be (b)

a. 1000 mtrs

b. 1100 mtrs

c. 1200 mtrs

d. 1300 mtrs

22. M/s. CEERI - PILANI have developed solid state conversion units which are extensively used for A.C. locos. (b)

a. 3 phase to Single Phase

b. Single Phase to 3 phase

c. 3 phase to 3 phase

d. Single Phase to Single phase

23. _____ are provided to protect the Block equipments up to 600 V A.C. (a)

a. Block filters

b. Isolation T/F

c. SPDs

d. LDs

24. RDSO designed _____ has been subjected to 1000 Amps. catenary current on single line section (a)

a. Axle Counter

b. AFTC

c. EI

d. UFSBI

25. The maximum length of parallelism of a _____ is 2. 4 KM in order to restrict the effect of Induced voltage on the signal lamps (a)

a. power cable

b. Signalling cable

c. Quad cable

d. Tail cables

26. If the feed voltage of _____ increased to 300 V, the maximum permissible length for direct feed is also up to 2 KM (b)

a. power cable

b. Signal

c. Points

d. Tracks

27. Maximum permissible length of parallelism with factor of safety of 1.5 single line and Double line for Shelf Type AC Immunised (a)

a. 2.1KM/2.8 KM

b. 1KM/1.2 KM

c. 0.75KM/0.9 KM

d. 1.5KM/2.0 KM

28. Maximum permissible length of parallelism with factor of safety of 1.5 single line and Double line for QNA1 (a)
    a. 2.1KM/2.8 KM
    b. 1KM/1.2 KM
    c. 0.75KM/0.9 KM
    d. 1.5KM/2.0 KM

29. Maximum permissible length of parallelism with factor of safety of 1.5 single line and Double line for K-50 (B-1) (b)
    a. 2.1KM/2.8 KM
    b. 1KM/1.2 KM
    c. 0.75KM/0.9 KM
    d. 1.5KM/2.0 KM

30. Maximum permissible length of parallelism with factor of safety of 1.5 single line and Double line for K-50 (c)
    a. 2.1KM/2.8 KM
    b. 1KM/1.2 KM
    c. 0.75KM/0.9 KM
    d. 1.5KM/2.0 KM

Objectives

Chapter-1 : Rules Applying to Railway Servants Generally

1) Each railway servant shall be conversant with the rules related to.
   a) Pass rule.
   b) Income tax rule.
   c) Company rules.
   d) His duties.

ANSWER—D

2) Each railway servant shall promptly observe and obey the rules, special instruction given by.
   a) Subordinate staff.
   b) Relatives.
   c) Superiors.
   d) Friends.

ANSWER—C.

3) Evry railway servant shall see that every exertion is made for ensuring the safety of the.
   a) Bus passengers.
   b) Train passenger.
   c) Railway employee.
   d) Colleagues.

ANSWER---B

4) Every railway servant shall be conversant with the rules relating to his duties and if necessary he must explain to them.
   a) Public.
   b) Friends.
   c) Relatives.
   d) Staff working under him.

ANSWER---D

5) Every railway men satisfy himself that the staff working under him are conversant with the rules related.
   a) Right to information
   b) Right to expression.
   c) Right to speak.
   d) To his duties.

ANSWER--D

6) Every railway servant shall render assistance in carrying out various rules and report promptly to the.
   a) Officer in charge, RPF.
   b) Dy SS, station.
   c) Immediate superior.
   d) Enquiry office.

ANSWER--C

7) Every railway person is responsible for the security and protection of.
   a) His own property,
   b) Fellow employee property.
   c) Railway property.
   d) Passenger's property.

ANSWER--C

8) Railway servant shall endeavor (attempt) to prevent fire in.
   a) Bus stand premises
   b) Cricket stadium premises.
   c) Railway premises.
   d) Market premises.

ANSWER---C

9) Railway servant shall promptly obey the lawful orders given by.
   a) Dy SS.
   b) OC/RPF.
   c) His parents.
   d) His superiors.

ANSWER--D

10) Railway servant directly connected with the working of train shall not take alcohol.
   a) Within 2 hrs before commencement of duty.
   b) Within 4 hrs before commencement of duty.
   c) Within 6 hrs before commencement of duty.
   d) Within 8 hrs before commencement of duty.

ANSWER--D

11) Every railway servant should attend for duty.
   a) Two hrs before.
   b) One hr before.
   c) 30 minutes before.
   d) Be in time.

ANSWER--D

12) If any railway servant on duty desires to absent himself from duty, he shall immediately report to.

a) His colleague.

b) His parents.

c) His superior.

d) His subordinate.

ANSWER---C

13) Any railway servant who observes any unusual circumstances likely to interfere with the safe running of the trains shall be informed.

a) After the completion of the duty.

b) After reaching home.

c) After taking permission from supervisor.

d) Immediately.

ANSWER--D

Chapter-2 : Duties of Signal Technicians, Supervisors & Officers

1) Duties of signal technician.
   a) Efficient maintenance of signal gears.
   b) Attend failure promptly and rectify the same
   c) Obey the orders of superiors.
   d) A, B and C.

ANSWER—D

2) Signal technician shall carryout new works or alterations under the instruction of the
   a) JE/SSE/P way.
   b) JE/SSE/c &w.
   c) JE/SSE/SIG
   d) JE/SSE/Elec.

ANSWER—C

3) In case of any emergency that may be beyond his competency and control shall bring to the notice of.
   a) Media.
   b) Train passenger.
   c) Railway employees.
   d) Immediate superior.

ANSWER—D

4) The competency certificate issued under GR15.06 does not authorize signal technician to attend.
   a) Track circuit failure.
   b) Point failure.
   c) Interlocking failure.
   d) Telephone failure.

ANSWER—C

5) Duties of signal technician in case of locking failure.
   a) Just wait till the JE/SSE arrives.
   b) Open the locking tray and attend the failure.
   c) Left the spot immediately.
   d) Try to attend the failure without opening the locking cover.

ANSWER—D

6) Competency certificate issued by zonal training school to signal technician for.
   a) One year.
   b) Two years.
   c) Three years.
   d) Four years.

ANSWER--D

7) Zonal training school issues the competency certificate to the.
   a) Technicians.
   b) Je's/se's.
   c) khalasi.
   d) khalasi helper.

ANSWER—A

8) Testing of signaling gears are to be done periodically by.
   a) Technician-III.
   b) Technician-II.
   c) Technician—I.
   d) A, B and C.

ANSWER—D

9) Signal technician must possess a copy of the following books.
   a) Signal engineering manual.
   b) Gate working manual.
   c) AC traction manual.
   d) IRPWM manual.

ANSWER--A

10) Each SSE/JE shall submit an inspection and testing certificate in prescribed format to DSTE
   a) Every month.
   b) Once in two months.
   c) Once in three months.
   d) Once in six months

ANSWER—A

11) In charge SSE/JE'S shall certify that all the signals in his section have been inspected both by day and night once in a.
   a) week.
   b) Fortnight.
   c) Quarterly.
   d) Year.

ANSWER-C

12) All SSE'S/JE'S shall carry out FOOTPLATE inspection of all the signals by day and night once in a.

a) Week.

b) Month.

c) Quarterly.

d) Year.

ANSWER--B

13) Foot plate inspection should be submitted to the.

a) DSTE.

b) SSTE.

c) CSTE.

d) CSE.

ANSWER--A

14) Day FOOT PLATE inspection should be done during broad day light preferably between.

a) 8hrs-----10hrs.

b) 10hrs----12hrsl.

c) 12hrs----14hrs.

d) 14hrs ----16hrs.

ANSWER—C

15) Night FOOT PLATE should be done between.

a) 20hts---22hrs.

b) 22hrs---00hrs.

c) 00hrs---2hrs.

d) 2hrs ----4hrs.

ANSWER--C

16) Joint foot plate shall be carry out quarterly by

a) PWI, LI, TI.

b) PWI, TI, SI.

c) SI, TI, LI.

d) SI, LI, SI.

ANSWER—C

17) The in charge SSE/JE should have the knowledge of establishment matters like.

a) Payment of wages act.

b) Pass rules.

c) Workmen's compensation act.

d) All A, B and C.

ANSWER-D

18) All receipts and issues of store material shall be entered in the register known as.

a) Daily material transaction registers.
b) Store material register.
c) Failure registers.
d) Store ledgers

ANSWER--A

19) Office records, stores, ledgers and accounts are maintained correctly by.

a) JE/section.
b) SSE/section.
c) SSE/ in charge.
d) SSE/headquarter.

ANSWER-C

20) As per Indian railway financial code para 219 codal life of signaling cable is

a) 20yrs.
b) 30yrs.
c) 40yrs.
d) 50yrs.

ANSWER--B

21) As per Indian railway financial code para 219 codal life of block instrument is.

a) 10yrs.
b) 15yrs.
c) 20yrs.
d) 25yrs.

ANSWER—D

22) As per Indian railway financial code para 219 codal life of motor vehicle road or rail Motor trolley is.

a) 5yrs.
b) 7yrs.
c) 10yrs
d) 11yrs.

ANSWER—C

23) Signal sighting committee consisting of.

a) SIGNAL inspector, P/WAY inspector, and LOCO inspector.
b) P/WAY inspector, LOCO inspector, and TRAFFIC inspector.
c) P/WAY inspector, SIG inspector, and TRAFFIC inspector.
d) SIG inspector, TRAFFIC inspector, and LOCO inspector.

ANSWER--D

24) After completion of new work JE/SE/SSE'S shall submit a completion certificate to.

a) DSTE.
b) ASTE.
c) SSTE.
d) Dy SS.

ANSWER—A

25) All SSE/SE/JE'S shall posses the important books like.

a) GR & SR.
b) SEM.
c) SOD.
d) A, B, and C.

ANSWER-D

Chapter-3 : Signal Failures & Duties of Staff

1) In case of sig failure technician shall proceed by.
   a) Passenger train only.
   b) Goods train only.
   c) Scooter or motorcycle only.
   d) First available means.

ANSWER—D

2) After getting the failure information technician will attend the failure
   a) Without taking the failure memo from SM.
   b) Without issuing the disconnection memo for the sig gear.
   c) Taking the relay room key without entering in the register.
   d) After receiving the failure memo and issuing disconnection memo only

ANSWER— D

3) If failure is beyond the competency of technician shall bring to the notice of.
   a) SSE.
   b) DSTE.
   c) Sr DSTE.
   d) DRM.

ANSWER—A

4) After rectification of the failure other details are to be entered in the following register.
   a) Failure registers.
   b) Relay room key register.
   c) Joint inspection register.
   d) Complaint registers.

ANSWER—A

5) Supervisors after receiving the summary of failures at the end of month shall send to.
   a) DSTE/Sr DSTE.
   b) DOM/Sr DOM.
   c) ADRM/DRM.
   d) AEN/SrDEN.

ANSWER—A

6) In case of mid section gate barrier is get damaged SM on duty shall issue the caution order to.
   a) Guard of a train.
   b) Sectional PWI.
   c) Sectional JE/SIG.
   d) Driver of an approaching train.

ANSWER--D

7) When a signal is defective duties of station master is.
   a) Immediately arrange the signal replaced to ‘ON’.
   b) Take the necessary action to receive or despatch the train.
   c) Report the same to the concerned staff.
   d) A, B, and C.

ANSWER—D

8) When a driver finds a gate stop signal is at ‘ON’.
   a) Driver stops his train at the foot of the signal.
   b) Driver will proceed with train after waiting for a prescribed time.
   c) Driver will proceed if he feels everything is ok.
   d) Driver will proceed when he will get the signal.

ANSWER-B.

9) Gate signal in MACLS territory is to be located at a distance of.
   a) 120 mtrs.
   b) 180 mtrs.
   c) 200 mtra.
   d) 400 mtrs.

ANSWER—B

10) Every gate signal is to be provided with the marker in absolute block system.
   a) ‘A’ marker.
   b) ‘G’ marker.
   c) ‘C’ marker.
   d) ‘P’ marker.

ANSWER— B

11) A driver shall pass IBS signal at ’ON’.
   a) If he feels everything is ok.
   b) He can pass the signal after talking to the guard.
   c) He can start his train after talking to the station master of rear station
   d) He can start his train after talking to the station master of ahead station.

ANSWER-C

12) While passing the IBS signal at ‘ON’ in night time.
   a) Driver shall not exceed the speed of the train by 8 kmph.
   b) Driver shall not exceed the speed of the train by 10 kmph.
   c) Driver shall not exceed the speed of the train by 15 kmph.
   d) Driver shall not exceed the speed of the train by 208 kmph.

ANSWER-A

13) When IB signal fails SM of the rear station treat the entire section up to the block station ahead of IB signal as.

a) Absolute block system.

b) Automatic block system.

c) One train only system.

d) Pilot and guard system.

ANSWER--A

14) All artisan staff particularly signal technicians should be given refresher training once in.

a) A year.

b) Two years.

c) Three years.

d) Four years.

ANSWER—D

15) In the interval between disconnection and reconnection, if necessary trains can be passed.

a) By taking of a signal.

b) If SM assumes everything is ok.

c) If supervisor assumes nothing is wrong

d) After physically checking and locking the route by SM.

ANSWER--D

16) Replacement of lamps, fuses etc.can be carried out.

a) With the consent of SM on duty.

b) Without the consent of SM on duty.

c) Without disconnecting the gear.

d) Only after disconnecting the gear.

ANSWER-B

17) Testing of points, signals and interlocking of lever frame can be carried out.

a) With the consent of SM on duty.

b) Without the consent of SM on duty.

c) After issuing the disconnection to SM on duty.

d) Without issuing the disconnection to the SM on duty.

ANSWER- A

18) The relay room or cabin basement where relays and interlocking gears are kept shall be locked.

a) Single lock.

b) Two independent lock.

c) Single lock works on double key.

d) Both B and C.

ANSWER-D

19) Disconnection of pins of rodding runs crank compensator, interlocking frames which will lead to unsafe condition.

a) Disconnection is required.

b) Disconnection is not required.

c) Consent of SM is sufficient.

d) Consent of SM is also not required.

ANSWER—A

20) Cleaning of colour light signal inner lens and focusing of signal etc.

a) Disconnection is required.

b) Disconnection is not required.

c) Consent of SM is sufficient.

d) Consent of SM is also not required 20yrs.

ANSWER--D

21) The relay room is provided with double key one key is with signal staff and other one is with

a) Operating staff.

b) Commercial staff.

c) Engineering staff.

d) Electrical staff.

ANSWER— A

22) Every SM must records, promptly, correctly, and neatly all failures in the.

a) Signal failure book.

b) Signal history book.

c) Complaint registers.

d) Petty register.

ANSWER—A

23) Testing and measurement of wheel dip of outdoor equipment of axle counter.

a) Disconnection is required.

b) Disconnection is not required.

c) Consent of SM is sufficient.

d) Consent of SM is also not required.

ANSWER—C

24) Alteration of station master's slide control, station master's key locking boxes.

a) Disconnection is required.

b) Disconnection is not required.

c) Consent of SM is sufficient.

d) Consent of SM is also not required.

ANSWER—A

25) Opening of covers of block instrument for maintenance or making adjustment.

a) Disconnection is required.

b) Disconnection is not required.

c) Consent of SM is sufficient.

d) Consent of SM is also not required.

Chapter-4 : Schedule of Dimensions-2004

1) Schedule of dimensions revised in the following year.
   a) 1998.
   b) 2000.
   c) 2002.
   d) 2004.

ANSWER—D

2) The minimum distance between two adjacent track is.
   a) 4.7 mtrs.
   b) 5 mtrs.
   c) 5.3 mtrs.
   d) 5.5 mtrs

ANSWER— C

3) Schedule of dimensions formulated in the year.
   a) 1905.
   b) 1913.
   c) 1915.
   d) 1917.

ANSWER—B

4) The distance between the two adjacent lines.
   a) 1376 mm.
   b) 1478 mm.
   c) 5300 mm.
   d) 1676 mm.

ANSWER—D

5) The minimum clearance of check rail at level crossing gate.
   a) 41 mm.
   b) 44 mm
   c) 51 mm.
   d) 54 mm.

ANSWER—C

6) The maximum clearance of check rail at level crossing gate.
   a) 41 mm.
   b) 44 mm.
   c) 51 mm.
   d) 57 mm.

ANSWER--D

7) The minimum clearance of check rail in a curve.
   a) 24 mm.
   b) 30 mm.
   c) 40 mm.
   d) 44 mm.

ANSWER—D

8) The minimum radius of any curve in the railway track.
   a) 170 mtrs.
   b) 175 mtrs.
   c) 180 mtrs.
   d) 185 mtrs.

ANSWER-B

9) The maximum super elevation permitted in the BG track is.
   a) 120 mtrs.
   b) 165 mtrs.
   c) 200 mtra.
   d) 250 mtrs.

ANSWER—B

10) The recommended gradient in the station yard for new works.
   a) 1 in 200.
   b) 1 in 400.
   c) 1 in 800.
   d) 1 in 1200.

ANSWER— D

11) The minimum clearance of rod transmission from nearest track centre.
   a) 1850 mm.
   b) 1905 mm.
   c) 1950 mm
   d) 1955 mm.

ANSWER-B

12) The schedule of dimensions based on requirement of 25 KV AC traction is prescribed in the version of.
   a) 1913.
   b) 1939.
   c) 1973.
   d) 1975.

ANSWER-C

13) While a vehicle pass over a track it oscillates side by side on track is known as.

a) Lurching motion.

b) Side by side motion.

c) Loose motion.

d) Fixed motion.

ANSWER--A

14) While a vehicle pass over at rack it oscillates up and dn on track is known as.

a) Lurching motion.

b) Bouncing motion.

c) Shuttling motion.

d) Spring motion.

ANSWER—B

15) Any new work which would infringe the schedule of dimensions cannot be carried out unless Prior sanction has been obtained from.

a) CSTE.

b) DRM.

c) CRS.

d) COM.

ANSWER--C

16) The minimum horizontal distance from centre of track to any structure except a platform in new works.

a) 2130 mm.

b) 2360 mm.

c) 2366 mm.

d) 2630 mm.

ANSWER-B

17) Inside the guage face of a rail no gear or track fitting must project above rail level for a distance of.

a) 140 mm.

b) 150 mm.

c) 160 mm.

d) 170 mm.

ANSWER- A

18) Outside the guage face of a rail no gear or track fitting must prohect above rail level for a distance of.

a) 200 mm.

b) 210 mm.

c) 219 mm.

d) 229 mm.

ANSWER-D

19) No station yard should be constructed on a steeper grade than.

a) 1 in 260.
b) 1 in 300.
c) 1 in 400.
d) 1 in 1200.

ANSWER—A

20) The minimum clearance between toe of the open switch and stock rail for new works.

a) 105 mm.
b) 110 mm.
c) 115 mm.
d) 120 mm.

ANSWER--C

21) The minimum length of the tongue rail is.

a) 3000 mm.
b) 3660 mm.
c) 3880 mm.
d) 4000 mm.

ANSWER—B

22) The minimum horizontal distance from centre of track to passenger platform coping.

a) 1600 mm.
b) 1650 mm.
c) 1670 mm.
d) 1700 mm.

ANSWER—C

23) The maximum horizontal clearance from centre of track to passenger platform coping.

a) 1630 mm.
b) 1680mm.
c) 1700 mm.
d) 1720 mm.

ANSWER--B

24) The maximum horizontal clearance from centre of track to passenger platform wall.

a) 1705 mm.
b) 1805 mm.
c) 1905 mm.
d) 1950 mm.

ANSWER—C

25) The distance between any live conductor and any earthed structure should not be less than when conductor is at rest.

a) 120 mm.

b) 190 mm.

c) 200 mm.

d) 320 mm.

ANSWER—D

26) The distance between any live conductor and any earthed structure should not be less than when conductor is not at rest

a) 150 mm.

b) 200 mm.

c) 270 mm.

d) 300 mm.

ANSWER— C

27) The minimum projection of flange of new tyre measured from tread at 63.5 mm is.

a) 27 mm.

b) 27.5 mm.

c) 28 mm

d) 28.5 mm.

ANSWER-D

28) The maximum and minimum thickness of tyre flange should be measured at.

a) 13 mm.

b) 19 mm.

c) 21 mm.

d) 22 mm.

ANSWER-A

29) The maximum the height of the high level platform from rail level is.

a) 550 mm.

b) 700 mm.

c) 840 mm

d) 900 mm.

ANSWER-C

30) The maximum height of the low level platform from rail level is.

a) 300 mm.

b) 375 mm.

c) 400 mm.

d) 455 mm.

ANSWER—D

31) The maximum inter distant between two adjacent refuges in tunnels.

a) 100 mtrs.

b) 150 mtrs.

c) 170 mtrs.

d) 200 mtrs.

ANSWER—A

32) The maximum inter distant between two adjacent refuges in bridges span of less than 100 mtrs.

a) 100 mtrs.

b) 150 mtrs.

c) 170 mtrs.

d) 200 mtrs.

ANSWER—A

33) The maximum inter distant between two adjacent refuges in bridges with span more than 100mtrs.

a) 100 mtrs.

b) 150 mtrs.

c) 170 mtrs.

d) A refuge over each pillar.

ANSWER—D

Chapter-5 : Drgs, Specs & Books of Ref

1) All plans shall be prepared in accordance with the instructions issued by the.
   a) DSTE.
   b) ADSTE.
   c) SSTE.
   d) CSTE.

ANSWER—D

2) Name which point should be shown in every signaling plan.
   a) North point.
   b) South point.
   c) East point.
   d) West point.

ANSWER— A

3) All tentative plans shall be signed by at least.
   a) Junior scale.
   b) Senior scale.
   c) SAG.
   d) HAG.

ANSWER—B

4) Tentative signal plan sent to division for comments should bear the legend.
   a) Tentative for checking only.
   b) Tentative for comment only.
   c) Tentative for execution only.
   d) tentative for approval only

ANSWER—B

5) All types of drawing may be available in.
   a) Drawing paper.
   b) Tracing paper.
   c) Ferro print.
   d) All ‘A’ ‘B ’and ‘c’.

ANSWER—D

6) The size of the ‘A’-4 size drawing sheet is.
   a) 210mm x 297mm.
   b) 297mm x 420mm.
   c) 420mm x 594mm
   d) 210mm x 420mm.

ANSWER--A

7) The size of the ‘A’-3 size drawing sheet is.
   a) 200mmx300mm.
   b) 210mmx420mm.
   c) 297mmx420mm.
   d) 210mmx297.

ANSWER—C

8) The size of the ‘A’-2 size drawing sheet is.
   a) 210mmx297mm.
   b) 297mmx420mm.
   c) 420mmx594mm
   d) 210mmx420mm

ANSWER-C

9) The size of the ‘U’ size drawing sheet is.
   a) 120mmx any length.
   b) 165mmxany length.
   c) 200mmx any length.
   d) 297mmxany length.

ANSWER—D

10) How much margin is to be left on left hand side in a drawing sheet for binding.
   a) 15mm.
   b) 20mm.
   c) 30mm.
   d) 40mm.

ANSWER— C

11) In a bunch of 40 drawing sheet 1st sheet is numbered as.
   a) Sh no-1 of 40
   b) Sh no -1(40)
   c) sh no-1/40.
   d) sh no-1+40.

ANSWER-C

12) All drawing sheets shall be signed with.
   a) Normal ink pen.
   b) Gel pen.
   c) Indelible ink pen.
   d) Marker pen.

ANSWER-C

13) Signaling plan and locking tables shall be approved by.
    a) ADSTE.
    b) DSTE.
    c) JAG &above.
    d) CRB.

ANSWER--C

14) Locking diagram for lever frame having more than 50 levers shall be checked in full by.
    a) ADSTE.
    b) DSTE.
    c) Sr TECHNICIAN.
    d) Sr sec engineer.

ANSWER—A

15) ALL circuit diagram shall be approved & signed by
    a) ASTE & above.
    b) DSTE& above.
    c) JAG& above.
    d) SAG& above

ANSWER--C

16) Completion diagram shall be submitted by ASTE/DSTE of construction to the.
    a) CSTE open line.
    b) CSTE construction.
    c) CSTE planning.
    d) CSE.

ANSWER-B

17) In any relay interlocking installation relay contacts used shall be shown in.
    a) Contact analysis chart..
    b) Relay rack particular sheet.
    c) Cable corage plan.
    d) Cable route plan.

ANSWER- A

18) In any installation underground cable laying in the yard shall be shown in separate sheet as.
    a) Cable corage plan.
    b) Cable joint particulars.
    c) Cable termination particulars.
    d) Cable route plan.

ANSWER-D

19) In any signaling installation arrangement of power supply shall be shown in.
    a) Relay rack particulars.
    b) SIP.
    c) Power distribution sheet.
    d) Engineering plan.

ANSWER—C

20) If it is necessary to send tracing from one office to other it shall be rolled & inserted in.
    a) Plastic pipe.
    b) Aluminum pipe.
    c) Cardboard cylinder.
    d) Rcc pipe.

ANSWER--C

21) Indian railway standard drawing has been issued by.
    a) CCRS.
    b) DG/RDSO.
    c) DG/POLICE.
    d) DG/S&T.

ANSWER—B

24) IRS stands for.
    a) Indian railway service.
    b) Indian railway signaling.
    c) Indian railway standard drawing.
    d) Internal route section.

ANSWER—C

25) Each drawing number is either prefixed with letters ‘SA’ or letter ‘S’ here SA stands for.
    a) South Africa.
    b) Signal assembly.
    c) Signal aspect.
    d) South Asia.

ANSWER--B

26) drawing issued by RDSO to railways to offering their comments, the drawings together with the Comments are put up for discussion before SSC, the SSC stands for.
    a) Signal sighting committee.
    b) Signal shooting committee.
    c) Signal standard committee.
    d) Super specialty committee.

ANSWER—C

27) Director General RDSO issues the notification in connection with details of the new IRS specifications & drawings in every.

a) Month.

b) Quarter.

c) Half year.

d) Yearly.

ANSWER—B

28) The signaling plans, locking tables and selection tables are approved by.

a) ADSTE.

b) DSTE.

c) SSTE.

d) CSTE.

ANSWER—D

29) The signaling plans, locking tables and selection tables are approved by.

a) ADSTE.

b) DSTE.

c) Dy CSTE.

d) CSTE.

ANSWER—C

30) The type of block instrument is approved by.

a) DRM.

b) CRS.

c) Dy CSTE.

d) CSTE.

ANSWER--B

Chapter-6 : Layouts of Yards & Pway

1) The following guage are in use over Indian railways.
   a) Broad guage.
   b) Meter guage.
   c) Narrow guage.
   d) All A,B and C .

ANSWER—D

2) The main function of sleeper is.
   a) To support the rails.
   b) Keep to rails in correct guage.
   c) Distribute the load from rails to ballast.
   d) All of the above.

ANSWER— D

3) The sleeper density with maximum permissible speed and with high traffic density is.
   a) 1310.
   b) 1400.
   c) 1560.
   d) 1660.

ANSWER—D

4) In a PSC sleeper, PSC stands for.
   a) Power sector cement.
   b) Piyush sighania cement.
   c) Prestressed concrete.
   d) Poststressed concrete.

ANSWER—C

5) In BG section maximum speed up to 160kmph is permissible in.
   a) ‘A’ route.
   b) ‘B’ route.
   c) ‘C’ route.
   d) ‘D’ route.

ANSWER—A

6) The classification of routes is not applicable to.
   a) Broad guage
   b) Meter guage.
   c) Narrow guage.
   d) Suburbans.

ANSWER--C

7) The rail used in the route where traffic density is more than 20 GMT is.
   a) 90R rail.
   b) 52KG rail.
   c) 60KG rail.
   d) 75KG rail.

ANSWER—C

8) The most commonly used rail in Indian railways is.
   a) Bull headed rail.
   b) Flat footed rail.
   c) Single head rail.
   d) Double headed rail.

ANSWER-B

9) The movement of rails due to moving loads or increased braking load is known as.
   a) Crawling.
   b) Creep.
   c) Expansion.
   d) Contraction.

ANSWER—B

10) Creep indicator to measure the amount of creep is to be provided at an interval of.
   a) 1 KM.
   b) 1.5 KM.
   c) 2 KM.
   d) 2.5 KM.

ANSWER— A

11) The creep indicator at every 1KM is to be kept above the rail level by.
   a) 15 mm.
   b) 18 mm.
   c) 20 mm.
   d) 25 mm.

ANSWER-D

12) The maximum super elevation permitted in BG is.
   a) 50 mm.
   b) 135 mm.
   c) 165 mm.
   d) 185 mm.

ANSWER-C

13) The maximum super elevation permitted in MG is.
   a) 50 mm.
   b) 60 mm.
   c) 70 mm.
   d) 90 mm.

ANSWER--D

14) The maximum super elevation permitted in NG is.
   a) 50 mm.
   b) 65 mm.
   c) 70 mm.
   d) 95 mm.

ANSWER—B

15) The trains can run with higher speed in the crossing provided with.
   a) 1 in8.5.
   b) 1 in 12 straight switches.
   c) 1 in 12 curve switch.
   d) 1 in 16.

ANSWER--D

16) Engineering plan is an important plan issued by.
   a) Chief engineer of zonal railway.
   b) Sr divisional engineering.
   c) SSE/P way sectional.
   d) SSE/P way head quarters.

ANSWER-A

17) Engineering plan should contain the following information.
   a) Class of the station.
   b) Standard of interlocking.
   c) Aspect control chart.
   d) Clear available length of all lines.

ANSWER- D

18) Signaling plan is prepared on the basis on.
   a) Route control chart.
   b) Cable corage plan.
   c) Engineering plan.
   d) Station building plan.

ANSWER-C

19) Signal plan contains the following information.

a) Reference no. of engineering plan.
b) Details of platforms.
c) Details of rly boundary.
d) Description of work.

ANSWER—A

20) Every station in RE area should have the SWR duly signed jointly by

a) DSTE, DOM, DEE.
b) DSTE, DOM, DEN.
c) DOM, DEN, DSO.
d) DEE, DSO, DEN.

ANSWER--A

21) Station working rule (SWR) must be revised once in.

a) Two year.
b) Three year.
c) Four year.
d) Five year.

ANSWER—B

22) SWR should contain the following information.

a) Station working rule diagram.
b) Reception & dispatch of trains.
c) System of working & means of communication.
d) All A, B, and C.

ANSWER—D

23) SWR must read in conjunction with.

a) GR & SR.
b) AC traction manual
c) Telecom manual.
d) Accident manual.

ANSWER--A

24) In SWR working of signals, points interlocking siding points etc is covered in.

a) Appendix ‘A’.
b) Appendix ‘B’
c) Appendix ‘C’.
d) Appendix ’D’

ANSWER—B

25) Who will ensure that class IV staff of the station read and understood the SWR?

a) Station superintendent.
b) Signal inspector.
c) Loco inspector.
d) Safety officer.

ANSWER—A

26) What guage tolrence allowed in straight line including curves of 350mtr or more?

a) -5 to +3 mm.
b) -5 to 10 mm.
c) -3 to +5 mm.
d) up to +10 mm.

ANSWER—A

27) What guage tolerance allowed on curves less than 350mtrs?

a) -5 to +3 mm.
b) -5 to +3 mm.
c) -5 to +3 mm.
d) up to +10 mm.

ANSWER—D

28) In BG section maximum speed up to 130kmph is permissible in.

a) 'A' route.
b) 'B' route.
c) 'C' route.
d) 'D' route.

ANSWER—B

29) In BG section maximum speed up to 100kmph is permissible in.

a) 'A' route.
b) 'B' route.
c) 'C' route.
d) 'D' route.

ANSWER—D

30) Any station situated in a gradient steeper than 1 in 80 falling towards the station shall be provided with.

a) Slip siding.
b) Catch siding.
c) Saloon siding.
d) Hot axle siding.

ANSWER—B

31) Any station situated in a gradient steeper than 1 in 100 falling away from the station shall be provided with.

a) Slip siding.
b) Catch siding.
c) Saloon siding.
d) Hot axle siding.

ANSWER—A

32) Any station system of signaling and interlocking and communication shownin _____ of SWR

a) Appendix ‘A’.
b) Appendix ‘B’.
c) Appendix ‘C’.
d) Appendix ‘D’.

ANSWER--B

Chapter-7 : Opening of Works

1) CCRS stands for.
   a) Chief commissioner of railway safety.
   b) Chief Commissioner for railway security.
   c) Chief Commissioner of railway system.
   d) Chief of commercial railway supervisor.

ANSWER—A

2) The commissioner of railway safety works under the administrative control of.
   a) Railway ministry.
   b) Civil aviation ministry.
   c) Surface &transport ministry.
   d) Home ministry.

ANSWER— B

3) The most important duties of CRS are.
   a) Inspection of new lines before opening for the public.
   b) Inspection of guage conversion work.
   c) Inspection of doubling of lines.
   d) All A, B, and C

ANSWER—D

4) The head quarter of chief commissioner of railway safety.
   a) AGRA
   b) KANPUR.
   c) LUCKNOW.
   d) PATNA.

ANSWER—C

5) Under the administrative control of CCRS all zonal railways &metro works are taken care by.
   a) 7no. of CRS.
   b) 9no.of CRS.
   c) 10no. of CRS.
   d) 11 no. of CRS.

ANSWER—B

6) Who is the principal technical advisor to central government of India?
   a) CRB.
   b) Member railway board.
   c) General Managers.
   d) CCRS.

ANSWER--D

7) How many Dy CRS's are posted in head quarter to assist the CCRS?
   a) 5 no. of Dy CRS.
   b) 6 no. of Dy CRS.
   c) 7 no. of Dy CRS.
   d) 8 no. of Dy CRS.

ANSWER—A

8) The Northern circle CRS head quarter is at.
   a) New Delhi.
   b) Lucknow.
   c) Kanpur.
   d) Gorakhpur.

ANSWER-A

9) The Southern circle CRS head quarter is at.
   a) Secunderabad.
   b) Chennai.
   c) Bangalore.
   d) Pondicherry.

ANSWER—C

10) The Eastern circle CRS head quarter is at.
   a) Gauhati.
   b) Maldah.
   c) Siliguri
   d) Kolkata.

ANSWER— D

11) The Western circle CRS head quarter is at.
   a) Mumbai.
   b) Goa.
   c) Ahmadabad.
   d) Jaipur.

ANSWER-A

12) The northeastern circle CRS head quarter is at.
   a) Lucknow.
   b) Allahabad.
   c) Gorakhpur.
   d) Kanpur.

ANSWER-A

13) The northeast frontier circle CRS head quarter is at.

a) Bhubaneswar.
b) Visakhapatnam.
c) Kolkata.
d) Patna.

ANSWER-C

14) The southeastern circle CRS head quarter is at.

a) Jamshedpur.
b) Kharagpur.
c) Kolkata.
d) Khurda road.

ANSWER—C

15) The south central circle CRS head quarter is at

a) Hyderabad.
b) Secunderabad.
c) Hubli.
d) Chennai.

ANSWER--B

16) The central circle CRS head quarter is at

a) Goa.
b) Surat.
c) Baroda.
d) Mumbai.

ANSWER-D

17) Preliminary works proposal consisting of works costing below rupees.

a) 1 Crore.
b) 2 Crore.
c) 4 Crore.
d) 5 Crore.

ANSWER- D

18) The works coming under pink book costing above.

a) 1.5 Crore.
b) 2.5 Crore.
c) 3.5 Crore.
d) 4.5 Crore.

ANSWER-B

19) All new works and works in progress costing between Rs 50 Lakh to 2.5 Crore are listed in the.

a) Pink book.

b) Blue book.

c) Green book.

d) Orange book.

ANSWER—A

20) The signaling works which require CRS sanction.

a) Provision of telephone at already manned LC gate

b) All types of track circuits within the yard.

c) Provision of lifting barriers in place of already interlocked leaf gate

d) New station temporary or permanent

ANSWER--D

21) The signaling work which do not require CRS sanction.

a) Addition, alteration or extension to existing block.

b) Change in block signaling and interlocking scheme.

c) New station temporary or permanent.

d) Provision of lifting barriers in place of already interlocked leaf gate.

ANSWER--D

22) Application to the commissioner of railway safety, for sanction for carrying out works in the division should be made by.

a) JAG officer.

b) SAG officer.

c) HAG officer

d) Sr HAG officer.

ANSWER—A

23) The safety certificate for engineering works should be signed by.

a) P/way sectional.

b) P/way in charge

c) Asst engineer.

d) Divisional engineer.

ANSWER--C

24) All new and modified signals must be inspected and passed by a.

a) Signal standard committee.

b) Signal sighting committee.

c) Signal supervising committee.

d) Signal sighting commission.

ANSWER—B

25) The validity of CRS sanction is

a) 1 year.

b) 2 year.

c) 3 year.

d) 4 year.

ANSWER—A

26) The currency of the traffic notice is.

a) 50 days.

b) 70 days.

c) 90 days.

d) 100 days.

ANSWER— C

27) The concerned department will have to apply for green notice before commencement of work

a) At least 1 day before

b) At least 3 days before.

c) At least 5 days before

d) At least 7 days before.

ANSWER-D

28) Who will issue the green notice or traffic notice.

a) Sr DOM.

b) Sr DSO.

c) Sr DSTE.

d) Sr DEN.

ANSWER-A

29) The green notice or traffic notice contain the following items.

a) Nature and probable duration of work.

b) Speed restriction and caution order to be followed.

c) System of working of signals, interlocking and block during the period.

d) All A, B and C.

ANSWER-D

30) Joint inspection by divisional open line and construction organization both at supervisor & officer level shall be undertaken.

a) Before work is started.

b) Before taking the noninterlocking.

c) After one month of commissioning.

d) After the station is commissioned.

ANSWER—B

31) The cost of estimate under LSWP(lump sum works proposal) is.

a) Less than 50,000.
b) More than 50,000.
c) Less than 1 crore.
d) More than 1 crore.

ANSWER—C

32) The cost of estimate under LAW (list of approved works) is.

a) 1 Cr to 1.5 Cr.
b) 1.5 Cr to 2 Cr
c) 1 Cr to 2 Cr.
d) 1 Cr to 2.5 Cr.

ANSWER—D

33) A draft of proposal of works for pink book by zonal railway to railway board is known as.

a) PWP (preliminary works program).
b) LSWP (lump sum works proposal).
c) FWP (final works program).
d) LAW (list of approved works).

ANSWER—

34) The cost of estimate under PINK BOOK is.

a) 1 Cr to 1.5 Cr.
b) 1.5 Cr to 2 Cr
c) 1 Cr to 2 Cr.
d) 2.5 Cr.

ANSWER--D

Chapter-8 : Estimates

1) For preparing estimate for line capacity which department will take the initiative?
   a) Operating department.
   b) Engineering department.
   c) Signal and telecom department.
   d) Commercial department.

ANSWER—A

2) The schedule of rates (SOR) may be revised in.
   a) Every three years.
   b) Every five years.
   c) Every seven years.
   d) Every eight years.

ANSWER— B

3) The price list of stores issued by stores department shall be maintained by.
   a) In charge SSE's office.
   b) ASTE's office.
   c) Divisional office.
   d) Zonal office.

ANSWER—C

4) The new minor works costing.
   a) Rs 2000 and less.
   b) Rs 5000 and less.
   c) Rs 6000 and less.
   d) Rs 7000 and less.

ANSWER—D

5) Reconditioning work costing Rs 50000 and less, ---------- estimate is not required.
   a) Abstract estimate.
   b) Detail estimate.
   c) Revise estimate.
   d) Completion estimate.

ANSWER—B

6) The sanction of the competent authority to the detail estimate of a work is known as.
   a) Work sanction.
   b) Technical sanction.
   c) Departmental sanction.
   d) Official sanction.

ANSWER--B

7) The abstract estimate of construction project should be submitted for the approval of the railway board on form.

a) E.550.

b) E.551.

c) E.554.

d) E.555.

ANSWER—C

8) The following items are shown in construction estimate.

a) Amount of sanctioned estimate.

b) Commitments on the date.

c) Anticipated further outlay.

d) All ‘A’ ‘B’ and ‘C’.

ANSWER--D

9) Who is eligible to give sanction on expenditure on new works out of turn in respect to user’s amenities not exceeding 1 lakh in each case?

a) CSTE.

b) DYCSTE.

c) GENERAL MANAGER.

d) RAILWAY BOARD.

ANSWER—C

10) The currency of any sanction to estimate will ordinarily remain for ----------years.

a) three.

b) Five.

c) Seven.

d) Eight.

ANSWER— B

11) No work may be commenced and no liability in expenditure incurred on a work until---------- for it has been sanctioned.

a) Abstract estimate.

b) Detail estimate.

c) Revised estimate.

d) Sanctioned estimate.

ANSWER—B

Chapter-9 : SOM of Maintenance of Signalling Apparatus, Painting Programme

1) Signal technician will report to the supervisor if he observes.
   a) Excess wear and tear of the equipment.
   b) Any defect observed in the design of any equipment.
   c) If the foundations are shaking.
   d) All ‘A’ ‘B’ AND ‘C’.

ANSWER—D

2) Clean the greasing nipples and grease all points with.
   a) grease gun .
   b) Plastic gun.
   c) Glue gun.
   d) Water gun.

ANSWER— A

3) Signal arm, indicators etc which are to be painted conventional colors shall be painted.
   a) Once in six months.
   b) Once in a year.
   c) Once in two years.
   d) Once in three years.

ANSWER—D

4) Signal posts and cabin levers which are to be distinguished by colors shall be painted.
   a) Once in two years.
   b) Once in three years.
   c) Once in four years.
   d) Once in six years

ANSWER—B

5) Roding roller guide assembly etc. Which only need a protective covering shall be.
   a) Once in two years.
   b) Once in three years.
   c) Once in four years.
   d) Once in six years.

ANSWER—B

6) Each JE/SE/SSE shall maintain painting program and shall record in the register?
   a) Signal failure register.
   b) Complaint registers.
   c) Inspection registers.
   d) Signal incidence book.

ANSWER--D

7) Every JE/SE/SSE shall submit requisition for the painting material sufficiently in advance to?
   a) Sr DCS.
   b) Sr DSO.
   c) Sr DMO.
   d) Sr DSTE.

ANSWER—D

8) The paints shall be stored in.
   a) Cool place.
   b) Dry place.
   c) Away from flame.
   d) All ‘A’ ‘B’ and ‘C’.

ANSWER-A

9) The lever number of points and facing lock bars should be painted on the web close to the toe of the switch rail in.
   a) 3o mm letters.
   b) 40 mm letters.
   c) 50 mm letters.
   d) 60 mm letters.

ANSWER—C

10) The no of lever shall also be painted on the front and back side of the girder supporting the frame opposite each lever in.
   a) 20 mm.
   b) 25 mm.
   c) 30 mm.
   d) 40 mm.

ANSWER— C

11) The single line token & tablet instruments body is to be painted with.
   a) Black enamel.
   b) Grey enamel.
   c) Green enamel.
   d) Blue enamel.

ANSWER-B

12) The single line token less block instruments body is to be painted with.
   a) Grey enamel
   b) Green enamel.
   c) Black enamel.
   d) Blue enamel.

ANSWER-A

13) The double line block instrument metal casing is to be painted with.

a) Grey enamel.
b) Green enamel
c) Black enamel.
d) Blue enamel.

ANSWER-B

14) The testing of locking as per locking table is to be done.

a) Once in a year.
b) Once in two year.
c) Once in three year.
d) Once in four years.

ANSWER-A

15) The JE/SE sectional shall check the rodding run, alignment, spacing of rollers free from vegetation growth.

a) Once in a month.
b) Once in two months.
c) Once in six months.
d) Once in a year.

ANSWER-A

16) The JE/SE sectional shall check the rodding run, under the track is clear of rails and obstruction.

a) Fortnight.
b) Half yearly.
c) Yearly.
d) Quarterly.

ANSWER-D

17) The JE/SE sectional shall check the cleaning and lubrication of moving parts of point and check point chairs.

a) Everyday.
b) Weekly.
c) Fortnight.
d) Monthly.

ANSWER- D

18) The JE/SE sectional shall check the switches are housed properly against stock rail and check spring on the switches equal in the normal and reverse position once in a.

a) Weekly.
b) Fortnight.
c) Monthly.
d) Daily.

ANSWER-C

19) The JE/SE sectional shall check the cleanliness of lenses inside and outside once in a.

a) Day.
b) Week.
c) Quarter.
d) Half yearly.

ANSWER—C

20) The JE/SE sectional shall check the signal lamps are working at 90% of rated voltage.

a) Weekly.
b) Fortnight.
c) Monthly.
d) Quarterly.

ANSWER--B

21) Signal technician shall check the polarity of the coil of reverser to be changed once in a.

a) Weekly.
b) Monthly
c) Quarterly.
d) Yearly.

ANSWER--B

22) The JE/SE sectional shall check the insulation test of the point machine is to be measured.

a) Quarterly.
b) Monthly.
c) Half yearly.
d) Yearly.

ANSWER—C

23) The double distant territory distant signal post shall be painted with alternative black and Yellow strips.

a) 200 mm.
b) 300 mm.
c) 400 mm.
d) 500 mm.

ANSWER--B

24) The junction boxes battery boxes and apparatus cases shall be painted with.

a) White paint.
b) Red oxide.
c) Aluminum paint.
d) Silver paint.

ANSWER—B

25) The level crossing gate control lever is to be painted with the color.

a) Red.

b) Brown.

c) Chocolate.

d) Green.

ANSWER—C

26) The king lever is to be painted with the colour.

a) Red & white bands 150 mm wide.

b) Red & yellow bands 150 mm wide.

c) Blue & white bands 150 mm wide.

d) White & blue bands 150 mm wide.

ANSWER— A

27) The size of the SLB and BSLB board shall be

a) 300 mm x 600 mm

b) 400 mm x 600 mm.

c) 600 mm x 800 mm

d) 600 mm x 900 mm.

ANSWER-D

28) The following are the main items of signaling equipment that need regular paintings.

a) Signal arms, point indicator, boards and markers.

b) Signal posts and signal fittings.

c) Interlocking frames, their levers & fittings.

d) All ‘A’,’B’, and ‘C’.

ANSWER—D

29) The SSE shall check the point machines are kept free from rust and dirt and fixtures, check for tightness

a) Quarterly.

b) Monthly.

c) Half yearly.

d) Yearly.

ANSWER--A

30) The JE/SE sectional shall check and ensure that key cannot be extracted regularly.

a) Quarterly.

b) Monthly.

c) Half yearly.

d) Yearly.

ANSWER-B

31) The JE/SE sectional shall check the circuit controller are rigidly fixed to the signal.

a) Quarterly.
b) Monthly.
c) Half yearly.
d) Yearly.

ANSWER-B

Chapter-10 : Periodical Testing & Overhauling of Signalling Apparatus

1) The interlocking frames shall be tested by JE/SE once in a
   a) Six months.
   b) Year.
   c) Two years.
   d) Three years.

ANSWER—B

2) The interlocking lever frame shall be overhauled at the intervals not exceeding.
   a) Two years.
   b) Three years.
   c) Four years.
   d) Five years.

ANSWER— B

3) In the mechanical points rod run stroke loss is due to.
   a) Slackness in the guide roller assembly.
   b) Slackness in the foundation of tressles.
   c) Oblong holes of studs etc.
   d) All A, B, and C

ANSWER—D

4) The lock bar is used in mechanical point.
   a) To lock the point.
   b) To avoid under wheel operation.
   c) To support the stock rail.
   d) Both ‘A’ and ‘B’.

ANSWER—D

5) To check the wheel marks on lock bar lock bar should be below the rail by.
   a) 28 mm.
   b) 35 mm.
   c) 38 mm.
   d) 42 mm.

ANSWER—C

6) The total no of lock bars clips in each lock bar is?
   a) 10.
   b) 12.
   c) 15.
   d) 18.

ANSWER--B

7) When lock bar is in unlocked plunger of facing point lock should be clear from split stretcher blades by.
   a) 12 mm.
   b) 13 mm.
   c) 14 mm.
   d) 15 mm.

ANSWER—A

8) When the lamps fixed on post are to be overhauled.
   a) Once in three month.
   b) Once in six months.
   c) Once in a year.
   d) Once in two year.

ANSWER--C

9) Mechanical rod run or in wire transmission the type of oil used for lubrication purpose.
   a) Kerosene oil.
   b) Mustard oil.
   c) Black mineral oil.
   d) SAE30 oil.

ANSWER—C

10) The double wire interlocking frames dynamometer test should be carried out.
   a) Once in three month.
   b) Once in six month.
   c) Once in nine months.
   d) Once in a year.

ANSWER— B

11) In double wire interlocking frames force required to operate a lever should not exceed.
   a) 25kg.
   b) 30kg.
   c) 35kg
   d) 40kg.

ANSWER-C

12) What should be the method for testing of interlocking?
   a) Testing against the interlocking.
   b) Testing against the interlocking and yard diagram.
   c) Visual inspection of interlocking.
   d) All ‘A’ ‘B’ and ‘C’.

ANSWER-D

13) The testing of the interlocking is to be maintained in the register.

a) Signal failure and inspection book at the station.

b) Register maintained by JE/SE/SSE (S).

c) Cards in divisional and headquarters office.

d) All ‘A’ ‘B’ and ‘C’.

ANSWER-D

14) Program of overhauling should be drawn out at the divisional level on monthly basis by.

a) ASTE/HQ.

b) DSTE.

c) DTI/HQ.

d) DOM.

ANSWER—B

15) When a lever frame or interlocked key box or any other interlocking frame is overhauled, the station must be worked in accordance with the special instructions issued by.

a) DSTE.

b) Each railway.

c) Station superintendent.

d) DSO.

ANSWER--B

16) During non interlocking work of any station movement of the trains is the responsibility of.

a) Signal department.

b) Engineering department.

c) Commercial department.

d) Operating department.

ANSWER-D

17) Periodical overhauling of single line token block instrument.

a) 2 years.

b) 5 years.

c) 10 years.

d) 15 years.

ANSWER- C

18) Periodical overhauling of double line block instrument.

a) 2 years.

b) 5 years.

c) 7 years.

d) 10years.

ANSWER-C

19) Periodical overhauling of handle type single line token less block instrument.

a) 5 years.

b) 7 years.

c) 8 years.

d) 10years

ANSWER—B

20) The testing of all electrical signaling circuit of relay interlocking up to 20 routes shall be done by.

a) Sr technician

b) JE/SE/SSE.

c) ASTE.

d) DSTE.

ANSWER--B

21) The aspects shall be checked during the physical inspection.

a) The signals, location boxes and other outdoor equipment are as per approved plans.

b) No equipment including relays is due for overhauling.

c) The lightning arrestors are properly connected and earthed as per plan.

d) 'A' 'B' and 'C'.

ANSWER--D

22) Approach locking, indication locking, track locking and back locking should be tested.

a) Once in six month.

b) Once in a year.

c) Once in a quarter.

d) Once in half year.

ANSWER—A

23) In any interlocking lever frame having levers more than 30 levers testing of lever frame is the personal responsibility of.

a) SSE/SE/JE sectional.

b) SSE in charge only.

c) SSE head quarter.

d) ASTE/DSTE/Sr DSTE.

ANSWER--D

24) On the actual date of 'non interlocking' for OH, if permitted action to be taken.

a) Issue disconnection memo with actual time.

b) No run through is permitted during NI.

c) Nominate and provided one 'Free Home Signal'.

d) All 'A' 'B' and 'C'.

ANSWER—D

25) Traffic notice issued by DOM/DSO should contain the following information's.

a) When the overhauling work would be taken up?

b) Loco foreman to advice drivers to observe the temporary speed restriction?

c) What should be the speed during NI period?

d) All 'A' 'B' and 'C.

ANSWER—D

26) The program of overhauling should be drawn out on at the divisional level on monthly basis, preferably spread over a period of ---------- months.

a) Three.

b) Six.

c) Seven.

d) Nine.

ANSWER—

27) Procedure for overhauling of a lever frame first apply a traffic notice at least ------ days before.

a) 3 days.

b) 5days.

c) 7days.

d) 9days.

ANSWER--C

28) During non interlocking work all trains shall pass.

a) Only run through.

b) Stop and start.

c) At normal speed.

d) Maximum permissible speed.

ANSWER--B

Chapter-11 : Push Trolleys & Motor Trolleys

1) No trolley shall be placed on the line except by a.
   a) Honest and laborious person appointed in this behalf.
   b) Qualified person appointed in this behalf.
   c) Highly qualified person appointed in this behalf.
   d) Any one can be appointed on this behalf

ANSWER—B

2) The qualified person shall hold a ---------- issued by an authorized officer-.
   a) Certificate of excellence.
   b) Certificate of merit.
   c) Certificate of competency.
   d) Certificate of benefited.

ANSWER— C

3) Any trolley which is propelled, by means of a motor shall be deemed to be a.
   a) Push trolley.
   b) Cycle trolley.
   c) Material trolley.
   d) Motor trolley.

ANSWER—D

4) The staff in whose favor a certificate is issued should have.
   a) The Knowledge of Hindi.
   b) The Knowledge of other local language.
   c) Passed the prescribed medical test.
   d) All of the above.

ANSWER—D

5) Motor trolley shall be manned by.
   a) 4 able-bodied trolley man.
   b) 5 able-bodied trolley man.
   c) 6 able-bodied trolley man
   d) 7 able-bodied trolley man.

ANSWER—A

6) The motor trolley shall not exceed the speed by----------during the night.
   a) 10kmph.
   b) 12kmph.
   c) 15kmph.
   d) 30kmph.

ANSWER--D

7) The push trolley shall not exceed the speed by.
   a) 10kmph.
   b) 12kmph.
   c) 15kmph.
   d) 30kmph.

ANSWER—C

8) The attachment of push trolley or motor trolley to a train.
   a) Can be permitted.
   b) Cannot be permitted.
   c) Prohibited.
   d) Depends upon the authority.

ANSWER--C

9) The validity of the competency certificate trolley, motor trolley, lorry is.
   a) One year.
   b) Two year.
   c) Three year.
   d) Four year.

ANSWER—A

10) Whenever a trolley shall be placed on the platform or besides any running lines hall be.
   a) Parallel to track.
   b) Perpendicular to track.
   c) For away from the track.
   d) Nearer to the track.

ANSWER— A

11) The maximum number of persons including trolley men in trolley/motor trolley must not exceed
   a) 05.
   b) 10.
   c) 20.
   d) 30.

ANSWER-B

12) The minimum requirement of equipments for trolley and motor trolley.
   a) Two red and two green hand signal flag.
   b) 12 no. of detonators.
   c) A chain and padlock.
   d) All ‘A’ ‘B’ and ‘C’.

ANSWER-D

13) The conveyance of trolley/motor trolley should be loaded in a train with the consent of.

a) Driver of the train.

b) Sectional controller.

c) The official in-charge of trolley.

d) Guard of the train.

ANSWER-D

14) In case of emergency trolley shall be used for the conveyance of persons other than railways like.

a) Magistrate.

b) Military.

c) Medical &forest department.

d) All ‘A’ ‘B’ and ‘C’.

ANSWER—D

15) The speed of the motor trolley shall not be more than 8 kmph while moving over.

a) Loop line.

b) Main line.

c) In curvature.

d) Points &crossing.

ANSWER--D

16) When the lorry is stopped in mid section for unloading protection to be taken by.

a) Signal department.

b) Engineering department.

c) Commercial department.

d) Operating department.

ANSWER-B

17) When a trolley in the mid section is stopped for unloading protection to be taken.

a) Banner flag at 300mtrs and at 600 mtrs three detonators.

b) Banner flag at 400mtrs and at 800 mtrs three detonators

c) Banner flag at 600mtrs and at 1200 mtrs three detonators.

d) Banner flag at 300mtrs and at 1200 mtrs three detonators.

ANSWER--C

18) When a motor trolley is loaded in the passenger train it should be ensured that.

a) The flow of petrol in the carborator has been cutoff.

b) Any pressure has been released from the tanks.

c) The tank is closed with well fitting cap.

d) All ‘A’ ‘B’ and ‘C’.

ANSWER-D

19) In long bridges cuttings and high banks some place is kept free at intervals for trolley is known as.

a) Trolley station.

b) Trolley garage.

c) Trolley stand.

d) Trolley refuges.

ANSWER—D

20) In a block section provided with IBH if a motor trolley is permitted to follow a train station master shall treat the entire section as.

a) One block section.

b) Two block section.

c) Automatic block section.

d) IBH section.

ANSWER--A

21) The speed of the motor trolley should not exceed 15 kmph while passing over the .

a) Loop line.

b) Main line.

c) River bridges.

d) Points and crossings.

ANSWER--D

22) No trolley/motor trolley shall be placed on line unless it is fitted with.

a) Search light.

b) Red back light.

c) Red flag on the top.

d) Efficient brake.

ANSWER—D

23) When two or more trollies travelling together, to ensure the safety distance between the two trollies must be.

a) 100 mtrs.

b) 200 mtrs.

c) 300 mtrs.

d) 400 mtrs.

ANSWER--A

24) A motor trolley may be allowed to follow a motor trolley during.

a) Foggy weather.

b) Stormy weather.

c) Clear weather.

d) Unfavorable weather.

ANSWER—C

25) Which trollies are not currently prevalent in many railways.

a) Push trolley.
b) Motor trolley.
c) Material trolley.
d) Moped trolley.

ANSWER—D

Chapter-12 : Working of Trains in Abnormal Conditions & Emergencies

1) In case of total interruption of communication trains can be passed LSS signal only.
   a) After getting the verbal instruction from SM on duty.
   b) With proper authority to proceed.
   c) With normal speed without permission.
   d) With proper authority and restricted speed.

ANSWER—B

2) Exceptional case can the train be backed if so how far it can travel?
   a) In any case train cannot be moved back side.
   b) Can move backside up to certain distance without any protection.
   c) Can move backside up to certain distance with some protection.
   d) Depending upon the signal from guard can move up to any distance.

ANSWER--C

3) While moving back what is the protection to be taken and where?
   a) One detonator at 250 mtrs, and two detonators at 500 mtrs.
   b) One detonator at 100 mtrs, and two detonators at 500 mtrs.
   c) One detonator at 200 mtrs, and two detonators at 500 mtrs
   d) One detonator at 100 mtrs, and two detonators at 400 mtrs.

ANSWER—A

4) The minimum time interval between two successive trains shall not be less than.
   a) 25 minutes.
   b) 30 minutes.
   c) 35 minutes.
   d) 40 minutes.

ANSWER—B

5) All entries relating to the trains in TSL working shall be made in TSR by?
   a) Red ink.
   b) Black ink.
   c) Green ink.
   d) Blue ink.

ANSWER—A

6) The engine or self propelled vehicle or other vehicles proceeding on ‘’Authority to proceed without line clear’ when view is clear at a speed not exceeding.
   a) 10kmph.
   b) 12kmph.
   c) 15kmph.
   d) 30kmph.

ANSWER--C

7) The engine or self propelled vehicle or other vehicles proceeding on ‘’Authority to proceed without line clear’ when view is not clear & obstructed view at a speed not exceeding.

a) 8kmph.

b) 10kmph.

c) 15kmph.

d) 30kmph.

ANSWER—A

8) During the single line working, drivers of train, including light engine shall be issued a caution order in which the following information’s are to be provided? .

a) The line no on which train has to run.

b) The kilometer no where the obstruction exists.

c) Restriction of speed if any.

d) All ‘A’ ‘B’ and ‘C’.

ANSWER--D

9) When non signaling movement is to be done in case of any unusual situation it’s the duty of.

a) SM to pass the train safely.

b) SI to pass the train safely.

c) Chief controller to pass the train safely.

d) Section controller to pass the train safely.

ANSWER—A

10) When a signal fails authority to pass the signal is issued on a prescribed form.

a) T/369(3B).

b) T/369(1).

c) S&T T/351.

d) T/462.

ANSWER— A

11) The caution order or speed restriction is to be issued to the driver on a prescribed form.

a) T/369(1).

b) T/409.

c) T/465.

d) T/509.

ANSWER-B

12) When a material train is going into the section which will come back to the originating station

a) T/509.

b) T/465.

c) T/462.

d) T/462A.

ANSWER-C

13) The T/509 is the authority to be issued to the driver of a train.

a) To enter into block section.

b) To enter into obstructed line.

c) To enter into a private siding.

d) To enter into wrong line.

ANSWER-B

14) The T/465 is the authority to be issued to the driver of a.

a) Passenger train.

b) Goods train.

c) Material train.

d) Track machine.

ANSWER—D

15) All the records in connection with temporary single line working shall be retained at the station for the scrutiny by.

a) Loco inspector.

b) Traffic inspector.

c) Signal inspector.

d) P way inspector.

ANSWER—B

16) After scrutinizing the single line working record of a station by traffic inspector shall be submitted to.

a) DOM.

b) DSO.

c) ADRM.

d) DRM.

ANSWER--D

17) Normal working of train movement has to be introduced by station master only after.

a) Receiving the written certificate from responsible engineering officials.

b) Receiving the written certificate from responsible operating officials

c) Receiving the written certificate from responsible signal officials.

d) Receiving the written certificate from responsible C&W officials.

ANSWER--A

18) The speed of the first train passing over the temporary single line working is restricted to.

a) 15kmph.

b) 20kmph.

c) 25kmph.

d) 30kmph.

ANSWER-C

19) The SM who has a train to dispatch into the effected block section with no communication shall establish contact with the SM of the block station on the other end by sending.

a) Light engine.

b) Motor trolley.

c) Train engine after detaching the train.

d) All ‘A’ ‘B’ and ‘C’.

ANSWER—D

20) A record of all trains passed over the block station on ‘authority to proceed without line clear’ during the course of total interruption of communication shall be scrutinized by traffic inspector and submitted to DRM within

a) 3 days.

b) 5 days.

c) 7 days.

d) 9 days.

ANSWER--C

Objective questions

Chapter 1 : Secondary cells

1) Secondary cells work on

a) reversible physical reactions b) Irreversible physical reactions

c) reversible chemical reactions d) irreversible chemical reactions

(Ans- c)

2) Accumulators is the name of

a) Primary cells b) Dry cells c) Leclanche wet cells d) Secondary cells

(Ans- d)

3) Which of the following cells is a lead acid battery?

a) Nickel Cadmium battery b) VRLA battery

c) Silver Zinc battery d) Nickel Iron battery

(Ans- b)

4) Capacity of cells is expressed as

a) Volts Amperes b) Volts Hours c) Density of electrolyte d) Ampere hours

(Ans- d)

5) Capacity of the secondary cell does not depend on

a) Construction of plates b) Size of the cell

c) Thickness of plates d) Size of terminals

(Ans- d)

6) The flooded type lead acid cells with ------- AH capacity is not used for signaling applications generally

a) 180 b) 80 c) 300 d) 120

(Ans- a)

7) Maximum Permitted D.O.D (depth of discharge) of LMLA cells is

a) 50% b) 100% c) 90% d) 80%

(Ans: d)

8) If the load current of a system is 20A , the backup time required is 6Hours and the permitted D.O.D is 70% then the required capacity of the battery is

a) 200AH b)300AH c) 120AH d) 80AH

(Ans: a)

9) In a Lead acid cell the number of negative plates is

a) equal to the number of positive plates

b) one less than the number of positive plates

c) two more than the number of positive plates

d) one more than the number of positive plates

(Ans: d)

10) During charging process of a lead acid cell

a) the Specific gravity of acid increases

b) the Specific gravity of acid decreases

c) no change occurs in the specific gravity of acid

d) The water content increases

(Ans: a)

11) The temperature of the electrolyte in the cell is

a) Directly proportional to the specific gravity

b) Inversely proportional to the specific gravity

c) directly proportional to the voltage of the cell

d) inversely proportional to the charging time

(Ans: b)

12) For preparing the electrolyte solution for cells

a) iron container can be used b) brass container can be used

c) glass container cannot be used d) PVC container can be used

(Ans: d)

13) If specific gravity of acid is 1825, required specific gravity of solution is 1190 then the ratio of acid to water should be

a) 7:11 b) 5:6 c) 1:5 d) 3:5

(Ans : c)

14) The level of electrolyte should be ----- mm above plates in the cell

a) 20 to30 b) 30 to 40 c) 5to 10 d) 12 to 15

(Ans : d)

15) If C is the AH capacity of the secondary cell then the rate of boost charging current is

a) C/ 20 b) C/10 c) C/5 d) C/18

(Ans : b)

16) The charger output voltage per cell in boost mode should be

a) 2.10 V b) 2.15 V c) 2.40 V d) 2.3 V

(Ans: c)

16) The charger output voltage per cell in for initial charging should be

a) 2.7 V b) 2.25 V c) 2.40 V d) 2.2 V

(Ans: a)

17) The reason for low level of electrolyte in the cell is

a) Internal short circuit b) poor specific gravity

c) excessive charging d) Plates worn out

(Ans: c)

18) Codal life of a secondary cell is

a) 6 years b) 4 years c) 7 years d) 3 years

(Ans : b)

19) Voltage of fully discharged cell is

a) 1.80 V b) 2.00 V c) 1.90 V d) 1.95 V

(Ans : a)

20) Specific gravity of fully discharged cell is

a) 1195 b) 1200 c) 1190 d) 1180

(Ans : d)

21) The maximum boost charging current of a 300AH battery shall be

a) 15A b) 10 A c) 25 A d) 30 A

(Ans : d)

22) Specific gravity of fully charged cell is

a) 1205 b) 1220 c) 1200 d) 1240

(Ans : b)

Chapter 2 : Low maintenance lead acid cells

1) LMLA battery is to be charged in ----------

   a) constant voltage mode b) Constant current mode

   c) increasing current mode d) increasing voltage mode

(Ans : b)

2) Topping up of electrolyte in cells is done with ---------

   a) Distilled water b) concentrated acid

   c) dilute sulphuric acid d) electrolyte

(Ans : a)

3) For conducting capacity test the battery is connected to a load of ------ of its capacity

   a) 20% b) 15% c) 5 % d) 10%

(Ans : d)

4) The initial charging of LMLA cells is done for -------- Hours

   a) 40Hrs b) 45Hrs c) 50Hrs d) 60Hrs

(Ans : d)

5) The float charging current of of a 200AH battery should be

   a) 100 -400 ma b) 500 – 2000ma c) 200 – 800ma d) 400 – 1600ma

(Ans : c)

6) Before conducting capacity test the battery should be kept without load for ------ Hrs after giving full charge

   a) 8Hrs b) 12Hrs c) 10 Hrs d) 6Hrs

(Ans: b)

7) The discharge during capacity test shoud be terminated when the voltage of any one cell in the bank reaches ------ V

   a) 1.6 b) 1.90 c) 1.85 d) 1.95

(Ans: c)

8) Correction of the capacity is to be done during the capacity test when ever Temperature varies from

   a) 240 C b) 250 C c) 270 C d) 280 C

(Ans : c)

Chapter 3 : Battery charger –Self regulating type

1) The range of input voltage for the battery charger is ----------V AC

a) 130-230 b) 160- 300 c) 160-270 d) 180-220

(Ans : c)

2) The R.M.S ripple voltage of battery charger output shall not be more than ------

a) 5% b) 2% c) 10% d) 15%

(Ans : a)

3) For a charger used for Axle counters the R.M.S ripple voltage of output shall not be more than ------

a) 20mv b) 15mv c) 5mv d) 10mv

(Ans : d)

4) The normal output of charger in float mode shall be ------- volts per cell

b) 2.10 b) 2.00 c) 2.25 d) 2.30

(Ans: c)

5) The battery charger gives low battery alarm when cell voltage falls to ------

a) 1.80V b) 1.95V c) 1.90V d) 2.00V

(Ans : b)

6) The battery charger gives start DG alarm when cell voltage falls to ------

a) 1.80V b) 1.95V c) 1.90V d) 2.00V

(Ans : C)

7) The charger shall automatically change to boost mode when the charging current increases more than------ of rated current

a) 10 % b) 15 % c) 8 % d) 5 %

(Ans : C)

8) The power factor of charger shall not be less than -----

a) 0.7 b) 0.9 c) 0.95 d) 0.85

(Ans : a)

9) The no load current of the charger shall not be more than------ of rated current

a) 10 % b) 15 % c) 7 % d) 12 %

(Ans : a)

10) The maximum permitted load on battery bank shall be

a) C/15 b) C/20 c) C/5 d) C/10

(Ans : d)

11) Which of the voltage is not recommended as nominal voltage of charger

a) 12V b) 15V c) 24V d) 48V

(Ans: b)

12) If the rated output of charger is 60V then the maximum number of cells which we can charge with the charger is

a) 30 b) 31 c) 33 d) 32

(Ans : d)

13) The codal life of a battery charger is

a) 15 years b) 12 years c) 20 years d)10 years

(Ans : d)

14) When the charger becomes defective the output voltage of charger shall not exceed ----- Volts per cell in auto mode

a) 2.5v b) 2.3v c) 2.4v d) 2.2v

(Ans: c)

15) For 200 AH capacity battery the charger rating shall be

a) 20 Amps b) 10Amps c) 15 Amps d) 40Amps

(Ans : d)

16) The maximum permitted load on a 300 AH battery is

a) 30Amps b) 20Amps c) 15 Amps d) 25Amps

(Ans : a)

Chapter 4 : Ferro Resonant type automatic AC voltage regulator

1) The primary side core of FRVR is made of ----------
   a) Saturated iron b) saturated steel
   c) unsaturated iron d) unsaturated steel

(Ans: c)

2) The knee voltage of FRVR is ---------- AC
   a) 180V b) 200V c) 140V d) 160V

(Ans: d)

3) The compensating winding in FRVR is connected
   a) in series with secondary winding b) in series with primary winding
   b) in parallel with secondary winding d) in parallel with primary winding

(Ans: b)

4) The magnetic shunt in FRVR helps to
   a) Increase secondary voltage b) helps to reduce primary voltage
   c) achieve resonance effect d) isolate primary and secondary flux

(Ans : d)

5) The no load power in FRVR is not more than --------- of rated input power
   a) 15% b) 10% c) 20% d) 25%

(Ans: a)

6) The no load current of of FRVR shall not be more than ------- of the rated current
   a)15% b) 20% c) 10% d) 30%

(Ans: d)

7) FRVR is designed to with stand short circuit on output upto ----
   a) 20min b) 1 hour c) 30min d) 2hours

(Ans : b)

8) FRVR consists of three capacitors all rated for ---------
   a) 440V b) 350V c) 600V d) 230V
   (Ans: c)

Chapter 5 : Integrated Power Supply System

1) In the IPS system when both the inverters fail the load of signal lighting is shifted automatically to

a) CVT module b) Transformer c) AT d) DG supply.

(Ans : a)

2) If the total AC load of a signaling installation is 1800 VA the required capacity of Inverter module shall be

a) 1.5 KVA b) 1KVA c) 2KVA d) 3.5 KVA

(Ans: c)

3) Type III surge protection is provided

a) in main power distribution panel b) in sub distribution board

c) inside IPS d) in power distribution lines

(Ans : d)

4) The load of ------ is not configured in IPS

a) Axle counter b) Data logger c) AFTC d) RKT

(Ans: c)

5) The battery supply to inverters in IPS shall be disconnected at ------ D.O.D of battery

a) 50% b) 90% c) 60% d) 70%.

(Ans: d)

6) If the load on battery is 30A, backup time is 8Hrs and permitted D.O.D is 70%, then the required capacity of battery is

a) 400 AH b) 300 AH c) 200 AH d) 180 AH .

(Ans : a)

7) At ----- D.O.D of battery the " Start DG" indication appears in the Remote Indication Panel

a) 80% b) 50% c) 60% d) 70%.

(Ans: b)

8) N+2 configuration of DC-DC converters is chosen for

a) Relay external circuit b) Relay internal circuit

c) Block circuit d) Axle counter circuit

(Ans: b)

9) The AC input voltage range of IPS is

a) 200 to 350V b) 120-200V c) 150-270V d)220-250V

(Ans: c)

10) Load of AFTC is connected to ------ module of IPS

a) SMR b) Inverter c) CVT d) no module

(Ans: d)

11) Automatic change over between Inverters and CVT takes place in ---- msec

a) 50 b) 60 c) 200 d) 500

(Ans: b)

12) CSU module is provided in ------ of IPS (F)

a) SMPS b) ACDP c) DCDP d) status monitoring panel

(Ans: a)

13) SMR trips when temperature raises beyond

a) 80^0C b) 50^0C c) 60^0C d) 70^0C

(Ans: d)

14) Supply for track circuits is taken from

a) Inverters b) charger c) SMR d) transformer

(Ans: b)

15) The Output AC of CVT modules is

a) 110V AC b) 110VDC c) 220V DC d) 230V AC

(Ans : d)

16) For Point operation DC 110V is taken through a

a) 20A fuse b) 10A fuse c) 15A fuse d) MCB

(Ans: a)

17) If the relay internal load of a station is 18Amps then the number of DC DC converter modules @5A required for relay internal circuit will be

a) 3 b) 6 c) 4 d) 8

(Ans : b)

18) If the relay external load of a station is 16 Amps then the number of DC DC converter modules @5A required for relay external circuit will be

a) 3 b) 6 c) 4 d) 5

(Ans : d)

19) The voltage drop in power cable from AT to power panel shall be less than

a) 20 V b) 15V c) 25 V d) 30 V

(Ans: d)

Chapter 6 : Power Supply Arrangements

1) If traction switching post is located within -------- mt from station then the AT supply is drawn directly from it.

a) 200 b) 150 c) 350 d) 500

(Ans : c)

2) The order of supplies for automatic change over at way side stations is

a) Main AT supply , first standby Local supply, DG second standby

b) Main Local supply, first standby AT supply, DG second standby

c) Mains AT supply, first standby DG, second standby Local supply

d) Any one of the other three

(Ans: a)

3) For cabins beyond –---- KM separate set of AT & CLS panel are provided

a) 03 b) 01 c) 2.5 d) 2

(Ans: d)

4) The AT with the following capacity is not available

a) 5KVA b) 6KVA c) 10KVA d) 25KVA

(Ans: b)

5) The capacity of AT for a station with 6 to 10 lines shall be

a) 10KVA b) 30KVA c) 15KVA d) 25KVA

(Ans : d)

6) The capacity of AT for major RRI with more than 10 lines shall be

a) 50KVA b) 25KVA c) 20KVA d) 75KVA

(Ans: a)

7) The order of supplies for RRI installation shall be

a) Main AT supply, first standby 3phase Local supply, DG second standby

b) Main 3 phase Local supply, first standby AT supply, DG second standby

c) Mains AT supply, first standby DG, second standby 3 phase Local supply

d) Any one of the other three

(Ans: b)

8) AT supply for lighting shall not be extended to

a) SM room b) S&T cable hut c) FOB d) SM store room

(Ans : d)

9) When ZR relay drops

a) Signals go blank b) Track circuits fail to operate

c) Route will not release d) Points fail to operate

(Ans: c)

10) Power panel may have facility to bypass

a) Inverter b) CLS Transformer c) Stabilizer d) Track chargers

(Ans : c)

11) For signal lighting circuits ---------- is used

a) 110V DC with unscreened cables
b) 110V AC with unscreened cables
c) 110V DC with screened cables
d) 110V DC with screened cables

(Ans : b)

12) For track circuits the supply shall be --------

a) 3 cells connected in parallel
b) 2 cells connected in parallel
c) 3 cells connected in series
d) 4 cells connected in parallel

(Ans : c)

13) The size of power cable with 25 KVA at shall be

a) 2 x 165 sqmm Aluminium
b) 4 x 165 sqmm Aluminium
c) 2 x 185 sqmm Aluminium
d) 2 x 200 sqmm Aluminium

(Ans : c)

14) The size of power cable with 10 KVA at shall be

a) 2 x 100 sqmm Aluminium
b) 2 x 70 sqmm Aluminium
c) 2 x 150 sqmm Aluminium
d) 2 x 120 sqmm Aluminium

(Ans: b)

15) At the input side of power panel ------ is provided

a) RCD b) Fuse c) MCB d) SPD

(Ans: c)

Chapter – 7 : Power Supply Load Calculation

1) If the primary side of a transformer draws 500 VA power and secondary side draws 400VA power, then the efficiency of the transformer is

a) 0.5 b) 0.6 c) 0.8 d) 0.95

(Ans: c)

2) The current drawn by 200 number of QN1 relays will be

a) 14A b) 10A c) 20 A d) 5A

(Ans: a)

3) If one LED unit draws 14omA current then a 3aspect LED signal unit draws ------current

a) 420 ma b) 280ma c) 140ma d) 600ma

(Ans: c)

4) If the load of signals at station is 1600VA the required capacity of Inverter will be

a) 2.5 KVA b) 3KVA c) 2KVA d) 1.5KVA

(Ans: c)

5) If the total load of an installation is 9000VA the capacity of DG set required is

a) 12KVA b) 10KVA c) 15KVA d) 25KVA

(Ans: c)

6) If the load of signals at station is 1600VA the required capacity of CVT will be

a) 2.5 KVA b) 3KVA c) 2KVA d) 1.5KVA

(Ans: c)

7) If the load of track circuit at station is 600VA the required number of Transformers (230/110) will be

a) 2 nos @ 500VA b) 3 nos @ 500VA c) 2 nos @ 1KVA d) 2 nos @ 1.5KVA

(Ans: b)

8) The relay internal load of station is 16.5A how many DC-DC conv modules be needed for it in the IPS

a) 2Nos@ 5A b) 3nos @ 5A c) 4nos @ 10A d) 6nos @ 5A

(Ans : d)

9) At a station with conventional charging system, if a point circuit has a load of 12Amps, backup time needed is 6Hours & D.O.D permitted is 70%, then the required capacity for point operation shall be

a) 200AH b) 80AH c) 120AH d) 300AH

(Ans: c)

10) The capacity of charger required to charge a battery of 120AH shall be

a) 10A b)15A c) 20A d) 30A

(Ans: d)

11) At a station with conventional charging system, if there are 250 Q style relays for internal circuit and 60% relays pickup in peak load condition, backup time needed is 6Hours & D.O.D permitted is 70%, then the required capacity for relay operation shall be

a) 120AH

b) 80AH

c) 180AH(R)

d) 120AH

(Ans: d)

12) If the load of signal circuit at a station is 1600VA then the capacity of Inverter should be -----

a) 2KVA

b) 1.5KVA

c) 2.5KVA

d) 2KVA

(Ans: d)

13) If the load on the secondary side of a track transformer is 1200VA considering 85% of transformer efficiency, the primary load shall be ----- approximately

a) 1500 VA

b) 1300VA

c) 1600 VA

d) 1250VA

(Ans: a)

Objective Questions

Chapter 1: Multiple Unit Colour Light Signal

1. The light units are specifically designed to avoid _____ effects in sunlight (c)
   a) phantom
   b) double indication
   c) both a& b
   d) over lighting

2. The number of lens used in colour light signal are (d)
   a) 3
   b) 4
   c) 5
   d) 2

3. Night aspect and day aspect are _____ in colour light signal (b)
   a) Different
   b) Same
   c) Changes with climate
   d) Difficult to predict

4. colour light signal are made with _____ material (b)
   a) Aluminum and iron
   b) Cast iron and sheet metals
   c) Aluminum and Cast iron
   d) Both a & c

5. _____ beam of light is produced by colour light signal (d)
   a) High intensity
   b) Low intensity
   c) Great penetrating power
   d) Both a & c

6. Colour light signals fails due to moving parts in signal unit (a)
   a) Wrong
   b) Correct
   c) Partially correct
   d) Both b & c

7. _____ number of moving parts are in colour light signals (d)
   a) 5
   b) 6
   c) 7
   d) Only door

8. Backgrounds such as trees and buildings _____ backgrounds colour light signals. (b)
   a) Bad
   b) Good
   c) No idea
   d) Both a & b

9. Aspects can be displayed at driver's _____ (a)
   a) eye level
   b) below eye level
   c) above eye level
   d) both b& c

10. In colour light signals cable termination box is provided at _____ (a)
    a) Above mounting socket
    b) Below mounting socket
    c) Not available
    d) Both b & c

11. Breathing holes are also provided on the cover, one for each compartment to ensure _____ (c)
    a) lighting
    b) sun light
    c) ventilation
    d) both b & c

12. Inside the signal unit each compartment should be painted with _____ colour. (c)
    a) Black
    b) Yellow
    c) White
    d) Green

13. To ensure good visibility it is essential that the light unit is focused to align the beam of light towards the _____ (a)
    a) Driver
    b) Guard
    c) Passengers
    d) All a, b & c

14. Sighting Apertures are provided on the _____ of the signal units on terminal box (two numbers) (d)
    a) Left side
    b) No side
    c) All sides
    d) Right side

15. Number of Lens used in colour light signal (c)
    a) 5
    b) 3
    c) 2
    d) 4

16. _____ signal lamp is used for OFF aspect when aspect control circuit has cascading (b)
    a) SL21
    b) SL18
    c) SL35
    d) BOTH A& C

17. The signal lamp to be used in directional indicator is _____ (a)
    a) SL33
    b) SL35
    c) SL13
    d) SL25

18. The signal lamp terminal voltage shall not be more than _____ of rated voltage. (c)
    a) 95%
    b) 80%
    c) 90%
    d) 100%

19. The No load current of a signal transformer shall not be more than _____ (c)
    a) 5 mA
    b) 10 mA
    c) 15 mA
    d) 20 mA

20. The power ratting of a signal transformer is _____ (d)
    a) 400 VA
    b) 4 VA
    c) 4000 VA
    d) 40 VA

21. The tapping on secondary side of signal transformer is/are (d)
    a) 0,0.5 & 13 V
    b) 1,14.5 & 16 V
    c) 11,12 & 15 V
    d) Both a & b

22. Diameter of tubular post in colour light signals is _____ (a)
    a) 140 mm
    b) 150 mm
    c) 160 mm
    d) 170 mm

23. Diameter of signal base in colour light signals is _____ (c)
    a) 140 mm
    b) 150 mm
    c) 160 mm
    d) 170 mm

24. Diameter of inner colourd lens in colour light signals is _____ (c)
    a) 213 mm
    b) 200 mm
    c) 140 mm
    d) 100 mm

25. Diameter of Outer lens in colour light signals is _____ (a)
    a) 213 mm
    b) 200 mm
    c) 140 mm
    d) 100 mm

26. % Regulation measured on secondary side shall not be more than _____ (a)
    a) 15%
    b) 20%
    c) 25%
    d) 30%

Chapter 2: Signal Aspect Control Circuits

1. For 2-aspect signal, _____ no. of control relay is required. (d)
   a) 3
   b) 5
   c) 7
   d) 1

2. For 3-aspect signal, _____ no. of control relay are required. (c)
   a) 4
   b) 6
   c) 2
   d) 8

3. For 4-aspect signal, _____ no. of control relay are required. (a)
   a) 3
   b) 5
   c) 7
   d) 1

4. Energisation of HR relay connects "OFF" Aspect _____ indication. (d)
   a) Green
   b) Red
   c) Pink
   d) Yellow

5. For 3-aspect signal control relays used are _____ & _____ (a)
   a) HR & DR
   b) RR & DR
   c) HR & RR
   d) Both a & c

6. Front contact of _____ relay is used for green aspect lamp circuit. (b)
   a) RR
   b) DR
   c) HR
   d) Both a & c

7. Front contact of _____ relay is used for Yellow aspect lamp circuit (c)
   a) RR
   b) DR
   c) HR
   d) Both a & b

8. HR ↑ + HHR ↑+ DR ↓ gives _____ indication in 4-aspect signal control circuit (a)
   a) HHG
   b) HG
   c) RG
   d) DG

9. Three-Aspect Distant Signal Control Circuit (PERMISSIVE SIGNAL) _____ indication will appear when DR ↓. (a)
   a) HG
   b) DG
   c) HHG
   d) RG

10. HR ↑ + HHR ↓ + DR ↑ gives Green indication. This method is used in _____ Block working. (d)
    a) Automatic
    b) One train only
    c) Pilot
    d) Absolute

11. HR ↑ + HHR ↑ + DR ↑ gives Green indication. This method is used in _____ Block working. (a)
    a) Automatic
    b) One train only
    c) Pilot
    d) Absolute

12. HR ↑ + DR ↓ gives _____indication. (d)
    a) Green
    b) Red
    c) Pink
    d) Yellow

13. HR ↓ gives _____indication. (b)
    a) Green
    b) Red
    c) Pink
    d) Yellow

Chapter 3: Signal Indications Circuits

1. In potential drop method, the indications connected across the resistor in _____ (b)
   a) Series
   b) Parallel
   c) Perpendicular
   d) Hexagonal

2. I – type transformer is used in _____ side of signal transformer (b)
   a) Secondary
   b) Primary
   c) Top
   d) Bottom

3. ECR MEANS (c)
   a) ELECTRONIC relay
   b) Current relay
   c) Lamp checking relay
   d) Lamp cooled relay

4. _____ types of current transformers are in use over Indian railways (c)
   a) 1
   b) 2
   c) 3
   d) 4

5. The transformer mentioned below is not used in IR (c)
   a) H-type
   b) I –type
   c) J –type
   d) L –type

6. H – type transformer is used in _____ side of signal transformer (a)
   a) Secondary
   b) Primary
   c) Top
   d) Bottom

7. RECR is connected _____ side of signal transformer (b)
   a) Secondary
   b) Primary
   c) Top
   d) Bottom

8. HECR is connected _____ side of signal transformer (d)
   a) Secondary
   b) Top
   c) Bottom
   d) Primary

9. DECR is connected _____ side of signal transformer (d)
   a) Secondary
   b) Top
   c) Bottom
   d) Primary

10. _____ no: methods are adopted for repeating signal aspects. (c)
   a) 1
   b) 2
   c) 3
   d) 4

Chapter 4: Triple Pole Lamps

1. Glowing of signalling lamps are the main tools for giving proper communication to driver through the indication in _____ fashion. (c)
   a) Verbal
   b) Audible
   c) Nonverbal
   d) Both a & b

2. Railway signalling failures cause hamper the punctuality of the _____ running. (b)
   a) Auto
   b) train
   c) Aeroplane
   d) Taxi

3. In colour light Signalling, where there is no cutting-in arrangement, lamps_____, 12V/33W double filament 3-pin are used. (c)
   a) SL-20
   b) SL-31
   c) SL-21
   d) SL-40

4. In colour light Signalling, where there is cutting-in arrangement, lamps _____ 12 V / 24 W single filament 2-pole 3-pin lamps are used for OFF aspect. (a)
   a) SL 18
   b) SL-31
   c) SL-40
   d) SL-20

5. the schedule of replacement of signal lamp is _____ for ON aspects (d)
   a) 50 days or 2000 hours
   b) 25 days or 2000 hours
   c) 35 days or 2000 hours
   d) 45 days or 1000 hours

6. the schedule of replacement of signal lamp is _____ for OFF aspects. (b)
   a) 100 days
   b) 90 days
   c) 60 days
   d) 50 days

7. Triple pole lamps and Double pole lamps can be interchanged with changing holders (b)
   a) Only in FSS
   b) not possible in any signal
   c) only in LSS
   d) possible in Distant signal

8. In Triple pole lamps The auxiliary filament lighted as soon as the main filament is ____(d)
   a) Glowing
   b) Decrease brightness
   c) Both a & b
   d) fused.

9. _____ will appear in the cabin/Panel when main filament is fused so that lamp can be replaced before the failure of auxiliary filament. (d)
   a) Alarm only
   b) Indication only
   c) No Alarm / Indication
   d) Both a & b

10. With Triple pole lamps the chances of signal becoming no light due to lamp fusing are _____ (b)
    a) Increased
    b) drastically reduced.
    c) slightly Increased
    d) drastically Increased

11. In Triple pole lamps, there are two filaments of _____ wattage. (d)
    a) Different
    b) High and low
    c) Very High and very low
    d) Same or equal

12. MECR means (a)
    a) Main lamp checking relay
    b) Multi purpose current relay
    c) Miniature cascading relay
    d) Multi electronic computing relay

13. MECR picks up when _____ filament lits. (c)
    a) Auxiliary
    b) Supporting
    c) Main
    d) Either a or b

14. auxiliary filament gets supply through_____ in series with the MECR drop contact. (a)
    a) Resistance
    b) Condenser
    c) Diode
    d) IC

15. MECR is normally up and made _____ to avoid wrong indication at the time of aspect changing (b)
    a) Quick to release
    b) slow to release
    c) slow to pickup
    d) quick to pickup

16. SL 35A 12 V / 24 W, 24 W 1000 hours Normally used for _____Aspect in CLS. (d)
    a) Red
    b) Blue
    c) Orange
    d) OFF

17. SL 35AL (Longer life) 12 V / 24 W, 24 W _____ hours. (c)
    a) 3000
    b) 4000
    c) 5000
    d) 6000

18. SL 35BL (Longer life) 12 V / 24 W, 24 W _____ hours. (c)
    a) 3000
    b) 4000
    c) 5000
    d) 6000

19. The lamp given below is a three pin & double pole & double filament (d)
    a) SL-35A
    b) SL-35B
    c) SL-18
    d) SL-17

20. The lamp given below is a three pin & double pole & double filament (b)
    a) SL-35A
    b) SL-21
    c) SL-35B
    d) SL-18

21. The lamp given below is a three pin & triple pole & double filament (a)
    a) SL-35A
    b) SL-21
    c) SL-17
    d) SL-18

22. The lamp given below is a three pin & triple pole & double filament (c)
    a) SL-5
    b) SL-21
    c) SL-35AL
    d) SL-18

23. The lamp given below is a three pin & triple pole & double filament (d)
    a) SL-21
    b) SL-17
    c) SL-18
    d) SL-35B

24. The lamp given below is a three pin & triple pole & double filament (b)
    a) SL-21
    b) SL-35BL
    c) SL-18
    d) SL-5

25. Main filament Proving Relay is represented as (a)
    a) GXPR
    b) HECR
    c) RECR
    d) DECR

Chapter 5: Inner Distant Signal

1. In MACLS system, the driver of a train is warned of approaching a stop signal by _____ signal. (b)
   a) Calling On
   b) Permissive
   c) Shunt
   d) Route

2. Distant signal is located at an adequate distance in _____ of the stop signal. (a)
   a) Rear
   b) Advance
   c) Top
   d) Bottom

3. Permissive signal is provided for _____ signal in advance (c)
   a) Passenger Warning board
   b) Goods Warning board
   c) Stop
   d) Express Warning board

4. The distance between distant signal and FSS in MACLS tertiary is _____. (d)
   a) 2 KM
   b) 3 KM
   c) 4 KM
   d) 1 KM

5. Distant signal Pre-warns the_____. (a)
   a) stop signal
   b) Calling On
   c) Shunt
   d) Route

6. A general rule (GR) 3.07(6) stipulates that "Wherever necessary more than one _____ signal may be provided (a)
   a) Distant
   b) Advance starters
   c) FSS
   d) LSS

7. In double distant territory the outer most signal is called _____ (c)
   a) inner distant signal
   b) FSS
   c) Distant
   d) LSS

8. In double distant territory the inner signal is called _____ (a)
   a) inner distant signal
   b) FSS
   c) Distant
   d) LSS

9. In double distant territory the outer most signal is called _____ & the inner signal is called _____ (a)
   a) Distant & inner distant signal
   b) Distant & FSS signal
   c) LSS & inner distant signal
   d) FSS & LSS signal

10. In MACLS the distant signal can be placed at an _____ distance in the rear of home signal (d)
   a) More
   b) Less
   c) Short
   d) Adequate

11. Distant signal shall be placed at _____from the inner distant signal. (b)
   a) 2 KM
   b) 1 KM
   c) 4 KM
   d) 3 KM

12. In double distant territory the _____ shall be dispensed (c)
   a) Passenger Warning board
   b) Goods Warning board
   c) Both a & b
   d) SLB

13. The _____ signals are also provided with second distant signals (a)
   a) IBS
   b) LSS
   c) CALLING ON
   d) SHUNT

14. Interlocked _____ gates which are also provided with second distant signals (a)
   a) level crossing
   b) ROB
   c) RUB
   d) Both b & C

15. In Single Distant Territory yellow on distant indicates (b)
    a) May stop at main line starter
    b) May stop at home
    c) run through
    d) stop at distant

16. In Single Distant Territory double yellow on distant indicates with FSS yellow (a)
    a) May stop at main line starter
    b) May stop at home
    c) run through
    d) stop at distant

17. In Single Distant Territory Green on distant indicates (c)
    a) May stop at main line starter
    b) May stop at home
    c) run through
    d) stop at distant

18. In Double Distant Territory double yellow on distant and red on FSS indicates (b)
    a) May stop at main line starter
    b) May stop at home
    c) run through
    d) stop at distant

19. In Double Distant Territory green on distant and Yellow on FSS indicates (a)
    a) May stop at main line starter
    b) May stop at home
    c) run through
    d) stop at distant

20. In Double Distant Territory green on distant and green on FSS indicates (c)
    a) May stop at main line starter
    b) May stop at home
    c) run through
    d) stop at distant

21. In Double Distant Territory green on distant and Yellow on inner distant indicates (a)
    a) May stop at main line starter
    b) May stop at home
    c) run through
    d) stop at distant

22. In Double Distant Territory green on inner distant and green on FSS indicates (c)
    a) May stop at main line starter
    b) May stop at home
    c) run through
    d) stop at distant

23. Normal Aspect of distant in Double Distant Territory (c)
    a) Caution
    b) Proceed
    c) Attention
    d) Stop

24. Normal Aspect of inner distant in Double Distant Territory (a)
    a) Caution
    b) Proceed
    c) Attention
    d) Stop

25. Normal Aspect of FSS in Double Distant Territory (c)
    a) Caution
    b) Proceed
    c) Attention
    d) Stop

Chapter 6: Led Signal Units

1. Signals are provided to guide the _____driver for safe journey. (a)
   a) rail engine
   b) car
   c) lorry
   d) bus

2. Life of LED signals is _____ hours. (d)
   a) 5 lakh
   b) 2 lakh
   c) 4 lakh
   d) 1 lakh

3. In LED light sources are solid state p-n junction _____devices. (c)
   a) Insulator
   b) Conductor
   c) Semiconductor
   d) Resistor

4. In LED convert excess energy into _____. (b)
   a) Sound
   b) Light
   c) Taste
   d) Smell

5. The colour of emitted light depend upon _____ & _____used in LED (a)
   a) wavelength & materials
   b) frequency & company
   c) resistance & condenser
   d) ohms & hertz

6. LED lamp is _____ and do not need external lenses or periodic focussing. (d)
   a) Un focused
   b) Over focused
   c) Out of focused
   d) Pre-focused

7. LED lamps are _____with existing signal unit (b)
   a) Not compatible
   b) Compatible
   c) Requires alteration
   d) Both a & c

8. Traffic hazards while bulbs are being changed by maintenance staff are ___ with LED (c)
   a) Increased
   b) Over Increased
   c) Eliminated
   d) No change

9. LED signals use _____energy. (a)
   a) Less
   b) More
   c) High
   d) Very high

10. The current required to pick up LED ECR is (d)
   a) 20 mA
   b) 60 mA
   c) 80 mA
   d) 108 mA

11. Maintenance costs _____ as they don't need frequent replacement. (d)
   a) Increased
   b) Un-bearable
   c) Enhanced
   d) Reduced

12. LED Signal aspect unit comprises of a cluster of _____ in series and parallel combinations. (c)
   a) Condenser
   b) Resistance
   c) LEDs
   d) BY 126 diode

13. All aspects (except route and shunt) use ____ arrays for higher noise immunity and also provide the redundancy (b)
   a) 1
   b) 2
   c) 3
   d) 4

14. The number of LED's used should not be less than ___ for RED & YELLOW aspects(c)
   a) 40
   b) 50
   c) 60
   d) 80

15. The number of LED's used should not be less than _____ for GREEN aspect (a)
    a) 30
    b) 40
    c) 50
    d) 60

16. The number of LED's used should not be less than _____ for Shunt signal (c)
    a) 11
    b) 12
    c) 13
    d) 14

17. The minimum illumination of LED signal units measured at a distance of 1.5 metres in axial direction is _____ lux for RED aspect. (b)
    a) 40
    b) 50
    c) 60
    d) 70

18. The minimum illumination of LED signal units measured at a distance of 1.5 metres in axial direction is _____ lux for YELLOW aspect (c)
    a) 80
    b) 90
    c) 100
    d) 110

19. The minimum illumination of LED signal units measured at a distance of 1.5 metres in axial direction is _____ lux for GREEN aspect (a)
    a) 100
    b) 110
    c) 120
    d) 130

20. The visibility of each main aspect of LED signal unit ___ in clear day light (c)
    a) 400m
    b) 500m
    c) 600m
    d) 800m

21. The visibility of RED aspect of LED signal unit ____ in clear day light (c)
    a) 400m
    b) 500m
    c) 600m
    d) 800m

22. The visibility of YELLOW aspect of LED signal unit _____ in clear day light (c)
    a) 400m
    b) 500m
    c) 600m
    d) 800m

23. The visibility of GREEN aspect of LED signal unit _____ in clear day light (c)
    a) 400m
    b) 500m
    c) 600m
    d) 800m

24. Visibility of Route indicator is _____ with LED signals (a)
    a) 400m
    b) 500m
    c) 600m
    d) 800m

25. _____ ECR can be used for LED AC signal latest version (b)
    a) Conventional ECR
    b) LED AC ECR
    c) LED ECR
    d) Both b & c

26. LED signal lighting units display area Main and Calling-On signals are _____ mm diameter. (b)
    a) 100
    b) 125
    c) 150
    d) 200

27. LED signal lighting units display area Route and Shunt signals are ___ mm diameter (c)
    a) 65
    b) 75
    c) 85
    d) 95

28. Normal working voltage of LED signal unit is / are _____ (a)
    a) 110 V AC
    b) 110V DC
    c) 230V AC
    d) 230V DC

29. Fuse to be used in LED signal unit installation is / are _____ (a)

a) 630 mA
b) 2 A
c) 1.5 A
d) 230 mA

Chapter 7: Automatic Colour Light Signalling

1. In _____Block Working is a system of train working in which movement of the trains is controlled by the automatic stop signals. (b)
   a) Absolute
   b) Automatic
   c) One train only
   d) Pilot guard

2. Signals are operated _____ by the passage of trains into and out of the automatic signalling sections (c)
   a) Manually
   b) BY S & T staff
   c) Automatically
   d) Both a & b

3. The line is track circuited throughout its length, each section of which is governed by an _____ (a)
   a) Automatic Stop Signal
   b) FSS
   c) LSS
   d) Starter

4. The movement of trains into Automatic Block Working is controlled by ____ signals. (d)
   a) Shunt
   b) Calling-On
   c) Both a & b
   d) Stop

5. No Automatic Signal assumes 'OFF' unless the line is clear not only upto the stop signal ahead, but also an _____ distance beyond it. (c)
   a) Over lap
   b) Adequate
   c) Both a & b
   d) Isolation

6. The Automatic Signalling arrangement facilitates to _____the Line capacity (d)
   a) Reduce
   b) Decrease
   c) Hamper
   d) Increase

7. The Automatic Signalling arrangement facilitates to Increase the _____. (c)
   a) Section capacity b) Division capacity
   c) Line capacity d) All a & c

8. The adequate distance /overlap in Automatic Block Working, shall not be less than ___ metres (c)
   a) 180
   b) 200
   c) 120
   d) 300

9. The track divided into sections in Automatic Block Working are called the _____ (a)
   a) Automatic Signalling Sections
   b) Absolute Signalling Sections
   c) One train only Signalling Sections
   d) Pilot guard Signalling Sections

10. The section between two automatic stop signals is divided into minimum ___ portions (b)
   a) 1
   b) 2
   c) 3
   d) 4

11. The first portion between two automatic stop signals is termed as _____ (d)
   a) Isolation
   b) Berth Track
   c) Minor portion
   d) over lap

12. The second portion between two automatic stop signals is termed as _____ (b)
   a) Isolation
   b) Berth Track
   c) Minor portion
   d) over lap

13. Type of Signals provided in Automatic Block Working are _____ (b)
   a) TACLS
   b) MACLS
   c) Semaphore lower quadrant
   d) Semaphore upper quadrant

14. The numbering in _____ Block Working are as ODD numbers in one direction& even numbers in the other direction. (b)
   a) Absolute
   b) Automatic
   c) One train only
   d) Pilot guard

15. Track circuits used in Automatic Block Working are of _____ type (d)
    a) AC single rail or double rail
    b) DC single rail or double rail
    c) Electronic track circuit
    d) Any one a/b/c

16. Number of signaling sections are required to be clear to get attention aspect in Automatic Block Working with 4 aspect signaling. (a)
    a) 1 + over lap
    b) 2 + over lap
    c) 3 + over lap
    d) 4 + over lap

17. Number of signaling sections are required to be clear to get caution aspect in Automatic Block Working with 4 aspect signaling. (a)
    a) 1 + over lap
    b) 2 + over lap
    c) 3 + over lap
    d) 4 + over lap

18. Number of signaling sections signaling sections are required to be clear to get proceed aspect in Automatic Block Working with 4 aspect signaling. (c)
    a) 1 + over lap
    b) 2 + over lap
    c) 3 + over lap
    d) 4 + over lap

19. Number of signaling sections are required to be clear to get caution aspect in Automatic Block Working with 3 aspect signaling. (a)
    a) 1 + over lap
    b) 2 + over lap
    c) 3 + over lap
    d) 4 + over lap

20. Number of signaling sections are required to be clear to get proceed aspect in Automatic Block Working with 3 aspect signaling. (b)
    a) 1 + over lap
    b) 2 + over lap
    c) 3 + over lap
    d) 4 + over lap

21. To pick HYR1/HR of S1 in Automatic Block Working the GECR of _____ up-contact is used. (d)
    a) Rear signal
    b) Front signal
    c) No signal
    d) Advance signal

22. GECR proves that signal a head/ in advance is _____ (not Blank) (b)
    a) Blank
    b) Not Blank
    c) Not glowing
    d) Fused

23. Proving of GECR up-contact in HR/HYR of signal in rear is called _____ circuit. (c)
    a) Green Lamp Protection
    b) Yellow Lamp Protection
    c) Red Lamp Protection
    d) Route Lamp Protection

24. Displaying next restrictive aspect when any aspect fused in a signal unit is called _____ (b)
    a) Red Lamp Protection
    b) Cascading circuit.
    c) Green Lamp Protection
    d) Yellow Lamp Protection

25. DECR _____ contact is used across DR back contact in cascading circuit. (b)
    a) Front
    b) Back
    c) Arm
    d) Both a & c

26. HECR _____ contact is used across HR back contact in cascading circuit (c)
    a) Front
    b) Arm
    c) Back
    d) Both a & b

27. DECR & HECR back contact are used across DR & HR back contact to glow _____ aspect in cascading circuit (c)
    a) Green
    b) Yellow
    c) Red
    d) Route

28. If DG fuses _____ aspect will glow in 3-aspect cascading circuit. (b)
    a) Green
    b) Yellow
    c) Red
    d) Route

29. If HG fuses _____ aspect will glow in 3-aspect cascading circuit (c)
    a) Green
    b) Yellow
    c) Red
    d) Route

30. If DG fuses _____ aspect will glow in 4-aspect cascading circuit (d)
    a) Green
    b) Yellow
    c) Red
    d) Double Yellow

31. If HHG fuses _____ aspect will glow in 4-aspect cascading circuit (b)
    a) Green
    b) Yellow
    c) Red
    d) Double Yellow

32. If HG fuses _____ aspect will glow in 4-aspect cascading circuit. (c)
    a) Green
    b) Yellow
    c) Red
    d) Double Yellow

33. Red lamp protection provided to _____ (d)
    a) Protect blank signal
    b) prevent blanking of signal
    c) Replacement of signal to ON
    d) a & b both

Objective

Chapter-1 : Signal Control Circuits

1. In vital circuit design _____ Principle used for designing of circuits (B)
   A) Open circuit
   B) Closed circuit
   C) Both open & closed
   D) Neither closed Nor open circuit

2. In Non-vital circuit design _____ Principle used for designing of circuits (C)
   A) Open circuit
   B) Closed circuit
   C) Both open & closed
   D) Neither closed Nor open circuit

3. Signal Control Circuits are designed in accordance with the_____ (D)
   A) Essentials of interlocking
   B) Signal Engineering Manual
   C) General Rules
   D) All the above

4. For clearing the Home signal _____ required (D)
   A) Points in the route
   B) Isolation points
   C) Overlap points
   D) All the above

5. For clearing the Starter signal _____ required (B)
   A) Points in the route & overlap
   B) Points in the route & isolation points
   C) Points in the route, isolation points & overlap points
   D) Points in the route only

6. For clearing the Shunt signal _____ required (D)
   A) Points in the route & overlap
   B) Points in the route & isolation points
   C) Points in the route, isolation points & overlap points
   D) Points in the route only, Isolation points not compulsory

7. For clearing Home signal _____ Track circuits are required (A)
   A) Track circuits in the route up to next signal and Overlap tracks.
   B) Tracks up to next signal in advance in the route
   C) Tracks up to next signal in advance in the route excluding berthing track
   D) One track circuit in advance of the signal

8. For clearing starter signal _____ Track circuits are required (B)

   A) Track circuits in the route up to next signal and Overlap tracks.

   B) Tracks up to next signal in advance in the route

   C) Tracks up to next signal in advance in the route excluding berthing track

   D) One track circuit in advance of the signal

9. For clearing shunt signal _____ Track circuits are required (C)

   A) Track circuits in the route up to next signal and Overlap tracks.

   B) Tracks up to next signal in advance in the route

   C) Tracks up to next signal in advance in the route excluding berthing track

   D) One track circuit in advance of the signal

10. In case of stations/yards where no track circuit or axle counter is provided on berthing tracks _____ (A)

    A) A line verification box can be used to verify the clearance of the tracks

    B) station master manually ensures the berthing track and receives train on signal

    C) Berthing tracks not proved in signal control circuit

    D) Train can receive on Non-signal Movement only

11. For Major Yards Home and CO-ON signals having _____ (B)

    A) Common slot

    B) Separate slots

    C) slot for Home signal only

    D) Slot for CO-ON signal only

12. The relays used to prove the sequential occupation & clearance of track circuits & release of the route after passage of train _____ (A)

    A) UYR

    B) UCR

    C) UHR

    D) UGR

13. Route Indicator lamp checking relay UECR picks up when minimum _____ No of Lamps/ LEDs lit. (B)

    A) 2

    B) 3

    C) 4

    D)5

14. In signal control circuit _____ band Contact of signal lever Concerned is proved on both +ve side and on -ve side of the relay (A)

    A) R

    B) N

    C) Both N & R

    D) Neither N nor R

15. In signal control circuit_____ band contact of signal lever concern bridged or bye passed with signal control relay coil. (B)

A) R

B) N

C) Both N & R

D) Neither N nor R

16. In signal control circuit mandatory to prove _____ (B)

A) Both Signal in advance & rare should not blank.

B) Signal in advance should not blank

C) Signal in rare should not blank

D) Neither advance nor rare signal condition proved

17. After clearing the signal if train passed the signal, OFF aspect automatically goes to ON aspect and signal will not reclear even signal lever in reverse position. This is achieved by _____ Relay (C)

A) TRSR

B) TLSR

C) TSR

D) TPZR

18. After taking OFF signal if train cleared the route, signals assumes to ON aspect and signal will not reclear even signal lever in reverse position. This is achieved by _____ Relay (C)

A) TRSR

B) TLSR

C) TSR

D) TPZR

19. TSR is also called as_____ (D)

A) SR

B) LSR

C) ASR

D) Both A & B

20. The TSR is controlled by_____ (D)

A) first track circuit immediately in advance of the signal

B) first two track circuits immediately in advance of the signal

C) first track circuit immediately in advance of the signal and the Reverse position of the signal lever

D) First track circuit immediately in advance of the signal and the Normal position of the signal lever

21. TSR will ensure_____ (C)

A) One Route one signal movement

B) One signal one route movement

C) One signal one movement

D) One signal multi route movement

22. After picking TSR, TSR sticks Though _____ (A)

A) TSR front contact

B) TSR back contact

C) TSR front & Knob Normal

D) TSR front & Knob Reverse

23. In TSR circuit knob contact bye-passed or bridged with _____contacts S (A)

A) TSR front

B) TSR back

C) Both TSR front & back

D) Neither front Nor back

24. TSR _____ (D)

A) Cannot be combined

B) can be Common to more than one signal if they are conflicting in nature

C) can be Common to more than one signal if they have common controlling track circuit

D) Both B & C

25. On Single line, Home and opposite Advance Starter signals (B)

A) TSRs cannot be combined

B) TSR Can be common

C) Advance starter don't have TSR

D) Home signal don't have TSR

26. Starter signal and shunt below it (B)

A) TSRs cannot be combined

B) Can be common

C) Advance starter don't have TSR

D) Home signal don't have TSR

27. Identify false statement (C)

A) When a signal is controlled by more than one agency it cannot be taken OFF unless consent from other agencies is obtained

B) slot will be transmitted from one cabin to other cabin, only when points correctly set

C) With one slot we can receive multiple trains

D) Home signal and CO-ON having separate slots

28. Identify false statement (C)

A) When shunt signal is provided on a separate post it displays ON and OFF aspects

B) When shunt signal provided below a stop signal it displays OFF aspect only

C) When shunt signal provided below a stop signal it displays ON and OFF aspects

D) For clearing shunt signal Points in the route only, Isolation points not compulsory

29. Maximum number of routes which can be indicated by using Stencil type route indicator is _____ (C)

A) 2 B) 3 C) 4 D) 5

30. Visibility of _____ indicator is very poor. (A)

A) Stencil type route indicator

B) Multi lamp type route indicator

C) Junction Type Route Indicator

D) Both multi & Junction Type Route Indicator

31. Multi lamp route indicator _____ (C)

A) first type consisting of 35 lamps

B) Second type consisting of 49 lamps

C) Both A&B

D) consisting 64 lamps

32. Multi lamp route indicator with 35 lamps _____ (B)

A) can exhibit any letters and numerals up to 19

B) can exhibit any letters and numerals up to 9

C) can exhibit any letters and numerals up to 49

D) can exhibit 4 letters and numerals up to 9

33. Multi lamp route indicator with 49 lamps _____ (A)

A) can exhibit any letters and numerals up to 19

B) can exhibit any letters and numerals up to 9

C) can exhibit any letters and numerals up to 49

D) can exhibit 4 letters and numerals up to 9

34. ____called as position light type route indicators or direction type route indicator (C)

A) stencil type route indicator

B) Multi lamp type route indicator

C) junction Type Route Indicator

D) Both multi & Stencil Type Route Indicator

35. When train receiving to main line route indicator will not displayed in (C)

A) stencil type route indicator

B) Multi lamp type route indicator

C) junction Type Route Indicator

D) Both multi & Stencil Type Route Indicator

36. King lever is used to_____ (C)

A) Convert Manual signal to Auto signal

B) Convert Auto signal to Manual signal

C) Both A &B

D) Auto operation of points in case track circuit failed

37. In Semi automatic Signalling In TSR circuit Signal lever Normal Band contacts bridged with _____ contact to reclear signal automatically (B)

A) King Lever Normal band

B) King Lever Reverse band

C) Both King lever Normal & Reverse band

D) king Levers Neither Normal Nor Reverse bands

38. Identify False statement (B)

A) When Auto signalling in operation 'A' marker light lits

B) when manual signalling in operation 'A' marker light lits

C) King Lever Reverse contact is made use of in lighting up the "A" marker lamps

D) when manual signalling in operation 'A' marker light not lits

39. Identify False statement (B)

A) For energising relay single cutting is used, Single fault can cause the relay to pick up

B) For energising relay double cutting is used, Single fault can cause the relay to pick up

C) For energising relay double cutting is used, double fault can cause the relay to pick up

D) Cross protection is used to prevent the energisation of relay in case double side fault.

40. Junction type Route Indicator lits _____ (B)

A) for all the lines

B) only for Loop lines

C) only for Main line

D) only for starter signals

41. Signal with Multi Lamp type Route indicator_____ (A)

A) Lits prior to main aspect is not necessary

B) Lits prior to main aspect is necessary

C) Lits after litting a marker

D) Lits prior to litting a marker

42. In TSR circuit TSR stick contact is bye passed with _____ contact (C)

A) TPR pickup B) TPR pick up & knob

C) Knob D) TPR Drop contact

43. IN HR circuit TSR _____contact used

A) Front B) Back

C) Both front & back D) Neither Front nor back

Chapter-2 : Electrical Lockings on Points and Signal Levers

1. In Electro- Mechanical signalling Lock bar function replaced by _____ (B)
   A) Indication locking
   B) Track locking
   C) fouling bar
   D) Signal lever

2. Signal Indication locking is Effective in _____ (B)
   A) Mechanical Interlocking
   B) Electro-Mechanical Interlocking
   C) Both in Mechanical & Electro-Mechanical Interlocking
   D) Neither Mechanical Nor Electro-Mechanical interlocking

3. Point Indication Locking is effective in _____ (B)
   A) Mechanical Interlocking
   B) Electro-Mechanical Interlocking
   C) Both in Mechanical & Electro-Mechanical Interlocking
   D) Neither Mechanical Nor Electro-Mechanical interlocking

4. Points Track Locking is effective in _____ (B)
   A) Mechanical Interlocking
   B) Electro-Mechanical Interlocking
   C) Both in Mechanical & Electro-Mechanical Interlocking
   D) Neither Mechanical Nor Electro-Mechanical interlocking

5. Electrical locking of levers is effective in _____ (B)
   A) Mechanical Interlocking
   B) Electro-Mechanical Interlocking
   C) Both in Mechanical & Electro-Mechanical Interlocking
   D) Neither Mechanical Nor Electro-Mechanical interlocking

6. Track locking is defined in _____ (A)
   A) B.S.I.Spec.No.719-l936
   B) B.S.I.Spec.T19-1936
   C) B.S.I.Spec.No.719-l936
   D) B.S.I.Spec.No.619-l936

7. In Mechanical interlocking, track locking is effective on _____ (D)
   A) Point Lever controlling point machine
   B) Lock lever
   C) Fouling bar lever
   D) All the above

8. In Relay interlocking track locking is achieved at _____ (D)
   A) Point initiation
   B) point control
   C) point operation level
   D) All the above

9. Point zone track circuit occupied by train point cannot be operated this locking is called _____ (D)
   A) Indication locking
   B) Back locking
   C) Approach locking
   D) Track locking

10. In Electro- Mechanical Interlocking _____ (D)
   A) Lock bars are proved for locking points
   B) Lock bars are not provided
   C) Track circuits are provided for locking point
   D) B&C

11. In Electro- Mechanical interlocking Track locking provided _____ (C)
   A) for point Reverse to Normal operation
   B) for point Normal to Reverse operation
   C) A&B
   D) Not provided

12. In Electro- Mechanical Interlocking, when point operating from reverse to Normal Track locking is Effective at _____ position of lever (C)
   A) B
   B) D
   C) E
   D) C

13. Identify the False statement (A)
   A) When Track centres are more than 15’ 6” (New work 17’ 38”) - fouling protection by track locking is necessary
   B) When Track centres are less than 15’ 6” (New work 17’ 38”) - fouling protection by track locking is necessary
   C) In case of cross over points, where two/three controlling track circuits are provided, all the track circuits are to be proved in track locking
   D) Track locking is provided on point lever such that the lever cannot be operated either from N to R or from R to N when the point zone track circuit is occupied by train

14. In Electro- Mechanical Interlocking track locking provided on _____ (B)

A) Point Lever only

B) point lever or Lock lever

C) signal lever only

D) Signal lever or Lock lever

15. Indication locking is defined in _____ (B)

A) B.S.I.Spec.No.719-l936

B) B.S.I.Spec.T19-1936

C) B.S.I.Spec.No.719-l936

D) B.S.I.Spec.No.619-l936

16. An arrangement to prevent the full stroke of a lever in an interlocking frame until such time as the apparatus controlled by that lever has completed its movement. This locking is called _____ (A)

A) Indication locking

B) Back locking

C) Approach locking

D) Track locking

17. Identify the false statement _____ (B)

A) Indication locking will be provided where there is no rigid connection between the lever and its function

B) Indication locking will be provided where there is rigid connection between the lever and its function

C) Indication locking purpose prevent out of correspondence between function position at site and control of that function

D) Indication locking is defined in B.S.I.Spec.T19-1936

18. In Relay Interlocking indication locking checked at _____circuit (C)

A) UYR

B) UCR

C) ASR

D) HR

19. In Electro- Mechanical interlocking Indication Locking is provided on _____ (C)

A) Signal Lever

B) Point Lever

C) Both Signal & Point Lever

D) Neither Signal Nor Point Lever

20. The indication locking for point is effective at __ position for reverse to normal operation (A)

A) B

B) C

C) D

D) E

21. When combined Track and indication locking circuits are used separate _____ and _____ spot contact should be used instead of one _____ contact; otherwise, the indication locking may not function. (C)

A) A and B, AB

B) B and D, BD

C) A and E, AE

D) B and C, BC

22. In Electro- Mechanical interlocking indication locking for signal is effective at _____ position (A)

A) B

B) C

C) D

E) E

24 .In indication locking circuit of motor operated Semaphore Signal, ON aspect of signal is proved by _____ degree of arm contact. (A)

A) 0 to 5

B) 5 to 10

C) 80 to 90

D) 80 to 85

25. In eletrical interlocking, in the indication locking of first stop signal _____ contacts used (B)

A) First stop signal ON aspect pick up or OFF aspect drop contacts only

B) Both First stop signal & distant signal ON aspect pick up or OFF aspect drop

C) distant signal ON aspect pick up or OFF aspect drop contacts only

D) Both First stop signal & ahead signal ON aspect pick up or OFF aspect drop contacts

26._____ locking is provided on the signal lever to prevent the lever from going to normal position in the face of an approaching train (C)

A) Indication locking

B) Back locking

C) Approach locking

D) Track locking

27. In Electro- mechanical interlocking on Signal lever _____ lockings are provided (A)

A) Indication & Approach lockings

B) Approach & track lockings

C) Indication & track lockings

D) Indication, Approach & track lockings

28. Approach locking is effective _____ position of signal lever (B)

A) A

B) B

C) C

D) E

29. Approach track circuits are proved in _____ circuit to ensure lever cannot be put back to normal when the approach track is occupied (A)

A) Back lock (B) L circuit

B) Indication Locking (ABDE) L

C) Indication Locking (BD) L

D) Indication Locking (AE) L

30. In Back locking Circuit, approach Track circuits & TSR contact Bridged with_____ Contacts (D)

A) Sequential proving relays (UYR) pick up & TSR Drop contacts

B) Emergency cancellation relay (JR) pickup

C) Sequential proving relays (UYR) pick up & TSR pickup contacts

D) Both A & B

31. For ensuring time delay in Electro-Mechanical interlocking _____ relays used (D)

A) AC vane driven clock type

B) Thermal type

C) Electronic type

D) All the above

32. In Electro mechanical when electronic timers are used for time delay, they are worked in _____ and their outputs are proved in _____ to prevent premature release in the event of failure of any one of the timers. (B)

A) parallel, parallel

B) Parallel, series

C) Both series

D) Series, series

33. After the train passes the signal, it shall not be possible for cabin man/SM to alter the route unless the train clears the entire route. This locking is called as (B)

A) Approach locking

B) Back locking or route locking

C) Track locking

D) Indication locking

34. In Electro- mechanical interlocking at signal lever B position _____ lockings are provided (D)

A) Approach B) Back

C) Indication D) All the above

35. For designing sequential proving circuit, Minimum _____ No of track circuits in succession is considered to avoid premature route release. (B)

A) ONE

B) Two

C) Three

D) Four

36. Identify false statement (B)

A) Once the route is released, all the UYR's energized during train movement drops

B) Once the route is released, all the UYRs picks up

C) All UYRs back contacts proved in signal clearance circuit

D) UYRs once picked up, Kept in energised condition by stick path till the Route is released

37. Sectional route release adopted in_____ (A)

A) Bigger yards

B) Small yards

C) All Yards

D) IN PI

38. In Sectional Route release first sub route will be controlled by _____ (A)

A) Back lock (B) L circuit

B) ULSR

C) TSR

D) UYR

39. In Sectional Route release , after releasing first next sub routes will be controlled by _____ (B)

A) Back lock (B) L circuit

B) ULSR

C) TSR

D) UYR

40. Sequential Proving Relays_____ (B)

A) Normally pick up, drops when train arrived sequentially

B) Normally drop, Picks up when train arrived sequentially

C) Normally pick up, drops when train arrived sequentially

D) Normally drop, Picks up after route releasing

41. For clearing signal ahead signal should not blank. This applies to _____ (D)

A) Home signal only

B) Calling on signal only

C) Starter signal

D) All the signal except calling on

42. In Electro- mechanical once sequential proving relays (UYRs) picked up stick through its own contact till _____ (B)

A) Signal lever is reversed

B) Signal lever is normal

C) Point lever is normalised

D) Both Point and signal lever is normalised.

42. In Electro- Mechanical for cancellation of signal ,signal lever should be kept _____ position for Energisation of JR relay

A) N

B) R

C) B

D) A

Chapter-3 : Selection/Control Table

1. Identify the False statement (D)

   A) Approach track circuit length for Home signal is Normal Breaking Distance + Reaction Distance

   B) Approach track circuit length for Loop line Starters is Berthing Tracks

   C) Approach track circuit length for Shunt signal is the tracks from which train is expected to start

   D) Approach track circuit length for Main line Starters is Berthing Tracks only

2. Identify the False statement (B)

   A) For Red lamp protection ahead signal Aspect conditions proved in signal control circuit

   B) The Calling on Track circuit of home signal can be used as Approach track circuit

   C) The Loop line starter signal berthing track used as Approach track circuit

   D) For shunt signal Control and back lock track circuits are same.

3. Cancellation time for Advance starter is _____ (A)

   A) 0 sec

   B) 60 sec

   C) 120 sec

   D) 180 sec

4. Identify False statement _____ (A)

   A) CO-ON Provided with Approach Locking

   B) CO-ON Provided with Dead Approach Locking

   C) CO-ON signal cancellation time is 240 sec

   D) In CO-ON signal overlap points are not proved

5. Identify TRUE statement _____ (A)

   A) For shunt signal Control and back lock track circuits are same

   B) For starter signal Control and back lock track circuits are same

   C) For CO-ON signal Control and back lock track circuits are same

   D) In CO-ON signal overlap points are proved

Chapter-4 : Crank handle, Siding control circuits and Calling ON Signal

1. Crank handle IN circuit (CHLR) _____ contacts of economiser push buttons used. (A)
   A) NC
   B) NO
   C) Both NO & NC
   D) Neither NO Nor NC

2. Crank handle EKT coil circuit _____ contacts of economiser push buttons used. (B)
   A) NC
   B) NO
   C) Both NO & NC
   D) Neither NO Nor NC

3. Crank handle EKT coil circuit _____ contacts of economiser push buttons used. (B)
   A) CHLR front
   B) CHLR back
   C) Both CHLR front & back
   D) UCR front & ASR back

4. Crank handle provided for_____ (A)
   A) Operation of Electrically operated points
   B) operation of Mechanically operated point
   C) for operation of Both Electrical & Mechanical points
   D) for operation of mechanically operated siding points

5. Identify TRUE statement (C)
   A) Each and Every point have one crank handle
   B) Only one common crank handle provided for all the points
   C) Crank handles are grouped to achieve optimum flexibility
   D) crank handle can be extracted from EKT after clearing the signal

6. Siding YR can be Energised _____ (D)
   A) When all the signals are at ON
   B) Concern signals are at ON
   C) Concern siding lever is at reverse
   D) Both B & C

7. Calling on signal is used to _____ (D)
   A) Receive the train on occupied line
   B) Receive the train when overlap point is failed
   C) Signal in advance is blank
   D) All the above

8. NPR Relay picks up ensures_____ (D)
   A) Siding point at outdoor set to Normal
   B) Siding point KEY is IN
   C) siding point knob in Normal
   D) All the above

9. Identify False statement (B)
   A) for clearing CO-ON signal all the points in the route including isolation are required
   B) for clearing CO-ON signal track circuit conditions are not required
   C) for clearing CO-ON signal, signal in advance should not take off
   D) for clearing CO-ON signal LC gate in the route required

10. Identify False statement (D)
    A) for clearing CO-ON signal LC gate in the route required
    B) for clearing CO-ON signal, signal in advance should not take off
    C) for clearing CO-ON signal all the points in the route including isolation are required
    D) CO-ON signal can be clear before Train arriving to signal

11. For Calling on HR _____contacts used for cross protection (B)
    A) UCR Front
    B) UCR Back
    C) ASR Back
    D) TSR Front

12. for clearing calling on signal _____track circuits are required (B)
    A) Back lock
    B) CO-ON
    C) Overlap
    D) Berthing

Chapter-5 : Indication Circuits

1. Track red Indication appears _____ (D)
   A) When track is free
   B) When track is occupied
   C) When track is failed
   D) B & C

2. _____type of Track indications are provided on illumination diagram above the lever frame in cabins (A)
   A) spot light
   B) strip
   C) luminous
   D) B & C

3. _____type of Track indications are provided on PI & RRI type panel (B)
   A) spot light
   B) strip
   C) luminous
   D) B & C

4. _____type of point indications are provided in the cabins above the respective Lever (C)
   A) spot light
   B) strip
   C) luminous
   D) B & C

5. On panel white Track circuit indications appears when _____ (A)
   A) concern Track is pickup and signal route is initiated
   B) concern track is occupied
   C) when track is pickup
   D) concern Track is pickup and signal route is not initiated

Objective Questions

CHAPTER-1 : Introduction to Relay Interlocking

1. Conflicting signal-to-signal locking is proved in at least _____ stages

A) One B) Two C) Three D) Four

(ANS: B)

2. In Electrical or relay interlocking, the interlocking is checked at _____ stages

A) UCR B) ASR C) HR D) A & C

(ANS: D)

3. Types of relay interlocking are_____

A) PI & Non-Route setting B) RRI & Route setting

C) Route setting & Non-Route D) Entry & Exist

(ANS: C)

4. Route setting Type Interlocking is also called as_____

A) RRI B) Entry & Exist C) Both A &B D)PI

(ANS: C)

5. Non-Route setting Type provided in _____Stations

A) Small and Way side Single line B) Small and Way side double line

C) Both A & B D) Major

(ANS: C)

6. Route setting Type provided in _____Stations

A) Small and Way side Single line B) Small and Way side double line

C) Both A & B D) Major

(ANS: D)

7. In Mechanical Interlocking, Interlocking checked at_____

A) Locking Tray of Lever Frame B) Near Functions With mechanical detectors

C) Both A & B D) By Means of Electrical controls on the funct

(ANS:C)

8. In Electro-Mechanical Interlocking, Interlocking checked at_____

A) Locking Tray of Lever Frame

B) Near Functions With mechanical detectors

C) By Means of Electrical controls on the function

D) Both A & C

(ANS: D)

9. In the Panel Interlocking to TAKE OFF a signal _____Points has to operate manually

A) Points in the Route B) Points in the overlap

C) Isolation points D) All the above

(ANS:D)

10. In the Route setting type Interlocking to TAKE OFF a signal _____Points has to operate manually

A) Points in the Rote B) Points in the overlap

C) Isolation points D) Manual operation not required

(ANS: D)

11. Advantages of Electrical Interlocking is

A) Easy Installation and Maintenance B) Quick and Efficient Operation

C) No Overhauling Procedures D) All the above

(ANS: D)

12. Route Buttons are_____

A) Compulsory in PI B) optional in RRI

C) Compulsory in RRI D) Both A & B

(ANS:C)

13. In Non- Route setting Type interlocking, points _____

A) Points has to operate manually before clearing signal

B) Points automatically operates to required position when signal is initiated

C) Both A & B

D) Operate points in the route only

(ANS: A)

14. In Route setting Type interlocking points _____

A) Has to operate manually before clearing signal

B) Points automatically operates to required position when signal is initiated

C) Both A & B

D) Operate points in the route only

(ANS: B)

15. Colour Light signalling is_____

A) Compulsory in PI B) Compulsory in RRI C) Optional in PI D) B&C

(ANS: D)

16. Sectional Route Release is_____

A) Compulsory in PI B) Compulsory in RRI C) Optional in PI D) B&C

(ANS: D)

17. Point Knobs used in RRI have_____ positions

A) TWO B) Three C) Both A & B D) Four

(ANS: B)

18. Point Knobs used in PI have_____ positions

A) TWO B) Three C) Both A&B D) Four

(ANA: A)

19. Point knob used in RRI having _____positions

A) 'N' B) 'R' C) 'C' D) All the above

(ANS: D)

20. In Domino Type Panel, Dominos size used is

A) 63X38 mm B) 54X34 mm C) 63X34 mm D) Both A&B

(ANS: D)

21. When Track circuit is clear, route is not set & not locked Track indication on panel is_____

A) White B) RED C) No Indication D) Green

(ANS: C)

22. When Track circuit is clear, route is set & locked Track indication on panel is_____

A) White B) RED C) No Indication D) Green

(ANS: A)

23. When Track is occupied or failed, Track indication on panel is_____

A) White B) RED C) Yellow D) Green

(ANS: B)

24. In PI when point is set to Normal & Locked point Indication near the knob is _____

A) Yellow B) Green C) Red D) white

(ANS: A)

25. In PI when point is set to Reverse & Locked point Indication near the knob is _____

A) Yellow B) Green C) Red D) white

(ANS: B)

26. When Siding point is in Normal & locked Indication on panel is _____

A) Yellow B) Green C) Red D) No Light

(ANS: A)

27. When Siding point is taken out Indication on panel is _____

A) Yellow B) Green C) Red D) No Light

(ANS: D)

28. When signal is not taken' OFF' , Signal Route indicator on panel is_____

A) White B) No Indication C) Red D) Green

(ANS: B)

29. When signal is taken' OFF' to Loop line , Signal Route indicator on panel is_____

A) White B) No Indication C) Red D) Green

(ANS: A)

30. Shunt signal below a stop signal when not taken 'OFF' shunt signal indication on panel is_____

A)No Indication B)two white lights diagonal

C)two white lights horizontal D) Yellow

(ANS:A)

31. Shunt signal below a stop signal when taken ‘OFF’ shunt signal indication on panel is_____

A) No Indication B) two white lights diagonal

C) two white lights horizontal D) Yellow

(ANS:B)

32. Shunt signal on a separate post when not taken ‘OFF’ shunt signal indication on panel is_____

A) No Indication B) two white lights diagonal

C) two white lights horizontal D) Yellow

(ANS:C)

33. Shunt signal on a separate post when taken ‘OFF’ shunt signal indication on panel is_____

A) No Indication B) two white lights diagonal

C) two white lights horizontal D) Yellow

(ANS:C)

34.CO-ON signal ‘ON’ indication on panel is_____

A) No indication B) miniature Yellow

C) two white lights horizontal D) two white lights diagonal

(ANS:A)

35. CO-ON signal ‘OFF’ indication on panel is_____

A) No indication B) miniature Yellow

C) two white lights horizontal D)two white lights diagonal

(ANS:B)

36. Main signal Button colour is_____

A) Red B) Red with white dot C) Blue D) Grey

(ANS:A)

37. Calling on signal initiation Button colour is _____

A) Red B) Red with white dot C) Blue D) Grey

(ANS:A)

38. CO-ON signal Button colour is_____

A) Red B) Red with white dot C) Blue D) Grey

(ANS:B)

39. Shunt signal Button colour is _____

A) Red B) Yellow C) Blue D) Grey

(ANS:B)

40. Route Button colour is _____

A) Red B) Yellow C) Blue D) Grey

(ANS:D)

41. Emergency Full Route Cancellation Button colour is _____

A) Red B) Yellow C) Blue D) Grey

(ANS:D)

42. Crank Handle Button colour is _____

A) Red B) Yellow C) Blue D) grey

(ANS:C)

43. Crank Handle is IN & locked, Indication on panel is_____

A) Red B) Yellow C) Green D) grey

(ANS:C)

44. Crank Handle is OUT, Indication on panel is_____

A) Red B) Yellow C) Green D) No Indication

(ANS:A)

45. Crank Handle is Free, Indication on panel is_____

A) Red B) Yellow C) white D) No indication

(ANS:C)

CHAPTER-2 : Sequence of Operations on Panel

1. LC Gate Knobs used in PI having_____ positions

   A) single B)two C)Three D)Four (ANS:B)

2. 3 position point knobs used in_____

   A) PI B)RRI C)PI & RRI D) Not used in PI&RRI (ANS:B)

3. Signal Knobs used in PI having_____ positions

   A) single B) two C) Three D) Four (ANS:B)

4. Signal Knobs used in RRI having_____ positions

   A) single B) two C) Three D) Four (ANS:B)

5. Before operating point in _____ Conditions has to be ensure

   A) SMKEY IN

   B) Point is not locked under any Route

   C) Points Crank Handle is in and Point Track is clear

   D) All the above (ANS:D)

6. In PI Signal knob will be Reversed _____

   A) After operating the points to required position

   B) Before operating the points to required position

   C) Before or After operating the points to required position

   D) After operating the points to required position & ensuring conflicting signals not taken (ANS:D)

7. In PI UCR relay Picks up when _____

   A) signal RR is picked UP and all the points in the route is set

   B) signal RR is picked UP and ASR in drop condition

   C) Signal RR in Drop and OVSR in drop condition

   D) Signal RR in Drop and ASR in Drop condition (ANS:A)

8. UCR is the _____

   A) Route Locking Relay B) Route Checking Relay

   C) Route checking & Route locking Relay D) Route Free Relay (ANS:A)

9. After Picking of UCR_____

   A) ASR picks up

   B) OVSR picks up

   C) ASR drops and dropping of ASR causes OVSR to drop.

   D) RR Picks (ANS:C)

10. When ASR drops_____

A) locks all the points in Route

B) all the points in the Route will be free

C) locks all the overlap points only

D) all the overlap points will be free (ANS:A)

11. When OVSR drops_____

A) locks all the points in Route

B) all the points in the Route will be free

C) locks all the overlap points only

D) all the overlap points will be free (ANS:C)

12. HR picks up after_____

A) picking RR ,UCR and dropping ASR

B) picking RR, UCR and ASR

C) picking RR and dropping UCR &ASR

D) picking RR& ASR and dropping UCR (ANS:A)

13. Setting of Route, locking of route and clearance of the signal are done simultaneously at the same time in_____

A) PI

B) RRI

C) Both PI &RRI

D) Mechanical & Electro-Mechanical interlocking also (ANS:B)

14. In RRI for clearing the signal_____ used

A) signal button alone

B) Route button alone

C) Both signal &Route buttons

D) Both signal &point buttons (ANS:C)

15. Manual/Individual point operation is available in_____

A) PI B) RRI C) PI&RRI D) Neither PI Nor RRI

(ANS:C)

16. In RRI Point knob kept in _____position for auto operation

A) Normal B) center C) Reverse D) Normal or Reverse

(ANS:B)

17. In RRI if Point knob kept in ‘Center ‘position

A) NC & RC Make, N&R Break

B) N& NC Make, R&RC &C Break

C) R& RC Make, N&NC&C Break

D) N& R Make, NC&RC&C Break (ANS:A)

18. In RRI if Point knob kept in ‘Normal ‘position

A) NC & RC Make, N&R Break

B) N& NC Make, R&RC &C Break

C) R& RC Make, N&NC&C Break

D) N& R Make, NC&RC&C Break (ANS:B)

19.In RRI if Point knob kept in ‘Reverse ‘position

A) NC & RC Make, N&R Break

B) N& NC Make, R&RC &C Break

C) R& RC Make, N&NC&C Break

D) N& R Make, NC&RC&C Break (ANS:C)

20. When ASR picks up

A) Route will be released

B) overlap will be released after 120 sec

C) Sequential Route release relays drops

D) All the Above (ANS:D)

21. Crank Handles are _____

A) Used for manual operation of points when Electrical operation failed

B) Interlocked with signals

C) When signal is taken OFF Extraction of Crank handle not possible

D) All the above (ANS:D)

22. In case of Approach Track circuit, if Approach Track circuits are clear and Signal cancellation applied Route will be Released _____

A) Immediately

B) After time delay 120 secs

C) After time delay 240 secs

D) Never (ANS:A)

23. In case of Approach Track circuit, if Approach Track circuits are occupied and Signal cancellation applied Route will be Released _____

A) Immediately

B) After time delay

C) Never

D) With or Without time delay (ANS:B)

24. In case of Dead Approach after applying Signal cancellation applied Route will be Released _____

A) Immediately

B) After time delay

C) Never

D) With or Without time delay (ANS:B)

25. The Length of Approach Track circuit _____

A) Depends upon the Sectional permissible speed

B) Type of the signal

C) Same for all the signals

D) A & B

(ANS:D)

CHAPTER-3 : Signalling Plan-Control Table

1. To ensure signal ahead is not blank in the HR circuit of home signal _____ proved
   A) Ahead signal RECR B) Ahead signal HECR
   C) Ahead signal DECR D) All the aspects of Ahead signal
   (ANS:D)

2. In the CO-ON Signal control circuit _____
   A) points in the route including isolation must be proved
   B) All the isolation points including overlap must be proved
   C) route and overlap points including isolation are required
   D) Overlap portion must be proved (ANS:A)

3. Home Signal Controlled by _____ track circuits.
   A) Route B) Berthing C) Overlap D) All the above
   (ANS:D)

4. Calling on signal controlled by _____track circuits.
   A) Route B) Berthing C) CO-ON D) Overlap
   (ANS:C)

5. In the Home Signal Control circuit _____ points are proved
   A) Route B) isolation C) Overlap D) All the above
   (ANS:D)

6. In the CO-ON Signal Control circuit _____ points are proved
   A) Route B) isolation C) Overlap D) A&B
   (ANS:D)

7. Shunt signal controlled by _____ track circuits.
   A) All the track circuits from Shunt signal to berthing track including berthing track
   B) All the track circuits from Shunt signal to berthing track excluding berthing track
   C) All the track circuits from Shunt signal to overlap.
   D) Track circuits need not proved (ANS:B)

8. Approach locking for loop line starter is _____
   A) Loop Line berthing track alone
   B) Loop Line berthing track & Home signal condition
   C) Loop Line berthing track & ahead signal condition
   D) Dead Approach (ANS:A)

9. Approach locking for Main line starter is _____
   A) Loop Line berthing track alone
   B) Loop Line berthing track & Home signal condition
   C) Loop Line berthing track & ahead signal condition
   D) Dead Approach (ANS:B)

10. Approach locking for Shunt Signal is _____

A) Shunt signal berthing track alone

B) shunt Signal berthing track & Rear signal condition

C) Loop Line berthing track & ahead signal condition

D) Dead Approach (ANS:A)

11. Approach locking for CO-ON signal is _____

A) CO-ON Track

B) Track circuit in Approach of signal irrespective of length

C) Track circuit in Approach of signal with length of Normal breaking distance

D) Dead Approach (ANS:D)

12. The CO signal locks_____

A) Home signal on the same post

B) Ahead starter signal

C) A&B

D) other side CO-ON signal to the same & different routes (ANS:C)

13. In panel interlocking, the CO signal cancellation time is _____

A) 60 sec

B) 120 sec

C) 180 sec

D) 240 sec (ANS:D)

14. Level crossing gate Cancellation time is _____

A) 60 sec

B) 120 sec

C) 180 sec

D) 240 sec (ANS:B)

15. Home signal DG aspect controlled by_____

A) Mainline starter signal DG

B) Mainline & Loop line starter signal DG

C) Distant signal DG

D) B&C (ANS:A)

16. For clearing calling on signal_____

A) route indicator has to lit for main line and loop line

B) route indicator has to lit for main line and not required for loop line

C) route indicator not required

D) route indicator has to lit for loop line and not required for main line (ANS:B)

17. For preparation of Signalling circuits input are_____

A) Approved signalling plan

B) TOC/RCC/ST

C) Panel Diagram

D) All the above (ANS:D)

CHAPTER-4 : Nomenclature of Relays & Circuits

1. SMR is_____
   A) Normally Pickup
   B) It picks up when SM key inserted in panel
   C) It drops when SM key is taken out from panel
   D) All the Above (ANS:D)

2. When SM Key is OUT _____
   A) Points can be operated from panel
   B) Signal can be cleared
   C) Signal can be put back to ON position
   D) Signal can be put back to ON position and Route can be released (ANS:C)

3. Identify the false statement_____
   A) SMR contact proved in WNR circuit
   B) SMR contact proved in GNR circuit
   C) SMR contact proved in UNR circuit
   D) SMR contact proved in LXNR circuit (ANS:B)

4. One signal one train movement Ensured by_____
   A) UYR
   B) ASR
   C) UYR
   D) TSR (ANS:C)

5._____ circuit Ensures signal is not re-cleared.
   A) signal first controlling Track circuit
   B) TRSR
   C) TLSR
   D) TSR (ANS:D)

6. Pickup contact of TSR Proved in _____circuit
   A) UCR
   B) ASR
   C) HR
   D) WLR (ANS:D)

7. Signal TSR circuit _____
   A) cannot be combined with any other signal
   B) can be combined with other signal leading to different routes
   C) can be combined with signal leading to same route and having common control track ckts
   D) cannot combined with shunt signals (ANS:C)

8. Shunt signal Knob Used in PI having _____

A) single position

B) Two positions

C) Three positions

D) four positions (ANS:B)

9. In Signal RR circuit Knob R band bridged or Bypassed with _____ contact to prevent the unauthorized normalization of signal in case SM key is out.

A) SMCR pickup

B) SMCR drop contact

C) RR pickup

D) RR drop contact (ANS:B)

10. UCR is_____

A) Normally Pickup, drops when signal is initiated

B) Normally drop, picks up when signal is initiated

C) Normally Pickup, drops after clearing the signal

D) Normally drop, picks up after clearing the signal (ANS:B)

11. UCR_____

A) UCR Can be combined for signals leading to same routes

B) UCR Can be combined for signals leading to different routes

C) Each signal have separate UCR

D) starter signal and shunt signal UCR cannot be combined (ANS:C)

12. To achieve the locking of conflicting signals, in the UCR circuit _____ or_____ contact used

A) ASR front, UCR front

B) ASR front, UCR back

C) ASR back, UCR back

D) ASR back, UCR front (ANS:B)

13. In UCR circuit _____ contact used for cross protection and _____contact used for double cutting

A) RR front, RR front

B) RR back, RR back

C) RR Back, RR front

D) RR front, RR back (ANS:C)

14. ASR is_____

A) Normally Pickup, drops after picking HR

B) Normally drop, picks up after picking HR

C) Normally Pickup, drops after picking UCR

D) Normally drop, picks up after picking UCR (ANS:C)

15. In ASR circuit _____ proved

A) UCR front contact

B) UCR back contact

C) Both front and back

D) UCR & HR front contact (ANS:B)

16. In ASR circuit_____

A) Indication and Back locking only proved

B) Back locking and approach locking only proved

C) Indication locking, back locking and Approach locking proved

D) indication locking and Approach locking Proved (ANS:C)

17. Home signal with Approach Track circuit case, Route can be released in how many ways?

A) Two ways

B) Three ways

C) Four ways

D) Five ways (ANS:D)

18. When signal is not taken OFF , any one of the back lock Track circuit fails_____

A) full route will be locked

B) Signal Route will not lock

C) partially Route will lock

D) Locks overlap portion (ANS:B)

19. In HR circuit crank handle _____ contacts proved

A) CHLR up & CHFR down

B) CHLR up & CHFR UP

C) CHLR down & CHFR down

D) CHLR down & CHFR up (ANS:A)

20. To prove that conflicting signal are not taken off _____ contacts used in HR circuit

A) ASR pickup or UCR drop

B) ASR pickup or UCR drop

C) ASR drop or UCR drop

D) ASR DN or UCR up (ANS:A)

21. In HR circuit concern signal _____ contacts are Proved

A) Concern signal RR front, UCR front, ASR front

B) Concern signal RR front, UCR back, ASR front

C) Concern signal RR front, UCR front, ASR back

D) Concern signal RR front, UCR back, ASR back (ANS:C)

22. In HR circuit _____ contacts used for cross protection

A) UCR back or ASR front

B) UCR back or ASR back

C) UCR front or ASR back

D) UCR front or ASR front (ANS:A)

23.In HR circuit _____ contacts used for double cutting

A) UCR front

B) ASR back

C) Both A&B

D) WLR & ASR (ANS:C)

24. Home signal route indicator_____

A) Lit for Main Line, not lit for loop line

B) Lit for main line, loop line

C) Not lit for main line, lit for loop line

D) Neither for (ANS:C)

25. While receiving Train, any back lock track circuit fails _____

A) If normal cancellation applied Signal route will release immediately

B) If normal cancellation applied Signal route will release after time delay

C) CO-ON cancellation or Super Emergency Route release has to apply

D) Normal or CO-ON cancellation both not possible (ANS:C)

26. Distant signal HHG aspect controlled by

A) Home signal HG and ahead signal HG/DG

B) Home signal DG and ahead signal HG/DG

C) Home signal DG and UG

D) Home signal HG only (ANS:D)

27. UYRs are made _____

A) Slow to pickup

B) Slow to release

C) Slow to pick and slow release

D) No slow pick up and slow to release (ANS:B)

28. JSLR are made _____

A) Slow to pickup Slow to release

B) Slow to pick and normal release

C) Slow release only

D) No slow pickup and slow to release (ANS: C)

29. In sequential route release circuit ASR _____ contacts are proved

A) Front

B) Back

C) Both Front and back

D) Neither Front Nor Back (ANS:B)

30. UYRS made slow to release to allow____ Relay to pickup and stick through its own contact

A) JSLR B) ASR C) Both JSLR &ASR D)UCR

(ANS:B)

31. Pickup of all UYRs ensure_____

A) Sequential arrival of train

B) Directional movement

C) Route released

D) Both A&B (ANS:D)

32. ASR stick path bypassed with_____ contacts

A) UCR back contact, Knob, back lock track circuits, UYRs

B) Knob, back lock track circuits, UYRs

C) back lock track circuits, UYR only

D) UCR, back lock track circuits, UYRs (ANS:B)

33. In case of Approach track circuit , if cancellation applied _____

A) Route will be released after time delay if Approach track circuits are occupied

B) Route will be released immediately if Approach track circuits are free

C) In all the cases route will be released after time delay

D) Both A&B (ANS:D)

34. In case of Approach track circuit , if cancellation applied _____

A) Route will be released immediately even though Approach track circuits are occupied

B) Route will be released immediately if Approach track circuits are free

C) In all the cases route will be released after time delay 120 sec

E) In all the cases route will be released after time delay 60 sec (ANS:B)

35. In UYR circuit, ASR_____ contact and TSR _____contact used

A) Front, back

B) Back, front

C) Back, back

D) Front, front (ANS:C)

36. In JSLR circuit _____contacts are used

A) ASR front & NJPR front B) ASR front & NJPR back

C) ASR back & NJPR front D) ASR back & NJPR back (ANS:D)

37. After clearing the home signal Overlap points_____

A) Will be locked till the train clears back lock track circuits

B) Will be locked till the train clears back lock track circuits and ASR picks up

C) Will be locked till the route has been released and time delay of 120 sec completed after releasing the route.

D) Will be released immediately after normalising the knob (ANS:C)

38. Overlap cancellation time is_____

A) 60 sec

B) 120 sec

C) 180 sec

D) 240 sec (ANS:B)

39. Overlap cancellation starts after_____

A) picking of UYR1

B) picking of All UYRs

C) picking Signal ASR and if ahead starter ASR in pickup condition

D) picking Signal ASR and if ahead starter ASR in drop condition (ANS:C)

40. OVSR _____

A) Normally pickup, drops when signal cleared to concern overlap

B) Normally Drop, picks up when signal cleared to concern overlap

C) Normally Drop, picks up after dropping ASR

D) picks up during signal initiation and drops after clearing the signal (ANS:A)

41. For clearing CO-ON signal_____

A) points in the route only required

B) points in the Route including isolation required

C) points in the route and all the isolation points required

D) all the points in the route, overlap including isolation required (ANS:B)

42. WLR relay is_____

A) Normally drop, picks up when point operation initiated and all other conditions are satisfied

B) Normally pickup, drops up when point operation initiated and all other conditions are satisfied

C) Normally drop, picks up after setting the point

D) Normally pick up, drops up after setting the point (ANS:A)

43. In WLR circuit _____ contacts are used to ensure points are not locked under any route

A) ASR front & OVSR back

B) Both ASR & OVSR front

C) Both ASR & OVSR back

D) ASR back & OVSR front (ANS:B)

44. In WLR circuit point zone Track circuit contacts are bridged with _____contacts for ensuring completion of point operation while operating point if track circuit fails.

A) WLR front

B) WLR back

C) WLR & ASR front

D) WLR & ASR back (ANS:A)

45. In WLR circuit NWKR/RWKR back contacts proved to ensure_____

A) To drop WLR Relay after setting point

B) if Already point set to required position, to prevent initiation of point operation

C) Both A&B

D) To check out of correspondence (ANS:C)

46. PCR is _____

A) Heavy duty QBCA1 Relay

B) Heavy duty QECX Relay

C) Normal QNA1 Relay

D) Heavy duty QSPA1 Relay (ANS:A)

47. In NWR circuit _____contacts are used to ensure Dropping of NWR after setting the point to Normal at outdoor location.

A) WNKR front

B) WNKR Back

C) Own front

D) WRKR front (ANS:B)

48. WJR Picks up when_____

A) NWR/RWR pickup and WXR drop

B) NWR/RWR pickup and WXR pick up

C) NWR/RWR drop and WXR drop

D) NWR/RWR drop and WXR pick up (ANS:A)

49. WXR picks up when_____

A) NWR/RWR pickup and WJR drop

B) NWR/RWR pickup and WJR pick up

C) NWR/RWR drop and WJR drop

D) NWR/RWR drop and WJR pick up (ANS:B)

50. In WJR Stick path _____contacts are used to drop WJR after setting the point

A) WNKR &WRKR pickup

B) WNKR &WRKR drop

C) NWKR & RWKR pickup

D) NWKR & RWKR drop (ANS:B)

51. In WCR circuit _____contacts used for cross protection of relay

A) Both NWR & RWR front

B) NWR front & RWR back contact

C) NWR back & RWR front

D) Both NWR & RWR back (ANS:D)

52. In NWKR circuit, WLR back contact bridged with _____contact, this contact is used to ensure correspondence between point detection at site and knob position.

A) NCR drop

B) RCR pickup

C) A&B

D) NCR pickup (ANS:D)

53. Crank handle coil supply extended through _____ contacts

A) Both CHFR & CHLR front

B) CHFR front & CHLR back

C) CHFR back & CHLR front

D) Both CHFR & CHLR back (ANS:B)

54. When Route is divided in to small sub route sections. First sub route controlled by ____

A) ASR

B) TRSR

C) TLSR

D) All the above (ANS:D)

55. CHFR_____

A) Picks up when none of the points in the group are locked under any route

B) Drops when all the points in the group are locked under any route

C) Drops when any of the points in the group are locked under any route

D) both A&C (ANS:D)

56. TLSR_____

A) Normally pickup , Drops when signal movement takes from left to right

B) Normally drop, picks up when signal movement takes from left to right

c) Normally pickup, Drops when signal movement takes from right to left

D) Normally drop, picks up when signal movement takes from right to left (ANS:C)

57. TRSR_____

A) Normally pickup, Drops when signal movement takes from left to right

B) Normally drop, picks up when signal movement takes from left to right

c) Normally pickup, Drops when signal movement takes from right to left

D) Normally drop, picks up when signal movement takes from right to left (ANS:A)

58. NNCR _____

A) Normally drop, Picks up when any button stuck up on panel

B) Normally Pick up, drops when any button stuck up on panel

C) Normally pickup, drops any stuck up button released

D) Normally drop, picks up when any stuck up button released (ANS:B)

59. WLR relay_____

A) When picks up locks the point Electrically

B) When drop locks the point Electrically

C) When picks up locks the point Mechanically

D) When drop locks the point Mechanically (ANS:B)

60. The GECR relay _____

A) Normally drop, picks up when any one of the signal aspect fails

B) Normally drop, picks up when all the signal aspects fails

C) Remains in pickup when any one of the aspects is burning in the signal

D) both B&C (ANS:C)

CHAPTER-5 : Route Setting type Relay Interlocking (RRI)

1. In GNR circuit, SMR _____ contacts proved
   A) front
   B) Back
   C) Both front and back
   D) Neither front Nor back

(ANS:D)

2. GNCR _____
   A) Normally pickup
   B) Normally drop
   C) picks up when GN button is pressed
   D) Picks up when GN & UN button pressed

(ANS:A)

3. When GN button pressed _____
   A) Both GNR & GNCR relays picks up
   B) GNR picks up & GNCR drops
   C) GNR drops & GNCR picks up
   D) GNR drops & GNCR drops

(ANS:B)

4. In GNR Circuit _____contacts proved
   A) WNCR pickup & UNCR Drop
   B) WNCR pickup & UNCR pickup
   C) WNCR drop
   D) Both GNCR & WNCR pickup

(ANS:C)

5. UNR Circuit _____contacts proved
   A) SMR pickup & WNCR Drop
   B) Both SMR & WNCR Pickup
   C) GNCR pickup & WNCR pickup
   D) GNCR pickup & WNCR Drop

(ANS:B)

6. WNR circuit_____ contacts proved
   A) GNCR pickup & WNCR drop
   B) Both GNCR & UNCR pickup
   C) Both GNCR & WNCR pickup
   D) GNCR pickup & UNCR drop

(ANS:B)

7. Slot transmission button Relay Nomenclature is_____

A) GSNBR

B) GSBRNR

C) GSRBNR

D) GSBNR (ANS:D)

8. Slot Receive Button Nomenclature is

A) GSNBR

B) GSBRNR

C) GSRBNR

D) GSBNR (ANS:C)

9. In GSBNR circuit _____contacts proved

A) Both SMR & UNCR pickup

B) Both SMR & WNCR pickup

C) Both SMR & GNCR pick up

D) Both SMR & GSRBNR pickup (ANS:C)

10. In EGGNR circuit SMKEY_____ contact proved

A) Front

B) Back

C) Both Front & Back

D) Neither front Nor Back (ANS:A)

11. IN RRI _____

A) RR will be used for all the signals

B) RR will be used for Reception signals only

C) RR will be used for Main line signal only

D) RR will be used for Shunt signals (ANS:B)

12. IN RR circuit _____contacts used to drop RR relay automatically when Train receiving

A) ASR front

B) ASR Back

C) UYR front

D) UYR Back (ANS:D)

13. NRR_____

A) Normally drop, Picks up when GN & WN pressed

B) Normally drop, Picks up when GN & UN pressed

C) Normally Pickup, Drops when GN & UN pressed

D) Normally Pickup, Drops when GN & WN pressed (ANS:B)

14. The Moment NRR picks up _____
    A) concern NNR drops
    B) Initiates point operation
    C) picks up RR
    D) Both A&B (ANS:D)

15. NRR Drops when_____
    A) Signal cancellation initiated
    B) Train travelled on set route and ASR already pickup
    C) Train travelled on set route and UYRs pickup
    D) A &C (ANS:D)

16. In Block release circuit _____ contacts used
    A) RR
    B) NRR
    C) NNR
    D) NRR & NNR (ANS:A)

17. NNR is _____
    A) Normally Drop, Picks up after initiating the signal
    B) Normally Pick up, Drops after initiating the signal
    C) Picks up after picking RR
    D) Normally Pickup, Drops after dropping ASR (ANS:B)

18. NNR picks up when _____
    A) Both NRR & ASR picked up
    B) NRR drop and ASR picked up
    C) NRR Pickup and ASR pickup
    D) Both NRR & ASR Drop (ANS:B)

19. IN NRR circuit _____contacts used for cross protection of relay
    A) Both RR & NRPR front
    B) RR front & NRPR back
    C) RR back & NRPR front
    D) Both RR & NRPR back (ANS:D)

20. IN NLR circuit NWKR _____contact used to ensure_____
    A) Back, if already point set to normal prevent the initiation of point operation
    B) Front, if already point set to normal prevent the initiation of point operation
    C) Back, to operate point to normal
    D) Front, to operate point to Reverse (ANS:A)

21. IN NLR circuit NWKR _____contact used to ensure_____

A) Front, if already point set to normal prevent the initiation of point operation

B) Back , to drop NLR after setting the point to normal

C) Back, to operate point to normal

D) Front, to operate point to Reverse (ANS:B)

22. In NWLR circuit _____contact used to ensure_____

A) NWKR back contact, if already point set to normal prevent the initiation of point operation

B) NWKR Front contact, if already point set to normal prevent the initiation of point operation

C) RWKR front, to drop NWLR after setting the point to normal

D) RWKR back, to drop NWLR after setting the point to normal (ANS:A)

23. Identify False statement

A) ASWR normally drop

B) ASWR Picks up when NWLR/ RWLR pick up & NCR/RCR drop

C) ASWR Picks up when NWLR/ RWLR pick up & NCR/RCR Pick up

D) ASWR Drops after picking NCR/RCR (ANS:C)

24. Identify false statement

A) AS1WR made slow to release

B) AS1WR picks up if all points required point operation

C) AS1WR pick up if any point required operation

D) AS2WR back contact used in AS1WR circuit (ANS:B)

25. In WWFR Circuit last point in the chain group WWR contact is bridged with _____ contact to ensure completion of point operation

A) AS2WR pickup

B) AS1WR pickup

C) Concern ASWR pickup

D) WWFR Pickup (ANS:C)

26. AS2WR picks up_____

A) when AS1WR drop and WWFR pick up

B) Both AS1WR & WWFR drop

C) when AS1WR pickup and WWFR drop

D) Both AS1WR & WWFR pick up (ANS:D)

27. In RRI Auto chain operation case identify false statement_____

A) When NCR picks up concern ASWR picks up

B) picking of NCR drops concern ASWR

C) once NCR picks up sticks through own contact until next operation initiated

D) NCR picks up in both Auto &manual individual point operation (ANS:A)

28. Emergency point operation can be_____

A) possible when Track is clear also

B) possible when point is locked under route and point zone track circuits are occupied

C) Possible when point is locked under any route and point zone track circuits are clear

D) Possible when point is not locked under any route and point zone track circuits are occupied (ANS:A)

29. Track Locking is proved in _____circuit

A) NWLR & RWLR

B) NCR/RCR

C) NLR/RLR

D) Both B&C (ANS:A)

30. With the help of one front contact maximum _____ No of repeater relays can be energized

A) Two

B) Three

C) Four

D) Six (ANS:B)

31. When Train Arrives to berthing track and stops at the foot of the starter

A) Overlap releases immediately

B) overlap Releases after time delay of 120 secs

C) overlap Releases after time delay of 60 secs

D) No effect on overlap (ANS:B)

32. When the signal is taken OFF, if SM turns LC gate control knob to reverse_____

A) LC Gate Extraction possible immediately

B) LC gate extraction Possible without any cancellation

C) LC gate Extraction possible with cancellation and after time delay of 120 secs

D) LC gate can be possible to open at any time (ANS:C)

33. When GN button is pressed, ---------- relay drops.

A) GNR

B) GNCR

C) UNCR

D) UNR (ANS: B)

34. Keeping S1GN button in pressed condition, if S2GN button pressed, then

A) S2GNR alone picks up

B) S1GNR alone picks up

C) S2GNR & S1GNR both pick up

D) S2GNR & S1GNR both drop (ANS: B)

35. In ---------- circuits, SMR contact is not proved.
    A) GNR
    B) EGGNR
    C) Both GNR & EGGNR
    D) GNR & UNR (ANS:C)

36. When a Home signal GN and EGGN buttons are pressed simultaneously, ---------- relay drops firstly, and thereby HR drops to throw a cleared signal to danger.
    A) RR
    B) NRR
    C) NNR
    D) UYR1 (ANS:A)

37. If a button is struck on the panel, ---------- relay drops to give buzzer.
    A) NCR
    B) RCR
    C) NNCR
    D) NLR (ANS:C)

38. When SM key is taken out from panel, ---------- relay cannot pick up.
    A) GNR
    B) EGGNR
    C) UNR
    D) GNR & EGGNR (ANS:C)

39. When UN button is pressed, ----------relay drops.
    A) UNR
    B) GNR
    C) GNCR
    D) UNCR (ANS:D)

40. ---------- NRR relay front and NNR relay back are proved in NLR circuit.
    A) Signals for which that point is required in Reverse.
    B) Signals for which that point is required in Normal.
    C) Signals for which that point is required in Normal or Reverse
    D) Signals for which that point is not required. (ANS:B)

41. During automatic point operation, when NWKR picks up, ---------- relays drop.
    A) NLR
    B) NWLR
    C) Both NLR & NWLR
    D) RLR

    (ANS:C)

42. For every automatic point operation, ----------WWRs will pick up.
    A) Only points required for that route
    B) All points in the yard
    C) Only overlap points
    D) Only Isolation points (ANS:B)

43. For every automatic point operation, ---------- ASWRs are picked up.
    A) All points
    B) Points not required for the route
    C) Points required for the route
    D) None of the points (ANS:C)

44. --------- Contact of GNR is proved in HR circuit.
    A) Front
    B) Back
    C) None
    D) Front and back (ANS:B)

45. The GNR back contact is bypassed by ---------- contact of HR.
    A) Back
    B) Front
    C) Neither front nor back
    D) Both front and back (ANS:B)

46. TLSR/TRSR is normally ---------- relay.
    A) Pick up
    B) Drop
    C) Cannot say
    D) During signal movement pick up (ANS:A)

47. When point at site is in normal, ---------- relay in relay room is in pick up.
    A) RCR
    B) RLR
    C) NLR
    D) NCR (ANS:D)

48. NWLR relay picks up when ----------
    A) Manual point operation to normal
    B) Emergency point operation to normal
    C) Automatic point operation to normal
    D) Manual/Emergency/Automatic point operation (ANS:D)

49. ASWR is normally ---------- relay.
    A) Drop
    B) Pick up
    C) Cannot say
    D) Pickup/ drop (ANS: A)

50. In sectional route release, the first route section is controlled by ------
    A) TLSR
    B) TRSR
    C) TSR
    D) ASR (ANS:D)

51. During sectional route release if ASR fails to pick up during train movement, then TLSR/TRSR ----------
    A) Can pick up
    B) Cannot pick up
    C) Cannot say
    D) Depends on track sections in TLSR/TRSR control (ANS:B)

52. The home S1DR to pick up, --------- conditions required.
    A) S1HR pick up for main line
    B) Main line starter DR pick up
    C) Main line starter DG burning
    D) S1HR pick up for main line & Main line starter DG burning (ANS: D)

53. The route set indications on the panel are given through ----------
    A) ASR pick up
    B) ASR drop
    C) OVSR srop
    D) ASR/OVSR/TLSR/TRSR drop (ANS:D)

54. The track occupied/ failed indications on panel are given through ----
    A) TPR up
    B) TPR down
    C) TLSR down
    D) TRSR down (ANS:B)

55. The point chain operation is provided for ---------- purpose.
    A) To safe guard the battery from overload
    B) Cannot say
    C) To safe guard the point machine
    D) To save relays (ANS: A)

56. ---------- Relays are provided with stick path in point control circuit.
    A) NLR
    B) RLR
    C) NCR
    D) NCR & RCR (Ans: D)

57. The relay in relay room remains in pick up, after completion of point operation to normal.
    A) NLR
    B) RLR
    C) RCR
    D) NCR &NWKR (ANS: D)

58. During emergency point operation alone, ---------- relay is picked up and dropped.
    A) NLR
    B) RLR
    C) EW(NR)CR
    D) Cannot say (ANS: C)

59. During automatic point operation alone, --------- relays are picked up.
    A) NLR
    B) RLR
    C) Cannot say
    D) NLR & RLRs (ANS: D)

60. The PCR relay is picked up through ---------- contact of --------- relay.
    A) Front , NWLR
    B) Back, NWLR
    C) Front, NWLR/RWLR
    D) Back, NWLR/RWLR (ANS:C)

61. The WNR back in parallel with ---------- contact is proved in NWLR circuit for mid stroke reversal.
    A) RWWNR front
    B) RWWNR back
    C) NWWNR front
    D) NWWNR back (ANS:B)

62. The WJR relay drops, when ----------
    A) After completion of point detection
    B) After discharging of condensers
    C) After completion of point detection or after discharging of condensers
    D) WCR picks up (ANS:C)

63. LX JSLR relay is _____

A) Slow to pickup

B) Slow to release

C) Both slow to pickup & slow to release

D) Normal (ANS :B)

64. In CHRR circuit CHNR back contact bye passed with _____ contact to Ensure dropping of CHRR

A) GSBNR back

B) GSRBNR back

C) CHFR

D) CHYR (ANS: B)

65. In signal NNR circuit _____contacts are byepasse3d with NNR front contacts

A) ASR pickup

B) ASR drop

C) UCR pickup

D) UCR drop (ANS: A)

66. NWLR Relay picks up during _____

A) Individual point Normal operation

B) Normal Auto operation

C) Emergency Normal point operation

D) In All operations (ANS: D)

67. NCR Relay picks up during _____

A) Individual point Normal operation

B) Normal Auto operation

C) Emergency Normal point operation

D) In All operations (ANS: D)

68. ASWR relay pickup during

A) Individual point operation

B) Auto operation

C) Emergency point operation

D) In All operations (ANS: B)

69. IN NWSR/RWSR circuit, detection contacts are bye passed with _____ contacts

A) NWSR back & CHLR front

B) NWSR front & CHLR back

C) NWSR front & CHLR front

D) NWSR back & RWSR back (ANS:C)

70. In NRR circuit GNR back contact bye passed with _____contact

A) NRPR front
B) NRPR back
C) UCR back
D) UCR front (ANS: A)

71. NLR relay Picks up during _____

A) Individual point Normal operation
B) Normal Auto operation
C) Emergency Normal point operation
D) In All operations (ANS: B)

72. HR signal is made_____

A) Slow to Release
B) Slow to pick up
C) Both slow to pickup and slow to release
D) No time delay (ANS: A)

Objectives Questions

CH-1 : Introduction

1. For any vital operation buttons are to be pressed simultaneously …….
   a) One
   b) **Two**
   c) Three
   d) Four.

2. Types of Flasher Relays is used in Siemens Installation …….
   a) Electronics
   b) **Mercury**
   c) K-50
   d) Interlocked

3. Types of Timer Relays used in Siemens Installation …….
   a) Thermal
   b) Electronic
   c) Double coil
   d) **Clock Work**

4. Signal controls are placed on the principle of ……..
   a) Entry-Exit b) Exit to Exit
   c) Entry –Exit d) Entry Only.

5. Circuits are drawn as …..
   a) Left to Right b) Verticals
   c) Right to left d) **Top to Bottom.**

6. Relay Groups are useful for……..
   a) **Less no of terminals** b) More no of terminals
   c) Without terminal d) complex wiring

7. Modular design of relay groups makes it possible for easy…..
   a) Replacement
   b) Makes Wiring Complex
   c) Uniform Gear Control.
   d) Easy for fault finding.

8. Tag Blocks are used as…
   a) Interface between Relays base and External Circuit.
   b) Used only to connect Relay Base.
   c) Used only to connect CT Rack.
   d) Used only to connect Panel.

CHAPTER – 2 : Control panel

1. Number of Compartments in Domino Strips is……

a) 20 b) 16 **c) 15** d) 12

2. In Domino strips pin number served as common negative….

a) 20 **b) 16** c) 15 d) 12

3. The location of any panel section is identified by its ……..

a) **Column number followed by its row number.**

b) Row number followed by its column.

c) By its Relay rack number

d) By its IDF number.

4. WN Buttons Blue with white dot on top is used for …..

a) Full route cancellation b) Only for point operation

c) only for Sub Route Cancellation **d) Point Operation and Sub Route Cancellation.**

5. Common Button to replace a cleared Signal to 'ON'……

a) EWN b) EUUYN **c) EGGN** d) YYN

6. Common Button to introduce Auto working of a Main Signal

a) CH-YN b) AGGRN c) YYN **d) AGGN**

7. Common Overlap Release Button……

a) **OYN** b) KLN c) KLCR d) UN

8. Emergency Point operation Counter

a**) EWZ** b) EUYZ c) EUUYZ d) OYZ

9. Emergency Sub-Route Release Counter

a**)** EWZ b) EUYZ c) **EUUYZ** d) OYZ

10. Emergency Full Route Release Counter

a) EWZ **b) EUYZ** c) EUUYZ d) OYZ

11. Overlap Release Counter..

a) EWZ b) EUYZ c) EUUYZ d) **OYZ**

12'Calling on' Signal Operation Counter

a) **COGGZ)** b)EUYZ c) EUUYZ d) OYZ

13. LXN Button…..

a) Level crossing control release button.

b) (Point) Key Lock Release Button.

c) Crank Handle Release Button.

d) Common Slot Return Acknowledgement button

14. YRN Buttons….
    a) Level crossing control release button.
    b) (Point) Key Lock Release Button.
    c) Crank Handle Release Button.
    d) Common Slot Return Acknowledgement button

15. YYN Button……
    a) Level crossing control release button.
    b) (Point) Key Lock Release Button.
    c) Crank Handle Release Button.
    d) Common Slot Release Button.

16. Normal Indication for Track Circuit on Panel without route initiation
    a) No Indication.
    b) Turn to Red with route initiation.
    c) Turn to Yellow with route initiation.
    d) Flashes with route initiation.

17. Indication on panel, If DG lamp of Signal gets fused ……,
    a) Signal displays HG aspect since cascading control.
    b) Green indication starts flashing and steady Yellow indication appears on signal demarcation.
    c) Only Green Indication flashes.
    d) Red Steady indication appears on signal demarcation.

18. Indication on panel, If HG lamp of Signal gets fused ……,
    a) Yellow flashing and Red Steady indication appears on signal demarcation.
    b) Red Steady indication appears on signal demarcation.
    c) Only Green Indication flashes.
    d) Green indication starts flashing and steady Yellow indication appears on signal demarcation**.**

19. Indication on panel when, Track circuit failed with route setting
    a) Indication turns to red from yellow.
    b) Turn to Red with route initiation.
    c) Turn to Yellow with route initiation.
    d) Flashes with route initiation.

20. Indication on panel, when point failed without any route and overlap…
    a) Steady indication over point strip.
    b) Flashing indication over point strips.
    c) Locking Indication flashes.
    d) Both Locking and strip indication flashes.

21. Indication on panel, If RG lamp of Signal gets fused ……,

a) Yellow flashing and Red Steady indication appears on signal demarcation.

b) Red Steady indication appears on signal demarcation.

c) Only Red Indication flashes.

d) Green indication starts flashing and steady Yellow indication appears on signal demarcation**.**

22. If more than two lamps are fused on Route Indicator…

a) White route indication flashes and Red indication appears on signal demarcation.

b) Red indication appears on signal demarcation.

c) White route indication flashes.

d) Red flashing indication appears on signal demarcation.

23. Signal locks Route before clearing.

a) Steady white spot indication appears above route button.

b**)** Flashing white spot indication appears above route button.

c) Red flashing indication appears on signal demarcation.

d) White route indication flashes.

Chapter-3 : Relay Groups and its arrangement

1. Capacity of Minor to accommodate max relays.
   a) 30 b) 2 **c)15** d)16

2. Capacity of Major group to accommodate max relays.
   a) 30 b) 2 c)15 d)16

3. One Point Group can controlled ……
   a) One Cross Over b) Three Cross over
   c) four crossover d) five cross over

4. For A type relays thickness of residual pin is ….
   a) **0.35 mm** b) 0.45 mm c) 0.15 mm d) 0.05 mm

5. For B type relays thickness of residual pin is ….
   a) 0.35mm b) 0.45 mm c) **0.15 mm** d) 0.05 mm

6. For E type relays thickness of residual pin is ….
   a) 0.35 mm b) **0.45 mm** c) 0.15 mm d) 0.05 mm

7. For Neutral Relays Pick up time is
   a) **25ms to 60ms** b) 7ms to 15ms.
   c) 120 Seconds d)60 seconds

8. For Neutral Relays drop away time is
   a) 25ms to 60ms b**) 7ms to 15ms**
   c) 120 Seconds d)60 seconds

9. Guide pins are provided to prevent plugging of relay in a
   a) in a wrong direction
   b) inverting the position of relay.
   c) to prevent the plugging of wrong relay in a base.
   d) for neutral relays only.

10. For any combination of K-50 Relays contact number 05 and 15 are always
    a) always Front contact
    b) **always Back contact**
    c) inter changeable contact
    d) inter changeable contact.

11. For any combination of K-50 Relays contact number 02 and 12 are always
    a) always Front contact
    b) always Back contact
    c) inter changeable contact
    d) inter changeable contact.

12. For any combination of K-50 Relays contact number 03 and 13 are always
    a) always Front contact
    b) always Back contact
    c**) inter changeable contact**
    d) inter changeable contact.

13. Relay is used to provide One Train-One Signal feature
    a**) GLSR** b) GR1 c) GR2 d) GR3

14. GR1 is made slow to release to...
    a) prevent cleared signal going to danger
    b) to pickup GLSR
    c) to pickup GNR
    d) to drop GNR

15. Universal Route Group can controlled
    a) Two Route Section b) Three Route Section
    c) four Route Section d) Without Route Sections.

16. In Universal route group number of UDKRs are
    a) Tow b)Three c) Four **d) One**

17. In Route Group DUCR detect the position of
    a)Point b) Signal c) Route Section d) GLSR

18. U(R)LR is a ……
    a) Sub Route Locking Relay b) Signal Locking Relay
    c) Point Locking Relay d) Shunt Locking Relay

19. When W(R)R picks up it switch on ……
    a) 110V DC b) 60 V DC c) 24 DC d)12 V DC

20. When W(N)R picks up it switch on ……
    a) 110V DC **b) 60 V DC** c) 24 DC d)12 V DC

21. This relay detects the correct setting and locking of point in either position
    a) WKRI b) WKR2 c) WKR3 d) Z3WR

22. This is also called as “Cross Protection Relay”.
    a) WKRI **b) WKR2** c) WKR3 d) Z3WR

23. This Relay is also called as an “End Position Proving Relay”.
    a) WKRI b) WKR2 **c) WKR3** d) Z3WR

24. This is a double coil relay. It checks that the point group is initiated due to route setting only
    a) WKRI b) WKR2 **c) WLR** d) Z3WR

25 . This is the first relay to pick-up in a point major group for automatic point operation under route setting conditions.

a) WKRI b) WKR2 **c) Z1WR** d) Z3WR

26. This relay picks up when the point is operated during route setting to give indications on point zone tracks in the route or overlap set for more important move.

a) WKRI b) WKR2 **c) Z2WR1** d) Z3WR

27. This relay picks up when the point is operated during route setting to give indications on point zone track in the route or overlap set for less important move.

a) WKRI b) WKR2 **c) Z2WR2** d) Z3WR

28. This Relay initiates Point Chain Group

a) WKRI b) WKR2 **c) Z3WR1** d) Z3WR

Chapter-4 : Route Section Plan

1. The Route sections are marked with …..

a) Dotted Lines **b) Thick Lines**

c) Combination of both d) No marking.

2. The Signal Route is divided into …..

a)Sub Route b) Route Section

c) Zone d) Overlap

3. The Sub Route is divided into……

a)Sub Route **b) Route Section**

c)Zone d) Overlap

4. One Sub Route may consist of ….

a) Only Two Route Section

b) Two or Three Route Section

c) four Route section

d) Five Route section

5. One Route Group Can controlled only…

a) Two Route section

b) Three Route section

c) Two or Three Route Section

d) Five Route section

6. Route Group controlled the activity of points in the

a) Route b) Overlap

c) Isolation d) None of the Option

7. When AU(R)S is set position of point required is

a) Normal b) Reverse

c) May be reverse d) Both Normal and Reverse

8. When BU(R)S is set position of point required is

a) Normal **b) Reverse**

c) May be reverse d) Both Normal and Reverse

9.In route Group relays checks that point zone area is clear..

a) DUCR **b) UDKR** c) U(R)LR d) UYR1

10 Relays Checks correct setting of Point in Normal

a) A DUCR b) UDKR c) U(R)LR d) UYR1

11. Relays Checks correct setting of Point in Reverse

a) A DUCR b) UDKR **c) B DUCR** d) UYR1

12. Relay ensured that only One Route Section is set

a) U(R)LR b) UDKR c) UYR1 d) UYR2

13. The Overlap are marked with

a) Dotted Lines b) Solid Lines

c) Combination of both d) No marking

14. OV1Z2U(R)R Operates and locks the Point in

a) Normal b) Reverse

c) May be reverse d) Both Normal and Reverse

15. OV2Z2U(R)R Operates and locks the Point in

a) Normal **b) Reverse**

c) May be reverse d) Both Normal and Reverse

16. A Sub Route Without point is named after…..

a) Point in the Route

b) Point in the Overlap

c) Signal Number falling on the Route section

d) Point in the Isolation

17. A Sub Route Without point can be used for….

a) **Holding GLSR** b) Holding GR1

c) Stick path to GR1 d) Stick path to GLSR

18. Route Releasing Relays are

a) **UYR1 & UYR2** b) Only UYR1

c) Only UYR2 d) U(R)S

19. When U (N)LR is set it indicates

a) **Sub Route is locked**

b) Sub Route is Unlocked

c) AU(R)S is set

d) B U(R)S is set

20. In case of RRI Route Section are also used for

a) Point Operation in Route

b) Slot Operation

c) Gate Operation

d) Point Operation on Overlap

21. In case of RRI Overlaps are also used for

a) Point Operation in Route

b) Slot Operation

c) Gate Operation

d) Point Operation on Overlap

22. A Sub Route without point after Home Signal Ensures ……

a) Block Overlap b) Signal Overlap

c) Both Block and Signal d) Only Signal Overlap

23. A Sub Route without point after Starter Signal Ensures

a) Block Overlap b**) Locking of Home Signal**

c) Both Block and Signal d) Only Signal Overlap

24. In Case of Parallel Movements an Sub Route is used with

a) A Sub Route with Three Route Section

b) A Sub Route with Two Route Section

c) A Sub Route only

d) Two Sub Route with Two route Section

Chapter-5 : principles of operation for various gears

1. In the _____stage, interlocking and other safe conditions are verified and confirmed before changing the position of controlled gear.

a) Initiation b) Control c) Checking and d) Locking

2. In the _____' stage, initiation is proved and operating feed is connected to the gear after checking the integrity of relays involved in the process

a) Initiation **b) Control** c) Checking and d) Locking

3. In the _____ stages, the changed condition of gear is ascertained

a). Initiation b) Control c) **Checking** d) Locking

4. In the_____ stage, it is proved that the point is free from route locking as well as track locking

a) Initiation b) Control c) Checking d) Locking

5.. An emergency common point's button (EWN) is pressed along with the individual Button

a) GN b) UN **c) WN** d) WWN

6. Signal Initiation and Route Initiation take place at a time, controls as Signal button and _____ together and released.

a) GN **b) UN** c) WN d) WWN

7. Once the direction is established, it is not possible to initiate any other signal

a) on the same route in opposite directions

b) On the same direction with different route.

c) On the same route with different Signal.

d) Shunting may be permitted.

9. Setting of a route section makes points …..

a) **Locked** b) Free

c) can be free d) Only indication is used.

10. Setting of a route section locks

a) points and Crank Handle

b) Only points

c) Only Crank Handle

d) Only indication is used.

11. In RRI, setting of a route section includes operation of the concerned points

a) if they are not already lying in the required position, before locking them.

b) if they are lying in the required position, operates again and locking them.

c) Only Operates them.

d) Directly locks them.

12. Route Checking, with route setting involves proving of correct…..

a) Correct point detection along with route setting and free condition of route section track circuits.

b) Correct point detection along with route setting only.

c) Only point is detected.

d) Only track circuits are checked.

13. The route section does not get normalised unless

a) this locking is released after the passage of train.

b) Partial passage of train.

c) Half Shunting passage.

d) Without any movement.

14. Shunt signal gets cleared before the Sh GN & UN are

a) buttons are released after operation.

b) Buttons are required to kept press.

c) By Releasing GN and keeping UN button pressed.

d) By Releasing UN and keeping GN button pressed.

15. For calling on signal control, operation is done only after

a) the occupation of Calling ON signal approach track circuit.

b) before the occupation of Calling ON signal approach track circuit.

c) With the Line Clear condition.

d) With the Train On Line Condition.

16. For calling on signal control,time delays starts with the

a) the occupation of Calling ON signal approach track circuit.

b) before the occupation of Calling ON signal approach track circuit.

c) With the Line Clear condition.

d) With the Train On Line Condition.

17. The route and overlap release leads to the release of

a) Signal locking and point locking.

b) Only Signal Locking

c) Only Point Locking.

d) Signal kept lock and Point locking releases.

18. The process known as ‘manual route release’ is initiated by the operator by means of three buttons as……

a) EUUYN, GN & UN.

b) EUYN, GN & UN

c) EUYN, GN & WN

d) EUUYN, GN & OYN.

19. In case of track circuit failure in any section of the route set, the route section concerned can be released by the process of

a) automatic route release

b) manual route release.

c) With OYN Cancellation.

d) Sub Route cancellation only.

20. Emergency Operation which required Signal Engineer Authorisation is

a) Full Route Cancellation.

b) Overlap cancellation.

c) Emergency Point Operation.

d)Sub Route Cancellation

21. In case, a signal overlap has to be released in emergency, the pressing of

a) 'OYN' along with the 'UN' concerned behind the signal.

b) EUYN, GN & UN

c) EUYN, GN & WN

d) EUUYN, GN & OYN.

22. Crank handle slot can be release only when…

a) When the point is set in route only.

b) When the point is set in Overlap only.

c) When the Point is set and locked in Route.

d) When the point is free from Route Section and Overlap.

23. When route sections and overlaps involving the gate are normal, the panel operator presses

a) LXN along with YYN.

b) LXN along with YRN.

c) EUYN, GN & WN

d) EUUYN, GN & OYN.

24. When route sections and overlaps involving the gate are normal, the panel operator presses LXN along with YYN.

a)The steady white indication near LXN on the panel starts flashing.

b) The steady Red indication near LXN on the panel starts flashing.

c) The steady white indication near LXN on the panel steady.

d) Both white and Red Indication starts flashing.

25. For calling on signal control, time delays starts with the

a) Initiation of C-ON signal.

b) Without any Initiation just start with the occupation of C-ON Track.

c) Initiation of C-On and occupation of C-ON Track.

d) Without any Time delay.

26. Under normal condition Overlap can also released with….

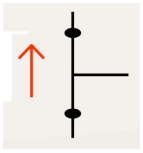
a) EUYN, GN & WN

b) EUUYN, GN & OYN.

c) EUYN, GN & WN

d) EUUYN, GN & UN.

CHAPTER – 6 : Symbols and nomenclature

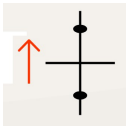
1.  Symbol Indicates……

   a) Neutral Relay, Normally Picked up, Make Contact i.e Front Contact

   b) Neutral Relay, Normally Picked up, Break Contact i.e Back Contact

   c) Panel Key IN Contact

   d) Track Relay.

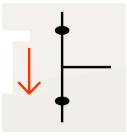
2.  Symbol Indicates……

   a) Neutral Relay, Normally Picked up, Make Contact i.e Front Contact

   b) Neutral Relay, Normally Picked up, Break Contact i.e Back Contact

   c) Panel Key IN Contact

   d) Track Relay.

3.  Symbol Indicates……

   a) Neutral Relay, Normally Picked up, Make Contact i.e Front Contact

   b) Neutral Relay, Normally Picked up, Break Contact i.e Back Contact

   c) Panel Key IN Contact

   d) **Neutral Relay, Normally Dropped, Make Contact i.e Back Contact**

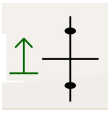
4. Symbol Indicates……

   a) Neutral Relay, Normally Picked up, Make Contact i.e Front Contact

   b) Neutral Relay, Normally Picked up, Break Contact i.e Back Contact

   c) Neutral Relay, Normally Dropped, Break Contact i.e Front Contact

   d) Neutral Relay, Normally Dropped, Make Contact i.e Back Contact

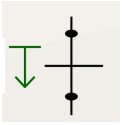
5.  Symbol Indicates……

   a) Neutral Relay, Normally Picked up, Make Contact i.e Front Contact

   b) Neutral Relay, Normally Picked up, Break Contact i.e Back Contact

   c) Neutral Relay, Normally Dropped, Break Contact i.e Front Contact

   d) **Interlocked Relay, Normally Picked up, Break Contact i.e Back Contact**

6.  Symbol Indicates……

a) Interlocked Relay, Normally Dropped, Break Contact i.e Front Contact

b) Neutral Relay, Normally Picked up, Break Contact i.e Back Contact

c) Neutral Relay, Normally Dropped, Break Contact i.e Front Contact

.d) Interlocked Relay, Normally Picked up, Break Contact i.e Back Contact.

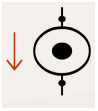
7. Symbol Indicates……

a**)** Track Relay

b) Panel Key IN Contact

c) Neutral Relay, Normally Dropped, Break Contact i.e Front Contact

d) Interlocked Relay, Normally Picked up, Break Contact i.e Back Contact.

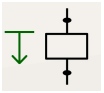
8.  Symbol Indicates……

a**)** Track Relay

b) Panel Key IN Contact

c) Point Contactor Relay

.d) Interlocked Relay, Normally Picked up, Break Contact i.e Back Contact.

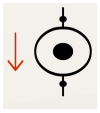
9.  Symbol Indicates……

a**)** Track Relay

b) Panel Key IN Contact

c) Interlocked Relay Reverse Coil (Top Relay).

d) Interlocked Relay, Normally Picked up, Break Contact i.e Back Contact.

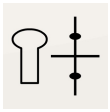
10.  Symbol Indicates……

a**)** Track Relay

b) Panel Key IN Contact

c) Interlocked Relay Reverse Coil (Top Relay).

d) Point Contactor Relay

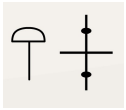
11.  Symbol Indicates……

a) Track Relay

b) Panel Key IN Contact

c) Panel Key IN Contact

d) Point Contactor Relay

12.  Symbol Indicates……

a) Track Relay

b) Push Button Pressed Contact

c) Panel Key IN Contact

d) Point Contactor Relay

13. WNR indicates

a) Point Button Relay

b) Point group Initiation Relay (with route setting)

c) Point Locking Relay

d) Point Operation Circuit Switching Relay.

14. W(R/)R Indicates .....

a) Point Operation Circuit Switching Relay

b) Point Detection Circuit Switching Relay

c) Point Normal operation control Lock Relay

d) Point Contactor Relay

15. WKR_1

a) Point final detection Relay.

b) Prove Point and Points group out of correspondence and cross protection arrangement.

c) Point group Initiation Relay (with route setting)

d) Point Operation Circuit Switching Relay.

15. Z1UR1

a) Diversion Selection Initiating Relay

b) Zonal Route Permissibility Checking Relay

c) Main Signal control Initiating Relay.

d) Route section Initiating Relay (Common for a Sub route)

17. MN-GZR……..

a) Main Signal control Initiating Relay

b) Zonal Route Permissibility Checking Relay

c) Route section Initiating Relay (Common for a Sub route)

d) Shunt Signal control Initiating Relay.

18. SH-GZR ……..
    a) **Shunt Signal control Initiating Relay.**
    b) Zonal Route Permissibility Checking Relay
    c) Route section Initiating Relay (Common for a Sub route)
    d) Point group Initiation Relay (with route setting)

19. UDKR…
    a) **Sub-Route Clear Indication Relay**
    b) Sub-Route Clear Indication Relay
    c) Calling ON Signal Route Locking Relay-1
    d) Shunt Signal control Initiating Relay.

20. GLSR …….
    a) **Signal Lock Stick Relay.**
    b) Signal Lamp Failure Alarm Timer Relay.
    c) Attention Aspect Checking Relay.
    d) CO. Signal Lamp Checking Relay.

21. G(R/N)LR ……
    a) **Signal Locking / Unlocking relay**
    b) Signal Lamp Failure Alarm Timer Relay.
    c) Overlap Setting / Releasing Relay.
    d) (Reverse/Normal) Direction Setting Relay.

22. OVZ$_2$U(R/N)R ……
    a) (Reverse/Normal) Direction Setting Relay.
    b) **Overlap Setting / Releasing Relay.**
    c) Sub-Route Locking/Releasing Relay.
    d) Overlap Release Button Relay.

23. NCR ……
    a) **Common Checking Relay for Button checking .**
    b) Emergency Button Relay to replace Signal at ‘ON’
    c) Emergency Route Release Button Relay.
    d) Relay Proving EUUYN operation with Route Initiation.

24. OYNR ……
    a) **Overlap Release Button Relay.**
    b) Overlap Release Time Setting Relay.
    c) Overlap Setting / Releasing Relay.
    d) Emergency Route Release Button Relay.

25. EUYR ……

a) Emergency Route section Release Relay.

b) Emergency Route Release Button Relay.

c) Emergency Button Relay to replace Signal at 'ON'

d) Overlap Release Time Setting Relay.

26. WXJR ……

a) Point detection Failure Alarm Timer Relay

b) Signal lamp Failure Alarm Release Button Relay.

c) Point detection Failure Alarm Release Button Relay.

d) Common Slot Release Button Relay.

Objective Questions

Chapter 2 : Table of Control

1. Inputs for the preparation of Table of Controls are taken from ……
   a) **Route Section Plans**.
   b) Signaling Plan.
   c) Engineering Plan
   d) Signaling Plan Only.

2. Control Table is a tabular representation of a ……..…
   a) Signaling Yards
   b) Timer Groups.
   c) Crank Handle Groups.
   d) It represents only Timer Groups.

3. Inputs for the design of circuits are taken from
   a) Route Section Plans.
   b) Signaling Plan.
   c) Table of Controls.
   d) Signaling Plan Only

4. Panel Testing is carried out with the help of
   a) Route Section Plans.
   b) Signaling Plan.
   c) Table of Controls.
   d) Signaling Plan Only

5. In the format of Table of Controls Signal Routes are defined as
   a) Each Signal route is defined separately.
   b) Each Signal Route is defined separately with respect to Exit/destination.
   c) Each Signal Route is defined separately with respect to Overlap.
   d) Each Signal Route is defined separately with respect to Exit/destination and with different Overlaps

6. In Table of Control; Route Sections Set, indicates…..
   a) Route Sections conflicting to the required set route section are Not Set.
   b) Route Sections conflicting to the required set route section are Set.
   c) Route Sections to be set for the required movement.
   d) Overlaps conflicting to be set are written.

7. In Table of Control; Route Sections eliminated indicates…..
   a) Route Sections conflicting to the required set route section are Not Set.
   b) Route Sections conflicting to the required set route section are Set.
   c) Route Sections to be set for the required movement.
   d) Overlaps conflicting to be set are written.

8. In Table of Control; Route Sections Set, indicates ……..
   a) refers to overlap sections required to be set for the given. Signal route.
   b) Overlaps conflicting to be set are written.
   c) Route Sections conflicting to the required set route section are Set.
   d) Route Sections to be set for the required movement.

9. In Table of Control; Signal to Danger Track Circuits indicates…..
   a) to the first track circuit in advance of a signal.
   b) to the first track circuit in advance of a signal and occupation of which will replace the concerned signal to ON aspect
   c) Approach Track Circuit.
   d) Back lock Track Circuits.

10. Approach Locking Track circuit for Main Line Starter Signal ……
    a) Dead Approach locking.
    b) From the berthing track to first control track circuit of the Home signal.
    c) From the berthing track to first control track circuit of the Home signal, if Points are set to Main Line.
    d) Not required for main line starter.

11. Approach Locking Track circuit for Loop Line Starter Signal…
    a) **Berthing Track**.
    b) Not required for loop line starter.
    c) From the berthing track to first control track circuit of the Home signal.
    d) Dead Approach locking

12. Aspect of Signal ahead to be proved generally this input is taken from ……
    a) From selection table.
    b) Route Section Plan.
    c) Aspect Control Chart from Signaling plan.
    d) Not required.

13. Locked by Crank Handle group caters to the information about
    a) Crank Handle groups to be locked for the points.
    b) Shunt Signal to be locked.
    c) Main Signal to be locked
    d) C-On signal to be locked.

Chapter 3 : Button Relays and Button Checking Relays

1. GNR relay is provided in the respective
   a) Signal Group
   b) Universal Route Group
   c) Point group.
   d) Only in Universal Route Group

2. A common relay GNCR is picked up proving all
   a) Signal buttons are Normal(GNR)
   b) GNRs are Normal ,but GNPRs are pickup.
   c) All EGNRs are Normal.
   d) GN is pressed and its repeater GNPR has energised.

3. In GNR Circuit, EGNR back contact is proved to ensure that
   a) One operation (clearance or cancellation) is possible at a time.
   b) Because both are inside the same group.
   c) EGNR is Normally Pickup relay
   d) GNR is normally down.

4. GNR and EGNR relays in the Signal group pick up even though SM key of the panel is taken out.
   a) To put back an OFF Signal to ON in an Emergency.
   b) For full route cancellation.
   c) Route can be altered in Emergency.
   d) To Initiate C-ON, when track Circuit is failed.

5. GNCR Relay is Normally Pick up when..
   a) When All GNRs are dropped.
   b) When all GNRs and GNPRs are dropped.
   c) Whenever any Button on the Panel is pressed condition
   d) Only GNPRs are dropped.

6. When any UN Button is press UNR picks up..
   a) Inside the Route Group.
   b) Inside the Signal group.
   c) Provided Separately in K-50 Mini Group.
   d) Inside the Point group.

7. WNCR remains in the energised condition through the back contacts of all the
   a) WNR
   b) UNR
   c) GNR
   d) WLR

8. NNCR is
   a) All Signal Button Checking relay.
   b) All Route Button Checking relay.
   c) All Point Button Checking relay.
   d) All Panel Control(Button) Normal Checking relay.

9. Is a Slow to release Relay….
   a) GNCR
   b) UNCR
   c) NNCR
   d) WNCR

10. In NNCR Circuit
    a) GNCR,UNCR and WNCR drop are proved.
    b) Only GNCR and UNCR pickup is proved.
    c) All GNCR,UNCR and WNCR pickup is proved.
    d) GNCR and UNCR is not required.

11. In NNCR Circuit, back contact of ZDUCR indicates
    a) ZDUCR is drop, for next operation.
    b) Used to bypass Initiation Circuit.
    c) For next operation it is not required.
    d) Not required.

Chapter 4 : Signal Operation

1. Signal clearance takes place in …….
   a) Two Stages
   b) One Stage.
   c) Three Stage
   d) Directly.

2. First Stage of Signal Clearance is
   a) Route and Signal Initiation.
   b) Route Setting, Checking and Locking.
   c) Signal Clearance.
   d) Point Operation.

3. Relay ensures Route and Signal Initiation.
   a) Mn GZR
   b) DUCR
   c) ZDUCR
   d) UDKR

4. During Route and Signal initiation of main Signal it is checked..
   a) Route to be set is free from all conflicting movements.
   b) Route may be free but Overlap not required.
   c) Only overlap portion is checked
   d) Only points in the overlap are checked.

5. MN – GNPR
   a) Common relay to repeat the operation of any Main Signal Button relay.
   b) Common relay to repeat the operation of Starter Signal Button relay.
   c) Used for the initiation of C-ON.
   d) Common relay to repeat the operation of any Main Signal Button relay.

6. MN – GNPR
   a) Used for the bifurcation Mn Signal and Sh signal initiation.
   b) Used for the initiation of C-ON.
   c) Used for the initiation of Sh-Signal.
   d) Provided to interlock the Signals in opposite direction on a road.

7. SH – GNPR
   a) Used for the bifurcation Mn Signal and Sh Signal Initiation.
   b) Common relay to repeat the operation of Starter Signal Button relay.
   c) Used for the initiation of C-ON.
   d) Common relay to repeat the operation of any Main Signal Button relay.

8. SH-G(R)R
   - **a) Shunt Signal selection relay**
   - b) Main & C.O. Signal selection relay
   - c) Initiates Main /CO Signal and Route when Normal.
   - d) Direction determining relay.

9. SH G(R)R
   - a) Shunt Signal selection relay.
   - **b) Main & C.O. Signal selection relay.**
   - c) Direction determining relay.
   - d) Initiates Shunt Signal and Route when Reversed.

10. ZU(R)R
    - a) Direction determining relay.(Left to Right)
    - **b) Direction determining relay.(Right to Left).**
    - c) Used for the initiation of C-ON.
    - d) Used for the initiation of Sh-Signal only.

11. ZU(N)R
    - **a) Direction determining relay.(Left to Right)**
    - b) Direction determining relay.(Right to Left).
    - c) Used for the initiation of Sh-Signal only.
    - d) Used for the initiation of Sh-Signal only.

12. G(R)LR
    - a) Provided to interlock the Signals in opposite direction.
    - **b) Signal Locking Relay**
    - c) Common relay to repeat the operation of any Main Signal Button relay
    - d) Direction determining relay.(Right to Left)

13. KL(R)R
    - **a) Point Key Lock Release Relay**
    - b) Point Key Lock Normal relay
    - c) Relay checking the condition of Key Lock at site and its Slot in the cabin.
    - d) Direction determining relay.(Right to Left).

14. $COULR_2$
    - a) Common Calling ON Signal Button relay.
    - **b) Calling ON Signal Control relay-2**
    - c) Emergency Route Release relay.
    - d) Used for the initiation of Sh-Signal.

15. Z_1UR
    a) **Sub Route initiating relay (common for all Route sections in a sub route**.
    b) Sub Route initiating relay common for entire zone.
    c) Diversion Selection Relay.
    d) Signal Initiation Relay.

16. EUYNR
    a) **Emergency Route Section Release Button relay.**
    b) Repeats Button operation in circuit.
    c) Common relay to repeat the operation of any Main Signal Button relay.
    d) Common relay to repeat the operation of any Shunt Signal Button relay

17. STN EUYR
    a) **Emergency Route release relay.**
    b) Repeater of the EUYNR.
    c) Repeater of the EUUYNCR
    d) Proved in CO-ON off aspect control circuit.

18. OVZ2U(R)R
    a) Overlap Release relay
    b) Overlap Setting Relay.
    c) Signal Locking Relay.
    d) Sub Route Locking Relay.

19. MN-GZR
    a) Shunt Signal Initiating relay (Common for all signals in a yard).
    b) Main Signal Initiating Relay (Common for all signals in a yard).
    c) Initiates the Shunt Signal to be cleared.
    d) Ensures availability of all required conditions for setting a Sh-Signal route.

20. SH-GZR
    a) Ensures availability of all required conditions for setting a Main Signal route.
    b) Initiates the Main Signal to be cleared.
    c) Shunt Signal Initiating relay (Common for all signals in a yard).
    d) Main Signal Initiating Relay (Common for all signals in a yard).

21. ZDUCR
    a) Main Signal Initiating Relay
    b) Shunt Signal Initiating relay.
    c) Route Permissibility checking relay Common for all Signal routes in a yard.
    d) Relay checking the condition of Key Lock at site and its Slot in the cabin.

22. SH G(R)R Ensures that
    a) All the Route Sections and Overlap falling in the Shunt Signal Route is Normal.
    b) Ensures availability of all required conditions for setting a Main Signal route.
    c) Initiates the Main Signal to be cleared.
    d) Main Signal Initiating Relay

23. Z1UR Picks up during….
    a) Route Initiation. for Signal Clearance only
    b) During full Route Cancellation only.
    c) Picks Up in both i.e. Route Initiation and Full Route Cancellation.
    d) Not required in Full Route Cancellation

24. Whenever Main signals are to be cleared, ZDUCR relay operates only after the
    a) Energisation of Mn GZR.
    b) Energisation of U(R)S.
    c) Energisation of OVZ2U(R)R.
    d) Energisation of GLSR.

25. In case of C-ON Signal Initiation ZDUCR operates only after the
    a) Energisation of Mn GZR.
    b) Energisation of SH GZR.
    c) Without Mn GZR & Sh GZR.
    d) Energisation of GLSR.

26. Pickup of OVZ2U(R) R ensures..
    a) Route is initiated ZDUCR is pickup.
    b) Only Mn GZR is pickup
    c) Both Mn GZR and ZDUCR is pickup.
    d) Mn GZR not required.

27. Pickup of OVZ2U(R) proves that
    a) Conflicting overlaps are Normal and not set
    b) Conflicting Route Sections are set.
    c) Conflicting overlaps are Normal and not set but Route Section may set.
    d) Points in the overlap are not set and detected to the required position correctly.

28. UDKR
    a) Common Relays for Sub Route.
    b) In Sub Route each route Section has its own UDKR.
    c) It works for Left to Right movements.
    d) It works for Right to Left movements.

29. UDKR is an …
    a) Normally pickup relay.
    b) Normally drop relay.
    c) Pickup with Route Section setting if TPR is dropped.
    d) Is an Interlocked Relay

30. UDKR is an normally drop relay and picks up only when…
    a) Concerned U(R)S and TPR is pickup.
    b) Pickup with Route Section setting if TPR is dropped.
    c) When the Route section is set only.
    d) When the TPR is pickup only.

31. To pickup DUCR following sequence is required…
    a) U(R)S,TPR & NWKR/RWKR is pickup.
    b) Only NWKR/RWKR is pickup.
    c) Only U(R)S& TPR is pickup.
    d) Point detection is not required.

32. GLSR is made Slow to release …..
    a) To pickup G(R) LR.
    b) To pickup GR1
    c) To pickup G(N)LR.
    d) To pickup GR2.

33. In GLSR is pickup main path ..
    a) GN & UN Buttons are required to be kept pressed.
    b) Can be released after ZDUCR is up.
    c) GN and UN Buttons are not required.
    d) GN and UN Buttons are not required as Route Section is already set.

34. When GN & UN buttons are released GLSR,Holds through…..
    a) U(R)S front contact only.
    b) U(R)S front contact and Own front Contact.
    c) GR1 front contact.
    d) G(R)LR front contact..

35. GLSR Slow to release features start, when….
    a) GPR1 picks up & cut the holding feed.
    b) When GN & UN Buttons are released and cut the feed.
    c) When GR2 picks up.
    d) When G(R)LR is pickup.

36. EGNR back contact is proved in GLSR circuit….
    a) To cut the feed of GLSR, for full route cancellation.
    b) To cut the feed of GR1,before its picksup.
    c) To cut the feed of G(R)LR .
    d) Not required.

37. Feed to GR1 is taken from….
    a) Signal in advance, for Red lamp protection.
    b) From the Signal group its self.
    c) From GLSR supply feed.
    d) From Lamp circuit of controlling Signal.

38. GR1 is made slow to release…
    a) It prevents signal going to danger ,when G(R)LR picks up.
    b) It prevents signal going to danger when GLSR is drop.
    c) **It prevents signal going to danger when track circuits flickered.**
    d) It prevents un authorized operation.

39. Stick path in GR1 is provided
    a) It prevents unintentional operation when GNR buttons is pressed.
    b) Because GLSR is going to drop.
    c) Both the option "a "&" b."
    d) Only option "a"

40. In case of GR1 Circuit
    a) GLSR front contact is proved.
    b) GLSR back contact is proved.
    c) G(R)LR front contact is proved.
    d) G(R)LR back contact is proved.

41. In case of GR2 Circuit
    a) GLSR front contact is proved.
    b) GLSR back contact is proved.
    c) G(R)LR front contact is proved.
    d) G(R)LR back contact is proved

42. Purpose of making two Signal controlling relays GR1 & GR2 is
    a) To ensure double safety.
    b) To check the working of GLSR, as One train One signal.
    c) Back contact is proved because of Metal to Metal Contact.
    d) Because it is a final stage of Signal Clearance.

43. Feed to GR2 is taken from….
    a) From the Signal group its self.
    b) From GLSR Circuits.
    c) Same feed of GR1 Circuits.
    d) From G(R)LR Circuit.

44. Feed to GR2 is extended only after
    a) G(R)LR is dropped,
    b) G(R)LR picks up and G(N)LR drops,
    c) Both G(R)LR & G(N)LR drops.
    d) U(R)S

45. SH-GLSR is normally……
    a) Drop Relay.
    b) Pickup Relay.
    c) Normally drop but picks up when Route Sections are set.
    d) Normally drop but picks up when Overlaps are set.

46. SH-GLSR is normally kept energised proving that:
    a) The concerned Route sections are normalized after previous operation.
    b) The concerned Route sections are set.
    c) The concerned Overlaps are set.
    d) Main signal has initiated.

47. $COULR_1$ ensures that…..
    a) Main Signal is not taken OFF & C-ON controlling track is down.
    b) Only Main Signal is not taken OFF.
    c) Only C-ON controlling track is down.
    d) Main Signal is taken OFF.

48. In the regular process, a Main Signal Overlap gets release
    a) Only after two minutes on train occupying berthing track Partially.
    b) Only after two minutes on train occupying berthing track.
    c) Releases immediately without any time delay.
    d) Time delay is must as train has not occupied berthing track

49. Emergency overlap release with the help of OYN button. Only when
    a) Only after two minutes on train occupying berthing track partially.
    b) Only after two minutes on train occupying berthing track.
    c) Releases immediately without any time delay.
    d) Releases immediately without any time delay, with the release of last Route Section.

50. Normalisation of G(N)LR ensures…
    a) Last Route Section is released.
    b) Overlap is Normal i.e. OVZU(N)R.
    c) Train is on berthing track.
    d) Both “b” & “c”

Chapter 5 : Automatic Route Release

1. UDKR…..
   a) Route clear indicating relay common for a Sub Route.
   b) Route clear indicating relay separate for each route section.
   c) Route clear indicating relay normally pickup.
   d) Route clear indicating relay normally pickup.

2. ZR Track Circuit Power Supply Checking relay.
   a) Use to ensure that TPRs drop only with train movement.
   b) It is an Normally drop relay.
   c) It is an Normally drop relay and Picks up with train movements.
   d) Picks up with train movements.

3. U(N)LR Sub Route normalizing relay
   a) Normalised to release locking on a set Route Section.
   b) Normalised to make Points and Slots in the Route Section free.
   c) Normalised to release locking on Signals conflicting, with the cleared Main Signal.
   d) Proves necessary conditions for Overlap release before setting time.

4. U(N)S Route Section normalizing relay
   a) Normalised to release locking on a set Route Section.
   b) Normalised to make Points and Slots in the Route Section free.
   c) Normalised to release locking on Signals conflicting, with the cleared Main Signal.
   d) Proves necessary conditions for Overlap release before setting time.

5. G(N)LR Signal Unlocking Relay
   a) Normalised to release locking on a set Route Section.
   b) Normalised to make Points and Slots in the Route Section free.
   c) Normalised to release locking on Signals conflicting, with the cleared Main Signal.
   d) Proves necessary conditions for Overlap release before setting time.

6. OVAJTR-2 Overlap Release Time Control relay no.2
   a) Proves necessary conditions for Overlap release before setting time.
   b) Provides for time lapse before an Overlap is released.
   c) Proves time lapse for releasing overlap.
   d) Releases Overlap either after 2 min. on train stopping at the Signal in advance or soon after the train run through.

7. OV AJTR Overlap Release Time Setting relay.
   a) Provides for time lapse before an Overlap is released.
   b) Overlap Release Time Setting relay.
   e) Normalised to make Points and Slots in the Route Section free.
   f) Normalised to release locking on Signals conflicting, with the cleared Main Signal.

8. OV-AJTR$_3$ Overlap Release Time control relay No.3
   a) Proves time lapse for releasing overlap.
   b) Normalised to make Points and Slots in the Route Section free.
   c) G(N)LR Signal Unlocking Relay
   d) Normalised to release locking on a set Route Section.

9. In the route release processes UDKR drops only
   a) When the Sub Route Tracks picks up.
   b) When the Sub Route is unlocked only.
   c) When the Sub Route is Unlocked, U(N)S up and track circuit is also pickup.
   d) Only U(N)S is up.

10. In case of a train running through on a set Route ahead, the Overlap gets released
   a) Without any time delay.
   b) without time delay, as soon as the last Route section of signal route is released,
   c) Time delay is ensured by OV AJTR.
   d) Only after pickup of AJTR2 and AJTR3.

11. G(N)LR gets picks up Only ,when
   a) when the set Routes and Overlap are normalized.
   b) Set Routes are normalized.
   c) Only Overlaps are normalized.
   d) When ZDUCR drops.

Chapter 6 : Emergency Operations

1. EGGNR…..
   a) Emergency Signal Replacement Button relay
   b) Emergency Signal Replacement control relay
   c) Signal Button Relay
   d) Common relay to prove the operation of any MN-GNR.

2. EUUYNR
   a) Emergency Route Release Button Relay (common for the station yard.)
   b) Relay proving Route Initiation during Emergency Route Release.
   c) Common relay to prove the operation of any MN-GNR.
   d) Signal Button Relay

3. STN-EUUYR
   a) Emergency Route Release Relay (common for station yard)
   b) Emergency Route Release relay (common for a station yard).
   c) Signal Button Relay
   d) Common relay to prove the operation of any MN-GNR.

4. For Manual Route Release operation…
   a) first GN and EGGN are pressed together and released.
   b) First GN and EUUYN are pressed
   c) Directly pressed EUUYN Button.
   d) EUUYN buttons is not required manual route release.

5. In full route cancellation GN Button is
   a) required to kept pressed till UN Buttons is pressed.
   b) May be release before EUUYN Button.
   c) EUUYN buttons is not required manual route release.
   d) UN buttons is not required manual route release.

6. In full Route cancellation, pressing of GN and UN button cause….
   a) Route Initiation.
   b) Only Route Sections get initiated to operate EUUYNCR.
   c) Route is initiated and ZDUCR picks up.
   d) Signal goes to danger.

7. In emergency Sub Route cancellation
   a) EUYR directly operates to release the Route section and normalize.
   b) EUUYR directly operates to release the Route section and normalize
   c) OYN directly operates to release the Route section and normalize.
   d) EUUYNCR directly operates to release the Route section and normalize

8. For Emergency Sub Route release controls to be pressed.
   a) WN and EUYN are operated together and released.
   b) WN and EUYN are operated together and released.
   c) GN and EGN are operated together and released.
   d) WN and EUUYN are operated together and released.

9. Emergency Sub Route release can also be performed ,when
   a) Even if, Point zone track is failed.
   b) Only when, point zone track is up.
   c) Only after delay of 2 minutes.
   d) After the release of Overlap

10 The Only Emergency cancellation which requires Signal Engineers authorization…
   a) **Sub Route Cancellation**.
   b) Emergency full route cancellation.
   c) Emergency point operation
   d) Emergency Overlap release.

Chapter 7 : Panel and Relay Group Indication Circuits

1. Normally failed conditions for Point is
   a) Indicated with flashing.
   b) Indicated with Steady Indication.
   c) Indicated with Steady red Indication.
   d) Indicated with Steady Yellow Indication.

2. Number of Indications provided over Major point groups are
   a) One
   b) Two
   c) Three.
   d) Four.

3. Indication on major point group, When point is set, locked and detected….
   a) 1st HKE Steady Indication.
   b) 1st HKE Flashing Indication.
   c) RKE steady Indication
   d) All three indications are flashing.

4. Indication on major point group, during point operation or point is failed
   a) 1st HKE Steady Indication.
   b) 1st HKE Flashing Indication.
   c) RKE steady Indication
   d) All three indications are flashing.

5. Indication on major point group when Point zone track circuit is failed
   a) RKE steady Indication.
   b) RKE flashing Indication
   c) All three indications are flashing
   d) 1st HKE Flashing Indication.

6. Number of Indications provided on three aspect signal groups are
   a) One
   b) Two
   c) Three.
   d) Four.

7. Indication on 3 Aspect Signal group,When Signal is Showing Red Aspect..
   a) RKE Steady.
   b) RKE is Flashing.
   c) DKE is flashing.
   d) DKE is Steady.

8. Indication on 3 Aspect Signal group, When Signal is supposed to show ON aspect and ON aspect is failed
   a) RKE is flashing.
   b) DKE is flashing.
   c) DKE is Steady.
   d) RKE Steady.

9. Indication on 3 Aspect Signal group, When Signal is showing Yellow aspect
   a) RKE is flashing.
   b) DKE is flashing.
   c) RKE Steady.
   d) DKE is Steady.

10. Indication on 3 Aspect Signal group, When Signal is showing Green aspect
    a) RKE is flashing
    b) DKE is flashing.
    c) DKE is Steady.
    d) RKE Steady.

11. Number of indications provided on Point Minor Group
    a) One
    b) Two
    c) Three
    d) Four

12. Indication on major point group, during point operation or point is failed
    a) RKE flashing
    b) RKE steady
    c) No Indication
    d) Blank

13. Indication on major point group, when point is set,locked and detected
    a) RKE steady
    b) No Indication
    c) Blank
    d) RKE flashing.

14. Number of indication provided on Route Group.
    a) One
    b) Two
    c) Three
    d) Four

15. Normal indication on Route Group when it is not engaged in any movement
    a) RKE Steady.
    b) No Indication
    c) RKE is flashing.
    d) HKE is Steady.

16. Indication on Route Group when, it is set with any route section…..
    a) RKE Steady.
    b) HKE is Steady.
    c) No Indication
    d) Both RKE and HKE steady.

17. Indication on Route Group when, it is set with any route section
    a) RKE Steady.
    b) HKE is Steady.
    c) No Indication
    d) Both RKE and HKE steady.

Chapter 8 : Slot Control

1. CH- YNR….
   a) Crank Handle Release Button.
   b) Common Slot Release Button Relay.
   c) Common Slot Return ack. Button Relay.
   d) Crank Handle key locked ‘IN’ Proving relay

2. YYNR
   a) Crank Handle Release Button.
   b) Common Slot Release Button Relay.
   c) Common Slot Return ack. Button Relay.
   d) Crank Handle key locked ‘IN’ Proving relay.

3. YRNR
   a) Crank Handle Release Button.
   b) Common Slot Release Button Relay.
   c) Common Slot Return ack. Button Relay.
   d) Crank Handle key locked ‘IN’ Proving relay.

4. CH1KLCR
   a) Crank Handle key locked ‘IN’ Proving relay
   b) Crank handle Slot Release relay
   c) Crank handle Slot Normal Relay
   d) Crank Handle Key Lock Relays

5. CH-KLR
   a) Crank Handle Key Lock Relays
   b) Common Slot Return ack. Button Relay.
   c) Crank handle Slot Normal Relay
   d) Common Slot Return ack. Button Relay.

6. CH –Y(R)R
   a) **Crank handle Slot Release relay**.
   b) Crank Handle Key Lock Relays.
   c) Crank handle Slot Normal Relay
   d) Crank Handle key locked ‘IN’ Proving relay

7. KLR at site is an ….
   a) Normally Pick-up Relay.
   b) Normally drop Relay.
   c) It gets drop immediately as Slot is transmitted.
   d) It gets drop, when route is initiated.

8. LXNR
    a) **Level Crossing control Button Relay**
    b) Common Slot Control Button Relay
    c) Common Slot Return ack. Button Relay
    d) Level Crossing Slot key in Proving relays
9. YYNR
    a) **Common Slot Control Button Relay**
    b) Level Crossing control Button Relay
    c) Common Slot Return ack. Button Relay
    d) Level Crossing Slot key in Proving relays
10. YRNR
    a) **Common Slot Return ack. Button Relay**
    b) Level Crossing control Button Relay
    c) Level Crossing Slot key in Proving relays
    d) Common Slot Control Button Relay
11. LXCPRS
    a) **Level Crossing Slot key in Proving relays**
    b) Level Crossing control Button Relay
    c) Common Slot Control Button Relay
    d) Common Slot Return ack. Button Relay
12. LXPR
    a) **Level Crossing Key Lock Relay**
    b) Level Crossing control Release relay
    c) Level crossing control Normal relay
    d) Level Crossing Slot key in Proving relays
13. LX(R)R
    a) **Level Crossing control Release relay**
    b) Level crossing control Normal relay
    c) Level Crossing Key Lock Relay
    d) Level Crossing Slot key in Proving relays
14. LX(N)R
    a) **Level crossing control Normal relay**
    b) Level Crossing control Release relay
    c) Level Crossing Key Lock Relay
    d) Level Crossing Slot key in Proving relays

Chapter 9 : Point Operation

1. $Z_1WR_1(1)$
   a) Pick up coil of Point control Initiating Relay-1 (common for 'N'& 'R' operations)
   b) Holding coil
   c) Pickup coil of Point Detection Relay-3.
   d) Point operation Time limiting Relay.

2. In the first stage which is common for normal and reverse initiations
   a) Z1WR1 picks up.
   b) Z1NWR picks up.
   c) Z1RWR picks up.
   d) Z2WR1 picks up.

3. This operation is called as normal point operation……
   a) When concern point button WN and common point button WWN simultaneously.
   b) When concern point button WN and common point button EWN simultaneously.
   c) When concern point button WN and common point button EUUYN simultaneously.
   d) When concern point button WN and common point button YYN simultaneously.

4. When the point zone track circuit is in failed condition, the point operation can be initiated by the operation of
   a) When concern point button WN and Emergency point button EWN.
   b) When concern point button WN and common point button WWN simultaneously.
   c) When concern point button WN and common point button EUUYN simultaneously.
   d) When concern point button WN and common point button YYN simultaneously.

5. Which Relay operates first in the group, when point is operated fro Normal to Reverse
   a) WKR1
   b) Z1RWR.
   c) Z1WR1(1)
   d) Z1WR1(2)

6. Which Relay operates first in the group, when point is operated from Reverse to Normal
   a) WKR1
   b) Z1RWR.
   c) Z1WR1(1)
   d) Z1WR1(2)

7. Which relay operates to break the detection of point from Normal to Reverse operation..
   a) WKR1
   b) WKR2
   c) WKR3
   d) WLR

8. Which relay operates to break the detection of point from Reverse to Normal operation
   a) WKR1
   b) WJR
   c) WKR3
   d) WR

9. When the point is Normal relays pick up in the group are…
   a) WKR1,(N)WLR,and W(N)R.
   b) WKR3,(N)WLR,and W(N)R.
   c) WKR2,(N)WLR,and W(N)R
   d) WKR1,(N)WLR,and W(R)R.

10. When the point is Reverse relays pick up in the group are…
    a) WKR1, (R)WLR and W(N)R.
    b) WKR3, (N)WLR and W(N)R.
    c) WKR2, (N)WLR and W(N)R
    d) WKR1, (N)WLR and W(R)R.

11. When point is operated from Normal to Reverse, which relay operates twice…
    a) WKR1
    b) WKR2
    c) WKR3
    d) Z1WR.

12. Relay indicates the end of point operation….
    a) WKR1
    b) WKR2
    c) WKR3
    d) Z1WR.

13. In point group ,which relay is picks up with 60V and 110 V DC
    a) WKR1
    b) WKR2
    c) WKR3
    d) WJR

14. Coil of -------- relay is provided in series of WKR1 circuit.
    a) WKR1
    b) WKR2
    c) WKR3
    d) WJR

15. Relays used to switch over the point from detection mode to operation mode.
    a) W(R)R.
    b) W(N)R
    c) W(N)LR
    d) W(R)LR

16. Z1WR1 is an
    a) Double Coil Relays.
    b) Neutral Relay.
    c) Interlocked Relay.
    d) Checking Relay.

17. Purpose of use of double coil relays in point operation circuit is
    a) To keep the condition live at all time.
    b) It remains in the last operated position.
    c) To keep the condition live when the first condition is cut off.
    d) It is an slow to pickup relay.

18. Relay prove out of correspondence, when Point at site is Normal and group inside the cabin is Reverse.
    a) WKR1
    b) WKR2
    c) WKR3
    d) RWKR.

19. Though the Coil of WKR2 is in series with WKR1,but WKR2 will not pickup as…
    a) As current required to operate WKR2 is not sufficient in detection mode.
    b) Because both are interlocked relays.
    c) WKR2 May be picksup ,but drops immediately
    d) Because WKR2 is normally drop relay.

20. During Normal to Reverse operation, when point group changes its position from (N)WLR to (R)WLR relays picks up for change in correspondence….
    a) RWKR.
    b) WKR1
    c) WKR3
    d) WKR2

21. Point Operations buttons contacts are proved in the of _____relay
    a) Both in Z1NWR & Z1RWR.
    b) Only in Z1RWR.
    c) Only in Z1RWR.
    d) WKR2

22. Relay affords overload protection to Point motor by cutting off operation feed when point fails to operate in time.
    a) WKR2
    b) WKR3
    c) WJR
    d) WR

23. Relay used for switching heavy starting current of Point motor through its front contacts.
    a) WKR2
    b) WR
    c) WJR
    d) WKR3

24. Resistance provided in series of WKR3 coil is to….
    a) Protect the coil ,when it is pickup by 110 VDC
    b) To drop the relay.
    c) To avoid interference from another circuit.
    d) To cut the feed.

Objective Questions

Chapter 1 : Introduction

1. Route setting type Relay Interlocking (Route Relay Interlocking) system is adopted for
   a) Major Yard
   b) Way Side Station.
   c) As per new circular for any new installation Route Setting type.
   d) Only for Major Yard.

2. The only difference of Siemens Route Relay Interlocking with respect to Siemens Panel Interlocking is that
   a) It has the additional facility to set the points on the route.
   b) It has the additional facility to set the points on the route and, overlap.
   c) it has the additional facility to set the points on the route, overlap and in isolation automatically.
   d) It has the additional facility to set the points in the isolation only.

3. Point Group used in case of Route setting type Relay Interlocking
   a) Minor Group.
   b) Major Group
   c) Mini Group.
   d) Point Chain Group.

4. In case of Route setting type Relay Interlocking additional Group used for sequential point operation along with Point Major Group.....
   a) Minor Group.
   b) Mini Group.
   c) Point Chain Group.
   d) Timer Group.

5. In case of Route setting type Relay Interlocking for the clearance of signal.....
   a) Points are required to be operates individually.
   b) Only points in the isolation are required to operate.
   c) Points in the Route, Overlap and in isolation operate automatically, with the pressing of GN and UN Buttons.
   d) Points in the overlaps are required to operate only.

6. Auto operation of Point in the Route takes place with the pickup of relays as ……...
   a) OVZ2U(R)R
   b) U(R) S.
   c) UZ4(R) R.
   d) WN and WWN.

7. Auto operation of Point in the Overlap takes place with the pickup of relays as ……...
   a) OVZ2U(R)R
   b) UZ4(R) R.
   c) WN and WWN.
   d) U(R) S.

8. Auto operation of Point in the Isolation takes place with the pickup of relays as ….....
   a) UZ4(R) R
   b) U(R) S.
   c) OVZ2U(R)R
   d) WN and WWN.

9. In case of Route setting type Relay Interlocking
   a) NWKR & RWKR are normally pickup.
   b) NWKR & RWKR are normally dropped
   c) NWKR is only pickup.
   d) RWKR is only pickup.

10. NWKR / RWKR are normally de-energized, picks up only.
    a) When route setting is done.
    b) Overlap is set.
    c) If the point set in route then with U(R)S if in Overlap then with OVZ2U(R)R.
    d) When the Route sections are set then only.

Chapter 2 : sequence of Operations

1. Z1UR1 is ……....
   a) Sub Route Initiating Relay.
   b) Diversion Selection Relay.
   c) Route Section Initiation Relay.
   d) Isolation Point setting Relay.

2. Purpose of Z1UR1 in case of RRI is to check ….....
   a) The movement initiated for Main line or for diversion.
   b) The movement initiated for Main line.
   c) The movement initiated for diversion line.
   d) The movement over isolated portion.

3. Z1UR1 is normally ….....
   a) Pickup Relay.
   b) Drop Relay.
   c) Slow to pickup Relay
   d) Slow to release Relay.

4. Back Contact of Z1UR1 is used for....
   a) The movement initiated for diversion line.
   b) The movement over isolated portion.
   c) The movement initiated for Main line.
   d) The movement initiated for Main line or for diversion.

5. Front Contact of Z1UR1 is used for....
   a) The movement initiated for diversion line.
   b) The movement over isolated portion.
   c) The movement initiated for Main line**.**
   d) The movement initiated for Main line or for diversion.

6. Z1UR1 is always designated after the name of..
   a) Point Number.
   b) Route Section number.
   c) Sub Route number.
   d) Signal number.

7. Whenever any main signal GN and UN buttons are pressed, relays picks up to initiate Sub Routes are.....
   a) Z1UR1
   b) Z1UR.
   c) Sh GZR
   d) Sh GNPR

8. Z1UR1 Relays is pickup only for....
   a) Main Signal movement.
   b) Shunt Signal movement.
   c) For Main as well as Shunt Signal movement.
   d) Only for Shunt Signal movement.

9. When concern Z_1UR relay picks up, it switches on route group by picking up relevant.....
   a) Sub Route.
   b) Concerns U(R)S in the Sub Route.
   c) Overlaps.
   d) Isolation Point Setting Relays.

10. In case of auto operation of point, points in the route are operated with the pickup of...
   a) U(R) S.
   b) OVZ2U(R) R.
   c) UZ4(R) R.
   d) Z3WR.

11. In case of auto operation of point, points in the Overlap are operated with the pickup of...
   a) UZ4(R) R.
   b) Z3WR.
   c) U(R) S.
   d) OVZ2U(R) R.

12. In case of auto operation of point, Normal Point operation is imitated due to
   a) A U(R)S
   b) B U(R)S
   c) OVZ2U(R)R
   d) OV-2 Z2U(R) R.

13. Auto operation of point can be initiated only when.....
   a) Point zone track circuit is pickup.
   b) Even though the point zone track circuit is failed.
   c) Point zone track circuit is not included.
   d) Only proved in case of points in overlap.

14. Auto operation of point can be initiated only when.....
   a) WKR2 is pickup.
   b) WKR1 is pickup.
   c) WKR3 is pickup.
   d) UZ4(R)R

Chapter 3 : Siemens Major Point Group with Point Machines

1. In point major group first relay to pickup during Individual operation
   a) Z1WR.
   b) Z1WR1
   c) Z3WR.
   d) WWYR.

2. First relay to operate in the Point group, under route initiation to operate a point in the route, overlap or isolation.
   a) Z1WR.
   b) Z1WR1
   c) Z3WR.
   d) WWYR.

3. If a point is flashing during initiation of a route,
   a) Point Operation will not get initiate.
   b) Point Operation will get initiate.
   c) Point Operation will initiate, but WKR1 will not pickup.
   d) It will not get affects, as point zone track circuit is pickup.

4. Z1WR will pick up only when…..
   a) Either U(R)S or OVZ2U(R) along with WKR1 is up.
   b) Either U(R)S or OVZ2U(R).
   c) It requires only WKR1 to pickup.
   d) Buttons Contacts WN & WWN is sufficient.

5. Z_1WR drops only after the point group is initiated and dropping of
   a) WKR1 .
   b) WKR2.
   c) WKR3
   d) WWR

6. WLR Relay is …….....
   a) Point Locking Neutral Relay.
   b) Point Locking Interlock Relay.
   c) Point Locking Neutral K-50 B Type Relays.
   d) Point Locking Neutral K-50 E Type Relays.

7. WLR Relay checks that, point group is initiated due to
   a) Actual Route setting i.e. Z1UR and ZDUCR is pickup.
   b) U(R) S is pick up.
   c) Only U(R) S is sufficient to ensure route initiation.
   d) Only Z1WR is sufficient to ensure route initiation.

8. WLR Relay checks…..
   a) Track Locking condition.
   b) Approach locking.
   c) Back locking
   d) Indication locking

9. WLR helps in sequential operation of points and pickup..
   a) Z3WR.
   b) WWR.
   c) WWYR.
   d) WNCR

10. WLR (2) relay will drops only when..
   a) WKR2 picks up and point is under operation mode.
   b) When point detection is removed WKR1 drops.
   c) After complete operation of point.
   d) When WWYR picks up.

11. WWR is named as
   a) Point Chain Group Relays.
   b) Point to Point Reverse Relay.
   c) Point Chain Group Initiating Relay.
   d) End of Point Chain command Relay.

12. Z3WR is named as …
   a) Point Chain Group Initiating Relay.
   b) Point to Point Reverse Relay.
   c) End of Point Chain command Relay.
   d) Isolation Point Setting Relay.

13. R1 -220 Ω, it is connected in series with the second coil of Z_1RWR
   a) It prevents the 60 V positive from being shorted to 60 V negative when (N) WLR_3 drops.
   b) It prevents the 60 V positive from being shorted to 60 V negative when (R)WLR_3 drops.
   c) Serves to isolate the condenser from the 60 V supply after WJR has picked up.
   d) It reduces the initial charging surge of the condenser and improves the time delay for WJR to drop.

14. R2 - 220 Ω, it is connected in series with the second coil of Z_1NWR
   a) It prevents the 60 V positive from being shorted to 60 V negative when (R)WLR_3 drops.
   b) It prevents the 60 V positive from being shorted to 60 V negative when (N) WLR_3 drops.
   c) Serves to isolate the condenser from the 60 V supply after WJR has picked up.
   d) It reduces the initial charging surge of the condenser and improves the time delay for WJR to drop.

15. R3 - 600 Ω, it is connected in parallel with WR back contact in the WR circuit.
    a) **It reduces the holding current of WR relay .WR requires a higher pick up current.**
    b) It prevents the 60 V positive from being shorted to 60 V negative when (N) WLR_3 drops.
    c) Serves to isolate the condenser from the 60 V supply after WJR has picked up.
    d) it prevents the 60 V positive from being shorted to 60 V negative when (R)WLR_3 drops

16. R4 - 18000 Ω, it is connected in series with the WJR condenser as it
    a) **Serves to isolate the condenser from the 60 V supply after WJR has picked up.**
    b) It prevents the 60 V positive from being shorted to 60 V negative when (R)WLR_3 drops
    c) It prevents the 60 V positive from being shorted to 60 V negative when (N) WLR_3 drops.
    d) It reduces the holding current of WR relay .WR requires a higher pick up current

17. R5 - 39 Ω, it is connected in series with the WJR condenser as it ….
    a) **It reduces the initial charging surge of the condenser and improves the time delay for WJR to drop.**
    b) It reduces the initial charging surge of the condenser and improves the time delay for WJR to drop.
    c) It prevents the 60 V positive from being shorted to 60 V negative when (R)WLR_3 drops
    d) It reduces the holding current of WR relay .WR requires a higher pick up current.

18. R6 – 270 Ω, it is connected in series with the coil of WKR_2 relay. WKR_2 relay is connected in series with WKR_1 relay but it does not pick up as it requires a higher pick up current .So
    a) **When the coil of WKR_1 is not in its circuit the WKR_2 relay picks up. Thus WKR_2 picking up is prevented by WKR_1 coil resistance and R6 in series.**
    b) It reduces the holding current of WR relay .WR requires a higher pick up current.
    c) It reduces the initial charging surge of the condenser and improves the time delay for WJR to drop.
    d) It reduces the holding current of WR relay .WR requires a higher pick up current.

19. R7 - 1000 Ω, it is connected in series with the WKR_3 relay because it
    a) **Drops the 110 V supply for the WKR3 relay to pick up which has a 60 V coil.**
    b) It reduces the holding current of WR relay .WR requires a higher pick up current.
    c) It reduces the holding current of WR relay .WR requires a higher pick up current.
    d) Serves to isolate the condenser from the 60 V supply after WJR has picked up.

20. When a point falls in the route/overlap/isolation, Relay operates to lock the point group electrically.....
    a) **W(R)LR picks up and locks the point group electrically.**
    b) WLR picks up and locks the point group electrically.
    c) U(R)LR picks up and locks the point group electrically.
    d) G(R)LR picks up and locks the point group electrically.

21. In case of Normal to Reverse Operation which relay pickup twice.....

a) WKR2

b) WKR3

c) WKR1

d) Z3WR.

Chapter 4 : Siemens Point Chain Relay Group

1. WWR is named as
   a) Point Chain Group Relays.
   b) Point to Point Reverse Relay.
   c) Point Chain Group Initiating Relay.
   d) End of Point Chain command Relay.

2. Z3WR is named as ……..…
   a) Point Chain Group Initiating Relay.
   b) Point to Point Reverse Relay.
   c) End of Point Chain command Relay.
   d) Isolation Point Setting Relay.

3. Z3WR is normally.
   a) Pickup Relay.
   b) Normally drop relay.
   c) Slow to pickup relay.
   d) End of Chain Operation Relay.

4. Condition to pickup Z3WR is ……..…
   a) Z1WR and WLR are up.
   b) Only Z1WR is up.
   c) Only WLR is up.
   d) Z1WR and WLR is drop.

5. Z3WR is made Slow to release ……..…
   a) For smooth working of chain group.
   b) To prevent Z1WR and WLR to drop.
   c) To prevent ZDUCR to drop.
   e) To prevent WWYR to drop.

6. WWYR is a normally ……..…
   a) Pickup relay.
   b) Drop relay.
   c) Slow to pickup relay.
   d) Slow to drop relay.

7. Main function of WWYR Relay is
   a) End of Chain Operation by dropping Z3WR.
   b) Helps in sequential operation of points.
   c) To prevent Z1WR and WLR to drop.
   d) It provides smooth working to Chain group.

8. Chain Groups always gives command for at least.
   a) Two Point for operation.
   b) Three Points for operation.
   c) Four Points for operation.
   d) One point for operation.

9. In a Chain Group commands for the operation of third points starts only ……..…
   a) When the WLRs of first two point drops.
   b) When the WLRs of first point is drops.
   c) When the WLRs of second point is drops.
   d) WWYR is drop.

10. In case of RRI, points in the isolation are operated by…
    a) UZ4(R)R
    b) OVZ2U(R) R.
    c) U(R) S.
    d) ZDUCR

11. Pickup of 8th WWR in Chain group drops ……..
    a) WWYR.
    b) WLR
    c) WKR2
    d) WKR3.

12. If the point is in required position to the route initiated ……..….
    a) Point will not operate and locks directly by W(R) LR.
    b) First point has to operate then it gets locks by WLR.
    c) First point has to operate then it gets locks by W(R) LR.
    d) Point will not operate and locks directly by UZ4(R) R.

13. $Z2WR_1$ is used for
    a) Both Normal and Reverse indications of the point.
    b) Reverse indications of the point.
    c) Only Normal indications of the point.
    d) Only indications of the point.

14. Chain Groups are always provided in accordance to the ……..…
    a) Number of points.
    b) Depends upon the number of Major Point Group in a Relay racks.
    c) Depends upon the number of Minor Point Group in a Relay racks.
    d) It is Common for the entire yard.

15. The number of Major Point Group in a Relay Rack is

a) 8

b) 5

c) 16

d) 12

Objective Questions

Chapter-1 : EI Basics

1. Prime inputs for the EI Interface design are ---------- (a)
   a) SIP, FPD and RCC b) card files
   c) Software d) cables

2. The calculation of EI card file /OC/Housing is mainly depends on ---------- (c)
   a) Communication ports b) Communication cables
   c) Vital & Non vital bit chart d) Software

3. In EI, application software is----------. (b)
   a) Common to all stations b) Station specific
   c) Similar to Executive software d) remotely loaded

4. In case of Distributed Interlocking system, _____ cable is required to be used (b)
   a) Object Controllers b) Optical Fiber Cable
   c) Aluminum cable d) No cable required

5. In Electronic interlocking system, executive software is ---------- (b)
   a) Station specific.
   b) Common to all EI's of same model of same OEM.
   c) Similar to Application software
   d) Separately not required.

6. When any unsafe failures are recognised by an EI ---------- (d)
   a) System is steady
   b) Supply voltage to non vital outputs cuts off
   c) No action takes place
   d) System shutdown and all outputs withdrawn.

7. External Data logger provision to EI is ---------- (b)
   a) Not mandatory b) Mandatory
   c) It is a part of EI Hardware d) It is a part of VDU

8. All Electronic Interlocking Systems have (a)
   a) self-diagnostic feature b) No diagnosis process
   c) Inbuilt object controllers d) Housing system

9. By using Object Controllers ---------- (b)
   a) communication cable can be reduced
   b) Main signaling cables can be eliminated due to OFC communication
   c) Cost factor can be minimized
   d) Failures can be minimized

10. Based on ---------- calculation, number of I/O cards can be calculated. (d)

a) Connectors b) wires

c) card files d) Vital & Non Vital I/O bit

11. _____ works with communication cables (b)

a) TC b) RRI c) EI d) PI

12. EI has inbuilt ---------- (a)

a) Event logger b) Axelcounter

c) OCs d) Block Instrument

13. The ---------- converts High level language to Machine Language (c)

a) Source code b) Object code

c) Compiler d) Reverse compiler

14. As per latest guide lines ---------- standby set up is to be used in EI. (d)

a) Cold standby b) Warm standby

c) power backup d) Hot Standby.

15. ---------- cable is required for the VDU connectivity with EI (d)

a) Copper cable b) 1.5 Sq mm Signaling cable

c) power cable d) Serial communication / OFC

16. An EI can be operted by ---------- (d)

a) CCIP only b) PP

b) OC d) VDU as well as CCIP

17. The vital out card in an EI ---------- (b)

a) Drives INPUT

b) Delivers output to drive a OUTPUT relays

c) part of CPU

d) 12 V DC

18. The EI application logic is loaded in to ---------- (b)

a) Non Vital I/O card

b) CPU card

c) Output card

d) CPU and Out put cards.

19. _____ earthing arrangement is required for EI (c)

a) 2 ohms

b) 10 ohms

c) Perimeter/ ring

d) 10 Megha ohms

20. The external Data logger can be connected to EI through---------- (a)

a) Protocol converter b) Flash EPROMs

c) OFC d) OC

21. To start Application design of EI, the Inputs required are _____ (a)

A) Approved Signal Interlocking Plan & Front Plate Drawing and RCC

B) CT rack termination details.

C) Details of any additional interlocking equipment only.

D) Communication details only.

22. Example for software redundant EI system is ---------- (b)

a) MEI 633 b) MLK II

c) VHLC d) K5BMC

23. Example for Hardware redundant EI system is---------- (a)

a) MEI 633 b) MLK II

c) WESTRACE d) SIMIS

24. ---------- safety Integrity level to be maintained for Hardware of any EI (d)

a) SIL 1 b) SIL 2

c) SIL 3 d) SIL 4

25.Based on Non Vital I/O bit calculation, ---------- can be calculated. (a)

a) Panel processor cards b) wires count

b) power supply detailes d) communication details

26. EI needs ---------- space (b)

a)more b) less

c) no d) Equal to RRI

27. Self intigrity test is the inbuilt feature of---------- (a)

a) EI b) RRI

c) Track circuit d) PI

28. The Reverse Compiler converts ---------- (b)

a) The Source code b) Object code to source code

c) High level language to Machine Language d) Compiler

29.In Hot Standby arrangement ----------. (d)

a)Cold standby b) only one system ON

c) power backup d) Both systems power ON.

30.The RS 232 serial communication cable is used as (d)

a) Copper cable b) 1.5 Sq mm Signaling cable

c) power cable d) VDU connectivity cable with EI

31. In Warm standby arrangement ---------- (b)

a) Both systems contineously ON b) Only one system is switched ON

c) Redundent d) Both systems OFF

32. ---------- verifies the INPUT relay status in an EI (a)

a) INPUT card b) The vital out card

c) CPU d) NV I/O card

33.The CPU card is loaded with (b)

a) Non Vital data only b) Application logic & Executive logic

c) Output relay status only d) operating parameters alone

34. Surge protection arrangement is must for (d)

a) RRI b) Track circuit

c) PI d) EI

35. ----------is connected through Protocol converter (a)

a) The external Datalogger b) Flasher EPROM

c) OFC d) OC

36. The interface between CCIP and the EI is called _____ (c)

a) OCI

b) VDUCT

c) PP

d) NV I/O card

37. MLK II EI is an Example for ---------- (b)

a) Hardware redundant EI system b) software redundant EI system

c) TMR d) 2OO2

38. MEI 633 is the Example for ---------- (a)

a) Hardware redundant EI system b) software redundant EI system

c) TMR d) 1OO2

39. SIL 4 safety integrity level is required for (d)

a) VDU Hardware b) MTC

c) VDU software d) EI Hardware

40. ---------- contacts are used as Read back contacts (b)

a) Vital in put Relay b) Vital output Relay

c) Non Vital d) Event logger

41. EN 50126 deals with ---------- (c)

a) EMC b) Software

c) RAMS d) Communication

42. EN 50121 deals with ---------- (A)

A) EMC B) Software

C) RAMS D) Communication

43. _____PROMS is loaded with Application software. (C)

A) I/O B) Executive

C) Data D) Communication

44. NWKRs, RWKRs are treated as _____ to the Electronic Interlocking system (A)

A) Vital in puts B) Vital outputs

C) Non Vital Inputs D) Non Vital outputs

45. NWKEs, RWKEs are treated as ____ to the Electronic Interlocking system (D)

A) Vital in puts B) Vital output s

C) Non Vital Inputs D) Non Vital outputs

46. HRs, DRs are treated as _____ to the Electronic Interlocking system (B)

A) Vital in puts B) Vital outputs

C) Non Vital Inputs D) Non Vital outputs

47. LXPR, LCPR are treated as _____ to the EI (A)

A) Vital in puts B) Vital outputs

C) Non Vital Inputs D) Non Vital outputs

48. Based on the station interlocking circuits _____ program is prepared (A)

A) Application B) Executive

C) Station Data D) Communication

49. ----------is used as an operating interface to the EI (C)

A) Object controller B) Maintenance PC

C) VDU/OPC D) Data logger

50. Executive program is loaded in to ---------- (B)

a) Data EPROMs B) Executive EPROMS

C) I/O connecters D) VDU Pc

Chapter-2 : MLK-II

1. In Microlok-II card file ---------- prevents plugging of wrong type of card. (c)
   a) Code pins b) address select jumpers
   c) keying plugs d) software prevents .

2. In Microlok II, each card file has ---------- slots. (b)
   a) 16 b) 20 c) 14 d) 10

3. Microlok-II is a ---------- system. (b)
   a) 2 out of 2 architecture b) 1out of 1 architecture
   c) 2 out of 3 architecture d) TMR.

4. In Microlok-II, ----------are used to address particular slot of the card file. (b)
   a) EEPROM b) Address select jumpers
   c) Dip switches d) PROMs

5 .In Microlok-II card file, CPU card occupies ---------- slots. (d)
   a) 16 and17 slots b) 1 and 2 slots
   c) 14 and 15 slots d) 18 and 19 slots

6. In Microlok-II---------- pin Connector assembly is used for Power supplycard (c)
   a) 16 b) 2 c) 48 d) 96.

7. The System power supply for MLK-II EI is---------- (b)
   a) 16 v DC b) 12 v DC c) 48 v DC d) 96 v DC.

8. The ---------- card makes System Integrity checks and System health status (d)
   a) SYNC card b) ECB card
   c) OUT 16 d) CPU card

9. In MLK-II EI, _____supply is connected to the system for O/P relay driving (d)
   a) 16 v DC b) 12 v DC
   c) 50 v DC d) 24 v DC.

10. The external Data logger can be connected to MLK-II through---------- (a)
   a) Protocol converter b) Flash EPROMs
   c) OFC d) OC

11. In Microlok-II, the 48 Pin Connector assembly is used for _____ (C)
   A) Vital Input boards only B) Vital Output boards only
   C) Vital Input and Output boards D) Non-vital I/O boards

12. In Microlok-II, the 96 Pin connector assembly is used for _____ (D)
   A) Vital Input boards only B) Vital Output boards only
   C) Vital Input and Output boards D) Non-vital I/O boards

13. In Microlok-II, each card file should be provided with _____ (D)

A) Panel processor B) OC

C) VCOR D) CPU card, Power supply card, I/O cards

14. In Microlok-II, Application Program ' * ' symbol is used for _____ (A)

A) SERIES B) PARALLEL

C) BACK CONTACT D) BIT SEPERATION

15. In Microlok-II, Application Program '+ ' symbol is used for _____ (B)

A) SERIES B) PARALLEL

C) BACK CONTACT D) BIT SEPERATION

16. VCOR Relay has _____ contacts. (C)

A) 8F/B B) 4F/B C) 6F/B D) 2F/B

17. VCOR Relay contact current rating is____ Amp (B)

A) 1A B) 3A C) 5A D) 50mA

18. In Microlok-II CPU card is provided with _____ processor. (C)

A) 68000 B) 8086 C) 68332 D) Intel Pentium

19. In Microlok-II system, CPU card is provided with _____ no. of ports. (B)

A) 4 serial and 1 parallel

B) 5 serial

C) 4 parallel and 1 serial

D) 5 parallel.

20. In Microlok-II system, Input capacity of each Vital input card is_____ (B)

A) 8 input B) 16 input C) 32 input D) 64 input

21. In Microlok-II system, each vital output card drives _____no. of relays (C)

A) 4 B) 8 C) 16 D) 32

22. In Microlok-II system, each Non-vital input- output card can be connected with maximum _____ no. of inputs and _____ no. of outputs respectively. (D)

A) 16 Inputs & 16 Outputs B) 8 Inputs & 8 Outputs

C) 16 Inputs & 32 Outputs D) 32 Inputs & 32 Outputs

23. Non-vital Inputs are (A)

A) Control Panel Push Buttons & Key contacts

B) Track Circuits TPRs. Point Detection

C) VCOR indication

D) None

24. In MLK-II Card File, the PS Card is normally placed in the slot no. ____ (C)

A) 18&19 B) 15&16 C) 16&17 D) 20

25. In Microlok-II, MTC can to connect to Port No._____ of CPU card. (D)

A) 1 B) 3 C) 4 D) 5

26. Each Vital input PCB occupies (b)

a) 2 slots b) 1 slot c) 3 slots d) 4 slots

27. Each NonVital I/O PCB occupies (b)

a) 2 slots b) 1 slot c) 3 slots d) 4 slots

28. In Microlok-II, Vital I/O cards are suitable for ---------- (c)

a) 6 V DC b) 10 V DC c) 24 V DC b) 50 v Dc

29. In Microlok-II, Non-Vital cards are suitable for (c)

a) 6 V DC b) 10V DC c) 24 V DC b) 50 v Dc

30. VCOR relay has (a)

a) 6F/B dependent contact b) 6F/6B independent contact

c) 6F. 6B contact d) 3F.3B

31. VCOR Relay rated current (b)

a) 3 ma b) 3 A c) 30 ma d) 30 A

32. Slow to pick" is defined as (a)

a)"SET = 1 SEC" b) "Clear = 1 SEC"

c) "SETUP = 1 SEC" d) "DELAY=1SEC"

33. Slow to Release" is defined as (b)

a)"SET = 1 SEC" b) "Clear = 1 SEC"

c) "SETUP = 1 SEC" d) "DELAY=1SEC"

34. Microprocessor used in Microlok-II is (a)

a) Motorola 68332 b) Intel 8086

c) Intel 68332 d) Motorola 8086

35. In the Card File the Power Supply PCB is placed in (b)

a) Slot No. 18 & 19 b) Slot No. 16 & 17

c) Slot No. 15 & 16 d) In any slot.

36. In Microlok-II system ---------- are used for vital interface. (A)

A) RS-485 serial ports B) RS-232 serial ports

C) 96 Pin connector D) Keying plugs

37. In Microlok-II system ---------- are used for Non-Vital data interface. (B)

A) RS-485 serial ports B) RS-232 serial ports

C) 96 Pin connector D) Keying plugs

38. In Microlok-II card file, Max .---- nos. of Input/ Output interface cards can be accommodated (C)

A) 2 B) 4 C) 16 D) 20

39. In Microlok-II card file, Power supply card occupies ---------- slots. (A)

A) 2 B) 4 C) 16 D) 20

40. In Microlok-II ---------- is provided with FLASH ROMs / EEPROMs for storing the executive and application software. (D)

A) Vital I/O cards B) IN 16 C) SOFTWARE D) CPU Card

41. In MLK-II, Error codes are displayed in---------- (B)

A) Power Supply Card B) CPU card

C) VCOR D) CPU card, Power supply card, I/O cards

42. In MLK-II, fast static RAMs are used for storing _____(c)

(a) Application program (b) Application program &Executive program

(c) Event logger data (d) Installation Address

43. ---------- of Flash EPROMs are used in the CPU card for program data (b)

a) 2 Nos fast static RAM b) 4 nos

c) one d) 3 nos

44. Application program in the MLK-II EI is written in ---------- (B)

A) 'C' language B) Boolean equations

B) UNIX D) assembly language

45. EE PROM is provided in ----------connector (C)

C) SYNC card B) ECB card C) CPU card D) 96 pin

46. 1 to 8 LEDs in the CPU card are meant for ---------- messages (b)

a) communication b) user defined error

c) VCOR indication d) point indication.

47. In MLK_II EI, CPS means ---------- (b)

a) Communication power supply b) conditional power supply

c) Continuous power supply d) contiguous power supply

48. In MLK_II EI, CPS is ----------HZ (A)

A) 256 B) 512 C) 250 D) 20

49. ----------v dc supply is used to drive all the PCBs (D)

A) +12 B) -12 C) +24 D) +5

50. VCOR is required for---------- (c)

a) Any MLK-II card file b) MLK-II card file having Vital INPUT cards

c) MLK-II card file having Vital OUTPUT cards d) MLK-II card file with PS card

Chapter-3 : Medha EI

1. MEI 633 is of ---------- architecture (a)
   a) 2 Out of 2 b) 1 Out of 1
   c) 2 Out of 3 d) 2 Out of 4

2. Cycle time in MEI633 is ---------- (d)
   a) 222ms b) 111ms
   c) 444ms d) 333ms

3. Intercommunication between MEI633 and the OCs is ---------- (c)
   a) CLA b) RS-232/OFC
   c) RS 485/OFC d) RS-423

4. Input supply for the Mini IPS provided in Medha EI room is ---------- (d)
   a) 24V DC b) 230V AC
   c) 110V AC d) 110V DC

5. The output supply of Dc-Dc converters in the Mini IPS of MEI 633 is --------- (a)
   a) 24V DC b) 12V DC
   c) 110V DC d) 60V DC

6. Inter communication between MEI 633 and datalogger is ---------- (c)
   a) RS-485/OFC b) CLA
   c) RS- 232/OFC d) RS-423

7. Max No of Ocs that can be connected to MEI633 is ---------- (d)
   a) 64 b) 128
   c) 16 d) 32

8. Max No of Input cards that can be provided in each OC is ---------- (c)
   a) 6 b) 4
   c) 5 d) 3

9. Max No of output cards that can be provided in each OC is ---------- (d)
   a) 6 b) 4
   c) 5 d) 3

10. Max No of inputs that can be connected to each Vital I/P card is ------ (a)
    a) 8 b) 16
    c) 32 d) 12

11. Max No of outputs that can be connected to each Vital O/Pcard is ------- (d)
    a) 4 b) 16
    c) 32 d) 8

12. ---------- type of power supply card is provided for CVC/VIC card. (a)

a) B TYPE b) C TYPE

c) A TYPE d) D TYPE

13. ---------- type of power supply card is provided for CCC card. (a)

a) B TYPE b) C TYPE

c) A TYPE d) D TYPE

14. ----------type of power supply cards are provided for OCs. (b)

a) A & B TYPE b) B & C TYPE

c) C & D TYPE d) A & D TYPE

15. ---------- type of power supply cards are provided for PP. (a)

a) A & B TYPE b) B & C TYPE

c) C & D TYPE d) A & D TYPE

16. ---------- No of Rs485 serial ports are available at CIU (b)

a) 16 b) 12

c) 8 d) 10

17. ---------- No of Rs232 serial ports are available at CIU (a)

a) 3 b) 8

c) 4 d) 2

18. ERROR messages are displayed on ---------- of CIU (d)

a) FDP b) FMS

c) VIF d) FPD

19. Max No of vital I/Os that can be handled by an CIU of MEI633 ----- (b)

a) 4072 b) 2048

c) 1048 d) 3072

20. Max No of Non vital I/Os that can be handled by an CIU of MEI633 ----- (d)

a) 4072 b) 2048

c) 1048 d) 3072

21. In Medha EI, RM means ---------- (b)

a) Random Memory b) Relay Module

b) Ring Modem d) Repetition Maximum

22. In Medha EI, RMs acts like---------- converter (a)

a) SERIAL to OFC b) SERIAL to PARELLEL

c) PARELLEL-OFC d) SERIAL-USB

23. In each port of CIU---------- No of Ocs can be connected. (c)

a) 8 b) 6 c) 4 d) 32

24. CIF card is used in---------- (d)

a) OC b) PP

c) MT d) CIU

25. In MEI633y The rated voltage of VCOR---------- (d)

a) 12V DC b) 5 V DC

c) 60V DC d) 24V DC

26. MEI 633 has ---------- stand by arrangement (a)

a) Hot
b) Warm
c) Cold
d) None

27. Max response time for MEI633 is ---------- (c)

a) < 1 sec
b) < 2 sec
c) < 3 sec
d) < 4 sec

29. Intercommunication between MEI633 and the PP is ---------- (c)

a) Parellel
b) Rs-232
c) OFC
d) Rs-423

29. Input supply for the PSB cards provided in Medha EI is----------
(b)

a) 5V DC
b) 24V DC
c) 12V DC
d) 4.8V DC

30. The output supply of PSB in MEI 633 is---------- (a)

a) 4.5V DV
b) 5.5V DC
c) 4.8V DC
d) 5.8V DC

31. ----------communication channel provide between MEI 633 and MTC (b)

a) Rs-423
b) Rs-232
c) CLA
d) Rs-485

32. Max No of CIUs that can be inter connected to MEI633 is---------- (a)
    a) 2 to 4
    b) 2 to 6
    c) 2 to 5
    d) 2 to 3

33. Max No of RS 485 channels provided in each CIU is ---------- (b)
    a) 8
    b) 12
    c) 10
    d) 16

34. Max No of RS 232 channels provided in each CIU is ---------- (d)
    a) 6
    b) 5
    c) 4
    d) 3

35. Max No of I/Ps connected to each nonVital Input card of a PP is ------- (c)
    a) 8
    b) 16
    c) 64
    d) 128

36. Max No of O/Ps can be connected to each nonVital O/P card of a PP is (d)
    a) 8
    b) 16
    c) 128
    d) 64

37. 'A' - type of power supply card is provided for ------. (d)
    a) CIU
    b) OC
    c) COUNTER BOX
    d) PP

38. 'C'- type of power supply card is provided for ----------. (b)
    a) CIU
    b) OC
    c) COUNTER BOX
    d) PP

39. 'B'- type of power supply cards are provided for ----------. (a)
    a) CIU
    b) Mini IPS
    c) MTC
    d) Datalogger

40. Voltage & Current rating of 'B' type of power supply cards ----------. (b)
    a) 4.5V @ 8A
    b) 4.5V @ 3A
    c) 4.5V @ 6A
    d) 4.5V @ 2A

41. Voltage & Current rating of 'C' type of power supply cards ----------. (c)
    a) 4.5V @ 8A
    b) 4.5V @ 3A
    c) 4.5V @ 6A, 5.8@ 2A
    d) 4.5V@ 2A

42. Voltage & Current rating of 'A' type of power supply cards ----------. (a)
    a) 4.5V @ 8A
    b) 4.5V @ 3A
    c) 4.5V @ 6A
    d) 4.5V @ 2A

43. Counter digits are displayed on---------- (c)
    a) CIU
    b) OC
    c) COUNTER BOX Module
    d) PP

44. Max No of Routes that can be handled by an CIU of MEI633 --------- (c)
    a) 250
    b) 350
    c) 450
    d) 550

45. ---------- type of SPD is provided in 24V DC supply (d)
    a) A
    b) B
    c) C
    d) D

46. WFM means---------- (c)
    a) Point function module
    b) Point frequency module
    c) Wayside function module
    d) Wayside frequency module

47. WFP means ---------- (d)
    a) Warm function processor
    b) Warm frontend processor
    c) Wayside frontend processor
    d) Wayside function processor

48. In each port of CIU---------- No of PPs / VDUs can be connected. (a)
    a) 4
    b) 3
    c) 2
    d) 1

49. ORLD card is used in---------- (b)
    a) CIU
    b) OC
    c) COUNTER BOX
    d) PP

50. The rated current of VCOR---------- (b)
    a) 4
    b) 3
    c) 2
    d) 1

Chapter-4 : WESTRACE EI

1. WESTRACE EI has ------ Architecture (b)
   a) 1 out of 2 logic
   b) 1 out of 1 logic
   c) 2 out of 2 logic
   d) 2 out of 1 logic

2. VLM means ---------- (d)
   a) Vital link model
   b) Vital link module
   c) Vital logic model
   d) Vital logic module

3. NCDM means ---------- (d)
   a) Network centre debug module
   b) Network centre diagnosis model
   c) Network communication debug module
   d) Network communication diagnostic module

4. VLM includes ---------- (c)
   a) VLC & PFM
   b) VLC & PSU
   c) VLC & OPC
   d) VLC& VLOM

5. NCDM includes ---------- (c)
   a) NCDC & PFM
   b) NCDC& PSU
   c) NCDC & OPC
   d) NCDC & VLOM

6. WESTCAD is used for ---------- (b)
   a) MT
   b) VDU
   c) PP
   d) CTC

7. MOVOLAW is used as ---------- (a)
   a) MT
   b) VDU
   c) PP
   d) CTC

8. One WESTRACE consists of Max ---------- Housings (d)
   a) 1
   b) 2
   c) 3
   d) 4

9. One Housing consists of ---------- No of slots (b)
   a) 14
   b) 16
   c) 18
   d) 20

10. First Housing can accomdate Max ---------- I/O Modules (c)
   a) 9
   b) 7
   c) 5
   d) 3

11. Other than 1st Housing can accomdate max ---------- I/O Modules (b)
   a) 9
   b) 7
   c) 5
   d) 3

12. VLM to be located in ---------- slots (b)
   a) 1 & 2
   b) 2 & 3
   c) 3 & 4
   d) 4 & 5

13. NCDM to be located in ---------- slots (d)
   a) 1
   b) 2
   c) 3 & 4
   d) 4

14. In the WESTRACE EI, Vital O/P module is named as ---------- (c)
   a) VPOM
   b) VIOM
   c) VROM
   d) VLOM

15. In the WESTRACE EI, Vital I/P module is named as ---------- (a)

a) VPIM
b) VRIM
c) VLIM
d) VIOM

16. In the WESTRACE EI, Max No of I/Ps that can be connected to a Vital I/P module is ---------- (c)

a) 8
b) 10
c) 12
d) 16

17. In the WESTRACE EI, Max No of O/Ps that can be connected to a Vital O/P module is ---------- (a)

a) 8
b) 10
c) 12
d) 16

18. How many WETRACE units can be interconnected? (d)

a) 8
b) 10
c) 12
d) 16

19. NCDM consists of ---------- Serial COM ports (c)

a) 1
b) 2
c) 3
d) 4

20. NCDM consists of ---------- Ethernet COM ports (a)

a) 1
b) 2
c) 3
d) 4

21. NCDM consists of ---------- OFC ports (b)

a) 1
b) 2
c) 3
d) 4

22. IHCL is used for ---------- (d)
    a) Interconnects between VLC & OPC
    b) Interconnects between VLM & NCDM
    c) Intercoommunication between NCDM to NCDM
    d) Intercoommunication between VLM to VLM

23. INCL is used for ---------- (c)
    a) Interconnects between VLC & OPC
    b) Interconnects between VLM & NCDM
    c) Intercoommunication between NCDM to NCDM
    d) Intercoommunication between VLM to VLM

24. WESTRONICS can be connected through ---------- port. (a)
    a) SERIAL
    b) ETHERNET
    c) OFC
    d) PARALLEL

25. PFM means ---------- (d)
    a) Power Factor Module
    b) Power fillter module
    c) Protection factor module
    d) Protection filter module

26. OPCR works on ---------- voltage (c)
    a. 12V DC
    b. 24V DC
    c. 50V DC
    d. 60V DC

27. In WESTRACE EI, the RJ 45 connector is provided in ---------- card (b)
    a. VLM
    b. NCDM
    c. VPIM
    d. VROM

28. In WESTRACE EI, OFC ports are provided in ---------- card (b)
    a. VLM
    b. NCDM
    c. VPIM
    d. VROM

29. VDU is to be connected to ---------- port (d)
    a. Ethernet
    b. OFC
    c. Parallel
    d. Serial/ Ethernet

30. Moviolaw can be connected to ---------- port (a)
    a. Ethernet / serial
    b. OFC
    c. Parallel
    d. Serial

31. In WESTRACE EI, External data logger can be connected to ---------- port (a)
    a. Serial
    b. Parallel
    c. OFC
    d. Ethernet

32. System Input supply for the WESTRACE EI is -------- (b)
    a. 12v & 60v DC
    b. 24v & 50v DC
    c. 24v & 60v DC
    d. 12v & 60 v DC

33. In WESTRACE EI, Slot No --------- is dedicated for PSU (d)
    a. 1
    b. 2
    c. 15
    d. 16

34. In WESTRACE EI, blank slot is filled with ---------- (b)
    a. OPC card
    b. Blanker card
    c. VPIM card
    d. VROM card

35. In WESTRACE EI, Slot no 1&15 in the1st Housing filled with ---------- (c)
    a. VROM card
    b. VPIM card
    c. Blanker card
    d. VLOM card

36. In WESTRACE EI, VSEV means ---------- (b)

a. Virtual serial emergency voltage
b. Vital serial enable voltage
c. Virtual serial enable voltage
d. Vital serial emergency voltage

37. In WESTR\ACE EI, VSEV voltage is meant for ---------- (b)

a. OPCR energisation
b. Hot standby synchronization
c. Warm standby
d. Stand alone working

38. In WESTRACE EI, VSEV voltage is ---------- (c)

a. 5v DC
b. 12v DC
c. 24v DC
d. 50v DC

39. In WESTRACE EI, The ---------- is provided as mini mother board for VL M&NCDM (a)

a. UHVBC
b. UHVLM
c. UHNCDM
d. UHPSU

40. In WESTRACE EI, One PSU can be connected to Max ---------- Housings. (c)

a. 4
b. 3
c. 2
d. 1

41. Max ------ No of I/O modules can be accommodated in an WESTRACE (b)

a. 16
b. 26
c. 14
d. 12

42. The output voltage of VROM is ---------- (d)

a. 5v DC
b. 12v DC
c. 24v DC
d. 50v DC

43. ---------- voltage relays used as Vital O/P relays in the WESTRACE EI (a)

a. Q Series 50v
b. Q Series 12v
c. K-50 60v
d. Q series 24v

44. ---------- voltage relays used as Vital I/P relays in the WESTRACE EI (d)

a. Q Series 50v
b. Q Series 12v
c. K-50 60v
d. Q series 24v

45. Input range of PSU in WESTRACE EI is ---------- (c)

a. 10-18v DC
b. 15-25V DC
c. 18-30V DC
d. 16.5-26.5V DC

46. PCGE is used for ---------- generation (c)

a. User data log files
b. Application logic files
c. Station Layout files for VDU
d. Maintenance tool files

47. The interlocking circuits in the WESTRACE EI is called as ---------- (b)

a. Rings
b. Rungs
c. Rongs
d. Rangs

48. ---------- logic is used for writing WESTRACE Application program (a)

a. Ladder
b. Gate
c. Maxwell
d. Boolean

49. In WESTRACE EI, PFM is used as ---------- (a)

a. SPD b. LPD
c. MOV d. ELD

d. CAT 5 cable is used for -------- communication in WESTRACE EI. (d)

a. Serial b. OFC
c. Parallel d. Ethernet

Objective Questions

Chapter -1 : Introduction

1) Lamp proving relay picks up when the
   a) Signal lamp glows
   b) Panel Key lamp glows
   c) Point machine lamp glows
   d) Gate indication lamp glows (a)

2) Contactor relays are used for feeding
   a) Low current Circuits
   b) High current Circuits
   c) Medium current Circuits
   d) No current Circuits (b)

3) In Metal to Carbon contact relays, the Metal contact element is made of
   a) Bronze
   b) Steel
   c) Silver
   d) Gold (c)

4) WLR stands for
   a) Point lock relay
   b) Point lever relay
   c) Point rotation relay
   d) Point left side relay (a)

5) TRSR stands for
   a) Train Sending Relay
   b) Train stick relay
   c) Train right stick relay
   d) Track right stick relay (a)

6) UCR stands for
   a) Route controlling relay
   b) Route register relay
   c) Route checking relay
   d) Route relay Interlocking (c)

7) ASR stands for
   a) Advance starter control relay
   b) Approach stick relay
   c) Advance search relay
   d) Approach search relay (b)

8) WRR stands for

a) Point reverse operation relay
b) Point normal operation relay
c) Point right operation relay
d) Point left operation relay (a)

9) WJR relay stands for point flashing relay

a) Point Indication Relay
b) Point Motor operational Relay
c) Point Snubbing Relay
d) Point Timer Relay (d)

10) GNCR stands for green aspect checking relay

(a) Signal Normal Control Relay
(b) Signal Reverse Control Relay
(c) Signal Button Control Relay
(d) Ground Lever Control Relay (c)

11) XYNR stands for Gate control slot release Button relay

(a) Gate Operating Relay
(b) Gate control slot release Button relay
(c) Level Crossing Closing Relay
(d) Level Crossing Locking Relay ans (b)

12) WNR stands for Point normal relay

(a) Point Button Relay
(b) Point Detection Relay
(c) Point Checking Relay
(d) Point Status Proving Relay ans (a)

13) EUYR stands for

a) Emergency Route release Relay
b) Emergency Route Relay
c) Emergency Lock Relay
d) Electric Lamp Relay ans (a)

14) WWNR means

a) Common Button Relay
b) Common Point Relay
c) Common Point Button Relay
d) Common Signal Relay ans (c)

15) XOKR stands for

a) Wrong Operational detection Relay
b) Right Indication Relay
c) Gate Opened Indicating Relay
d) Gate closed Relay ans (c)

16) WR means

a) Point Relay
b) Point Contactor Relay
c) Point Latch Relay
d) Point detection Relay ans (b)

17) EWZ means

a) Emergency Counter
b) Emergency Point operation counter
c) Point Special Relay
d) Point scanning Relay ans (b)

18) CO-GGNR means

a) Common Signal Relay
b) Common Button Relay
c) Common Button for Calling-on signals
d) Common Bus- bar ans (c)

19) CHKLR means

a) Calling-on Signal
b) Catch siding
c) Crank Handle Key Lock Relay
d) Crossing Point ans (c)

20) TSR means

a) Track stop board
b) Track Stick Relay
c) Track Running Relay
d) Track Slot Relay ans (b)

21) WLR means

a) Whistle Level Crossing
b) Whistle Long
c) Whistle Short
d) Point Lock Relay ans (d)

22) UCR means

a) Underground Cable
b) Undo the prescription
c) Route Checking Relay
d) Route Crossing Relay ans (c)

23) Power Cables are meant for

a) Carrying Shunt Signal supply
b) To transmit Power Supply
c) To regulate Electric Supply
d) To step down supply ans (b)

24) Signal aspect is sensed by

a) Electronics
b) Artificial Intelligence
c) Lamp Proving Relays
d) Radio Waves ans (c)

25) Copper slug is meant for

a) DC suppression
b) AC Immunisation
c) Traction Area
d) Non-RE Area ans (b)

26) Route Locking is achieved by employing

a) WLR
b) ASR
c) TSR
d) TRSR ans (b)

27) Sequential Route Release is achieved by

a) UYR-1andUYR-2
b) TSR
c) WLR
d) TLSR ans (a)

Chapter-2 : Signalling Relays

1) All relays other than Track relays are known as
   (a) Line relays
   (b) Neutral Relays
   (c) Polar Relays
   (d) Two Position Relay (a)

2) Vital Relay is used for detecting presence of
   (a) SM's Key
   (b) Train
   (c) LC Gate operation
   (d) Simultaneous Reception (b)

3) Metal to Metal contact relays are known as
   (a) Non-proved Type
   (b) Proved Type
   (c) Polar Relays
   (d) AC immunised Relays (b)

4) Polar relay works on the principle of
   (a) Direction of the Traffic
   (b) Direction of Current
   (c) Direction of Train
   (d) Direction of Motor Trolley (b)

5) The relay core is made up of
   (a) specially selected Iron
   (b) specially selected Tin
   (c) specially selected Copper
   (d) specially selected Silver (a)

6) The bottom of each core is equipped with a
   (a) Silver block
   (b) Iron block known as pole piece or face.
   (c) Aluminium
   (d) Brass (b)

7) Timer Relay is used for
   (a) Time delay
   (b) Time slot
   (c) Time registration
   (d) reading Data Logger clock (a)

8) In any Electro-magnetic system, the force attraction F is directly proportional to

a) B.B.a
b) B.a
c) B.a.a
d) a.B (a)

9) AC Track circuits are used in

a) AC Traction Area
b) DC Traction Area
c) Non-RE Area
d) LC Gate Area (b)

10) Electro-magnetic Iron may be in the form of

a) Magnesium bars
b) Swedish charcoal Iron
c) Copper bars
d) Silver bars (b)

11) ABB relay contacts are of

a) Metal to Carbon
b) Metal to Metal
c) Carbon to Silver
d) Carbon to Carbon (b)

12) The air gap between core and armature of the relay has

(a) a positive effect on the release time of the relay
(b) negative effect on release Time
(c) no effect
(d) multiplies the Time (a)

13) High hysteresis loss

a) improves the sensitivity of the relay
b) malfunctions the Relay
c) causes heating effect
d) nullifies the flux (a)

14) More number of contacts of a Relay

(a) Increase the Load current of the Relay Coil
(b) Decrease the Load current
(c) No change in Load current
(d) Require less Load current (a)

15) The Relay Iron should have
   (a) High Hysteresis loss
   (b) Low Hysteresis loss
   (c) High retentivity
   (d) Optimum Hysteresis loss (b)

16) Armature of a Relay is supported by
   (a) Brackets
   (b) Bolts and Nuts
   (c) Insulated materials
   (d) Copper strips (a)

17) The Relays operating the Buzzers are called as
   (a) Vital Relays
   (b) Non-Relays
   (c) Line Relays
   (d) Track Relays (b)

18) Relays are
   a) Sophisticated switch gears
   b) Solid state components
   c) Linked electrical apparatus
   d) Transmitters (a)

19) DC Relays with Electronic components are called as
   a) Latched Relays
   b) Magnetic Relays
   c) Electronic Relays
   d) Remote Relays (c)

20) Railway Signalling Relays operate on
   a) High Voltage and Current
   b) Low Voltage and Current
   c) High Resistance
   d) Low Resistance (b)

21) In case of Proved Type Relays.
   a) Each operation is to be logged
   b) Normalisation after each operation is to be proved in circuit
   c) Energisation of the Relay is to be proved
   d) Malfunction of relay is to be proved. (b)

22) In DC Neutral Relay, the magnetic Flux passes through

a) Only Yoke
b) Yoke and Armature
c) Only Stop Pin
d) Conductor (b)

23) It is essential to maintain a small air gap between the armature and Pole faces so that

a) High value of residual magnetism is achieved
b) Low value of residual magnetism is achieved
c) High current is passed
d) Low current is passed (b)

24) The difference between pick-up and drop away current of a Track Relay should be

a) As small as possible
b) High
c) Steady
d) Variable (a)

25) When the supply is disconnected to Relay, the Flux decay exists for a while due to

a) No current
b) Eddy currents
c) High current
d) Low current (b)

Chapter-3 : Shelf Type DC Line & Track Relays

1) Maximum number of arm contact springs ,the armature of shelf type relay can carry
   a) 4 b) 5 c) 6 d) 8 (Ans : c)

2) The front contacts of shelf type relay are made of
   a) SIG b) Carbon c) Copper d) Nickel (Ans : a)

3) The maximum permitted resistance of front contacts of a shelf type relay is
   a) 0.5 ohm b) 0.2 ohm c) 0.12 ohm d) 1.0 ohms (Ans : b)

4) Each coil of a shelf type line relay has a resistance of ------- ohms
   a) 250 b) 400 c) 500 d) 700 (Ans : c)

5) Maximum number of back contacts of a non immunised shelf type track relay are
   a) 4 b) 2 c) 6 d) 8 (Ans : b)

6) The front contacts of shelf type can carry ---- Amps current continuously
   a) 2 b) 3 c) 5 d) 9 (Ans : b)

7) The maximum pickup voltage of a 9 ohms shelf type track relay is
   a) 0.56 v b) 1.4v c) 5 d) None (Ans : d)

8) The minimum percentage release of shelf type line relay is
   a) 40% b) 50% c) 65% d) 70% (Ans : b)

9) The minimum percentage release of shelf type track relay is
   a) 60% b) 56% c) 68% d) 75% (Ans : c)

10) The AC immunity of a ac immunised shelf type track relay is
   a) 40V b) 10V c) 50V d) 60V (Ans : c)

11) The period of overhauling for a shelf type line relay is
   a) 10 years b) 20 years c) 15years d) 25 Years (Ans : c)

12) The Normal working voltage of shelf type line relay is
   a) 24V b) 12V c) 10V d) 24V (Ans : b)

13) The Coil Resistance of line Relay is
   a) Two Coils of 200 Ohms each
   b) Two Coils of 500 Ohms each
   c) Two Coils of 400 Ohms each
   d) Two Coils of 600 Ohms each (Ans : b)

14) Independent contact means, the condition in which
   a) the movable arm contact connects to only front contact
   b) the movable arm contact connects to either a front or a back contact but not to both
   c) the movable arm contact connects a back contact
   d) the movable arm contact connects no contact (Ans : b)

15) Back contact of a Relay means
   a) That contact which is made with 'arm contact' when the relay is energized.
   b) That contact which is made with 'arm contact' when the relay is de-energized.
   c) That contact which is not movable
   d) That contact which is movable (Ans : b)

16) To avoid damage to contacts of Track Relay during transportation,
   a) the relay shall be handled carefully
   b) the relay shall be provided with bolt and nuts
   c) the relay shall be provided with a transport screw.
   d) the relay shall be provided with copper slug (Ans : c)

17) Contact Current rating for continuous front contact of Line Relay
   a) 5 A
   b) 3 A
   c) 6 A
   d) 4 A (Ans : b)

18) Maximum operating time for front contacts of a non-ACI Line Relay
   a) 300 ms
   b) 450 ms
   c) 580 ms
   d) 700 ms (Ans : b)

19) Permissible max. rise in P.U current from initial value for line Relay
   a) 20%
   b) 10%
   c) 30%
   d) 25% (Ans : b)

20) Track Relays carry less number of contacts
   a) To have high power operation
   b) To have low power operation
   c) To have no power operation
   d) To have optimum power operation (Ans : b)

21) The Track relay shall not get energized
   a) with abrupt application of up to 250V 50Hz AC to its coil.
   b) with abrupt application of up to 350V 50Hz AC to its coil.
   c) with abrupt application of up to 450V 50Hz AC to its coil.
   d) with abrupt application of up to 650V 50Hz AC to its coil. (Ans : b)

22) Minimum total pick up time, when the Track Relay is fed with 250% of the maximum specified pick up current,

a) shall not be less than 450 milli seconds

b) shall not be less than 650 milli seconds

c) shall not be less than 250 milli seconds

d) shall not be less than 850 milli seconds (Ans : c)

23) In case of AC Immunised Track Relays, when the coil current is falling,

a) the slug current favours the decay of flux through the core.

b) the slug current opposes the decay of flux through the core.

c) the slug current nullifies the flux through the core.

d) the slug current increases. (Ans : b)

24) Maximum drop away transfer time when the relay is fed with 250% of the max. Specified pick up current

a) shall not be more than 600 milli seconds.

b) shall not be more than 300 milli seconds.

c) shall not be more than 200 milli seconds.

d) shall not be more than 150 milli seconds. (Ans : c)

25) When 100V 50Hz AC voltage is applied continuously to AC Immunised Shelf Type Line relay coil(s) for 30 minutes,.

a) the heat generated in the coils shall not damage the coils

b) the heat generated in the coils shall not damage the Yoke

c) the heat generated in the coils shall not damage the copper slug

d) the heat generated in the coils shall not damage the insulation of the coils (Ans : d)

Chapter-4 : Plug In Type DC Line Relays (Non-Proved Type)

1) Q series relays have
   a) different plug board
   b) common plug board
   c) no plug board
   d) only partial plug boards (b)

2) Q series relays have
   a) metal to metal contacts
   b) metal to carbon contacts
   c) carbon to carbon contacts
   d) silver to silver contacts (b)

3) All the contacts of Q series relay are
   a) Dependent contacts
   b) 3position contacts
   c) Series contacts
   d) independent contacts (d)

4) No electrical connection is possible between plug board and the relay base
   a) Relay Jack bolts are provided
   b) Relay retention clip is provided
   c) until code pins were correctly engaged.
   d) Relay Rack is installed (c)

5) The fundamental relay of the Q-series is
   a) the DC neutral line relay style QN1.
   b) the DC neutral line relay style QN2
   c) the DC neutral line relay style QN3
   d) the DC neutral line relay style QN4 (a)

6) In DC Nuetral Plug-in type QN1 Relays, the contact springs are made of
   a) Phosphor bronze
   b) Manganese
   c) Silver
   d) Nickel (a)

7) The base of a Plug-in Type Relay is
   a) Iron piece moulding
   b) moulding of non-hygroscope thermosetting material.
   c) Aluminium moulding
   d) Magnetic material (b)

8) Armature of a Plug-in Type Relay is

a) mounted on a Aluminium pivot plate riveted to the heel piece.

b) mounted on a Phosphor Bronze pivot plate riveted to the heel piece.

c) Bronze plate

d) Copper plate (b)

9) Periodical overhauling of Shelf Type Track Relays

a) 20 years

b) 10 years

c) 5 years

d) 8 years (b)

10) The rated life of Q series relays

a) 1000 operations

b) 2000 operations

c) 10,00,000 operations

d) 5000 operations (c)

11) Residual pin is not provided on the armature of a Q series

a) Neutral Relays

b) Electrical Latch Relays

c) Mechanical Latch Relays

d) Magnetic latch relay (d)

12) On the plug board of a Q series relay,

a) Three Coil connections can be terminated

b) Two coil connections can be terminated

c) Four coil connections can be terminated

d) Five coil connections can be terminated (b)

13) The operating Current of QN 1 Relay is

a) 70 Ma

b) 60mA

c) 40mA

d) 80mA (b)

14) The Coil Resistance of DC twin Neutral Line Relay (QNN 1) is

a) 600 Ohms

b) 470 Ohms

c) 500 Ohms

d) 300 Ohms (b)

15) AC immunity level of QNA 1 Relay is

a) 2000V (R.M.S) 1-phase 50 Hz

b) 1000V (R.M.S) 1-phase 50 Hz

c) 3000V (R.M.S) 1-phase 50 Hz

d) 4000V (R.M.S) 1-phase 50 Hz (b)

16) The operating current of QS3: Q Series Sensitive Neutral Relay

a) 34mA

b) 20mA

c) 12mA

d) 15mA (c)

17) Minimum Pick Up Voltage for QS 3 Relay is

a) 10 V

b) 7.5 V

c) 12 V

d) 15 V (b)

18) The rated Voltage and Current for QB 3 Relay

a) 24V and 100mA

b) 12V and 60mA

c) 10V and 25mA

d) 8Vand 10mA (b)

19) The front contacts of QBCA 1 can carry and switch up to (at 110 VDC).

a) 20A

b) 10A

c) 30A

d) 15A (c)

20) The Coil Resistance of QSPA 1 is

a) 300 Ohms

b) 208 Ohms

c) 100 Ohms

d) 400 Ohms (b)

21) Maximum pickup voltage of QN1 relay is

a) 9 V

b) 19.8V

c) 19.2V

d) 12V (c)

22) Minimum drop away voltage of QN1 relay is

a) 3.0V

b) 3.6V

c) 4.2V

d) 10V (b)

23) AC immunity (volts) of QN1 relay is

a) 200

b) 300

c) 1000

d) None of the above (b)

24) Coil resistance of QS3 relay is ------- ohms

a) 600

b) 1000

c) 400

d) 300 (b)

25) AC Immunity of QSRA 1 Relay

a) 400V AC

b) 300V AC

c) 600V AC

d) 800V AC (b)

26) The working Voltage of QL 1 Relay is

a) 12 V

b) 24V

c) 10V

d) 20V (b)

27) The Resistance of Reverse Coil of QL1 Relay

a) 100 Ohms

b) 200 Ohms

c) 145 Ohms

d) 300 Ohms (c)

Chapter-5 : Plug In Type DC Line Relays (Proved Type)

1) The contact resistance of a new proved type relays shall not exceed -------
   (a) 0.5 ohms (b) 0.1 ohms (c) 0.6 ohms (d) 0.4 ohms ans (b)

2) The contacts of proved type relays are rated for a continuous current of -----
   (a) 3 Amps (b) 4amps (c) 6amps (d) 8amps ans (a)

3) The K -50 mini relay group has ----- code pins
   (a) 4 (b) 3 (c) 2 (d) 5 ans (c)

4) The K -50 mini relay group has ---- guide pins
   (a) 2 (b) 3 (c) 4 (d) 5 ans (c)

5) The K -50 interlocked relay has a
   (a) mechanical latch (b) electrical latch
   (c) electromechanical latch (d) none of the above ans (a)

6) The K -50 mini relay group can have a maximum of ----- relays
   (a) 4 (b) 2 (c) 5 (d) 10 ans (b)

7) The K -50 mini relay group can have a maximum of ------ contacts
   (a) 5 (b) 6 (c) 8 (d) 10 ans (c)

8) In a K 50 relay with 6F/2B configuration contact number ----- are back contacts
   (a) 02&12 (b) 03&13 (c) 04& 14 (d) 05&15 ans (d)

9) In a K 50 relay with 4F/4B configuration contact number ------ are front contacts
   (a) 03 & 13 (b) 02&12 (c) 04& 14 (d) 05&15

10) The operating voltage of K-50 Neutral relay is DC
   (a) 50v (b) 60v (c) 80v (d) 90v ans (b)

11) The release time of a K 50 relay is ----------
   (a) 15 to 7 m sec (b) 14-8ms (c) 16-5ms (d) 12-5ms ans (a)

12) The thickness of residual pin of a K50 –E type relay is -----
   (a) 0.45mm (b) 0.30mm (c) 0 .15mm (d) 0.40mm ans (a)

13) The ON –ECR & OFF – ECR relays are classified as -------
   (a) K50 –E type (b) k50 –A (c) K50 – B (d) none ans (a)

14) The Interlocked relays are classified as ------ type
   (a) K50 –B (b) K50 –A (c) K50 –E (d) K-17 ans (b)

15) The UECR relays are classified as ----- type
   (a) K50 –B (b) K50 –A (c) K50 –E (d) K-20 ans(a)

16) The coil resistance of an AC immunised K-50 immunised relay is -------

(A) 1800 ohms (b) 1810omhs (c) 1840 ohms (d) 1800 ohms ans (c)

17) The coil resistance of an 5F/3B K-50 Neutral relay is -------

(a) 1300ohms (b) 1260 ohms (c) 1810phms (d) 1900 ohms ans (b)

18) The coil resistance of an K- 50 Interlocked relay is -------

(a) 815 ohms (b) 800ohms (c) 750 ohms (d) 400 ohms ans (d)

19) The K-50 ECR relay has maximum ----- contacts only

(a) 4 (b) 5 (c) 2 (d) none ans (d)

20) The thickness of residual pin in K50- A type relay -----

(a) 0.35mm (b) 0 .15mm (c) 0.45mm (d) 0.50mm ans (a)

21) The thickness of residual pin in K50- B type relay -----

(a) 0.35mm (b) 0.15mm (c) 0.45mm (d) 0.90mm ans (b)

22) The thickness of residual pin in K50- E type relay -----

(a) 0.35mm (b) 0.15mm (c) 0.45mm (d) 0.68mm ans (c)

23) Coil resistance of interlocked relays -------

(a) 615 ohms (b) 600 ohms (c) 625ohms (d) 300 ohms ans (a)

24) The coil resistance of lamp checking relay ------

(a) 64.1 ohms (b) 65.0 ohms (c) 66.1 ohms (d) 70 ohms ans (a)

Chapter-6 : Lamp Proving Relays

1) The ----- transformer is connected in series with the secondary of the signal transformer
   (a) I type (b) h type (c) L type (d) none ans (b)

2) The------ transformer is used to energise ECR relay
   (a) I type (b) h type (c) L type (d) none ans (b)

3) The ------ transformer is connected in series with the primary of the signal transformer
   (a) I type (b) h type (c) L type (d) B type ans (c)

4) The ------ transformer is connected in series with the secondary of the signal transformer
   (a) H type (b) I type (c) L type (d) none ans (a)

5) ------ type current transformers are suitable for low current circuits
   (a) H type (b) I type (c) L type (d) b and c ans (d)

6) The voltage ratio of current transformer in Siemens type RECR is
   (a) 1: 3 (b) 1: 4 (c) 1:5 (d) 1:6 ans (a)

7) The voltage ratio of current transformer in Siemens type RECR is
   (a) 1: 2 (b) 1: 4 (c) 1:5 (d) 1:6 ans (a)

8) The coil resistance of Siemens type UECR is ---
   (a) 64.1 ohms (b) 645ohms (c) 1820ohms (d) 615 ohms ans (a)

9) In Potential Drop Method of RECR Circuit, the Resistance employed on primary side of Signal Transformer is
   a) 500 ohms b) 600 ohms c) 800 ohms d) 1000 ohms ans (d)

10) When the Signal lamp is lit a potential drop method, the Voltage obtained Resistor is about
   a) 6V b) 8V c) 9V d) 10 V ans (d)

11) When the Signal lamp is not lit a potential drop method, the signal transformer will work as a
   a) resistor b) choke c) condenser d) diode ans (d)

12) The number of diodes used in ECR mehod for rectification
   a) 2 b) 4 c) 1 d) 3 ans (b)

13) 'I' type of current transformer is connected in series with
   a) the primary of the Signal transformer
   b) the secondary of the Signal Transformer
   c) the primary of the step up transformer
   d) the secondary of the step up transformer ans (a)

14) In case of 'I' type of current transformer, the secondary of a current transformer is connected to
   a) 6V/4W indication lamp b) 12V/4W indication lamp
   c) 4V/4W indication lamp d) 8V/4W indication lamp ans (b)

15) The secondary voltage of the `L' Type current transformer is rectified and utilised to

a) energise neutral relay

b) de-energise neutral Relay

c) energise AC immunised relay

d) de-energise AC immunised relay ans (a)

16) The draw back of Potential drop method with respect to Signal Lamp Indication is

a) Greater drop in voltage

b) Reacting Time of ECR

c) Maximum Power Transfer

d) Inrensity of Light ans (a)

17) Bridge rectifier is employed in ECR Circuits in order to convert

a) DC into AC

b) AC into DC

c) DC into DC

d) get Amplification ans (b)

18) When the Signal lamp fuses in Potential Drop method, the current through the resistance

a) increases

b) decreases

c) becomes nil

d) does not change. ans (b)

19) In ECR circuit, the voltage required for the energisation of relay can be adjusted by employing

a) condenser

b) variable resistor

c) Diode

d) Inductance coil ans (b)

20) ECR means

a) Emergency Coding Relay

b) Electric Lamp Checking Relay

c) Encryption Coding Relay

d) Entry Checking Relay ans (b)

21) In Current Transformer method, if the Signal Lamp fuses then no load current On primary side of Signal is

a) less than 12mA

b) less than 15mA

c) less than 10mA

d) less than 8mA ans (b)

22) `I' type of current transformer is provided where

a) only LC Gate Indication is given

b) only Point Indication is given

c) only Signal Aspect Indication is to be given

d) SM's Key Indication is given ans (c)

23) 'L' type Transformer is suitable for low current in the range of

a) 0.3 Amp on the primary

b) 0.4 Amp on the primary

c) 0.5 Amp on the primary

d) 0.6 Amp on the primary ans (a)

24) 'H' type:- Suitable for high current in the range of

a) 1.5 Amp on the primary side

b) 2.5 Amp on the primary side

c) 3.5 Amp on the primary side

d) 4.5 Amp on the primary side ans (b)

25) In triple pole lamp MECR circuit,

a) 'H' type current transformer is used

b) `L' type current Transformer is used

c) No current Transformer is used

d) MCB is used ans (a)

Chapter-7 : Time Element Relays

1) The Siemens Motorised clockwork timer relay needs both -----to function
   (a) 110 v AC & 24v DC (b) 110 v AC & 12 V DC
   (b) (c) 110V AC & 110V DC (d) 230 V DC ans (a)

2) The Siemens Motorised clockwork timer relay has a time range of -------
   (a)1 to 2 minutes (b) 1 to 5mins (c) 1 to 4 mins (d) 5mins ans (b)

3) In thermal timer relay the closing of cold contact ------- JSR relay
   (a) de-energises (b) energises
   (c) ideal state (d) evaporates ans (b)

4) In thermal timer relay the hot contact is not proved in the circuit of
   (a) JR (b) JSR (c) AJPR (d) TPR ans (a)

5) In Siemens motorised timer relay the no. of pinions and no. of gear wheels
   (a) 4 and 4 (b) 4 and 5 (c) 3 and 4 (d) 3 and 5 ans (a)

6) Specification of electronic timer relay is ---------
   (a) BR Spec no 934 (b) BR Spec no 936
   (b) (c) BR Spec no 935 (d) BR Spec no 937 ans (d)

Chapter-8 : Plug In Type Track Relays

1) The 4ohms QT2 relay is used for ----- track circuits
   (a) Short (b) long (c) medium (d) none ans (b)

2) 9 ohms QT2 relay is used for -------- track circuits
   (a) Short (b) long (c) medium (d) none ans (a)

3) Coil resistance of line relay --------
   (a) 4ohms and 9 ohms (b) 9 ohms and 5 ohms
   (c) 4 and 5ohms (d) 4 ohms and 8 ohms ans (a)

4) Track relays are designed with less number of contacts to make them
   (a) More sensitive (b) less sensitive
   (c) not effects its sensitivity (d) none ans (a)

5) The pickup voltage of QT2 relay with 9 ohms coil is
   (a) 1.7v (b) 1.5V (c) 1.3 v (d) 1.4 v ans (b)

6) The AC immunity of QTA2 relay is
   (a) 60V AC (b) 30V AC (c) 50V AC (d) 40 V AC ans (c)

7) The contact configuration of QTA2 is
   (a) 2F/1B (b) 4F/2B (c) 2F/2B (d) 4F/4B ans (a)

8) ---------- is used as the second repeater of QTA2 in RE area
   (a) QN1 (b) QNA1 (c) QSPA1 (d) QTA2 ans (c)

9) The maximum length of Track circuit permitted with QTA2 is
   (a) 250mt (b) 450 mts (c) 720 mts (d) 200 mts ans (b)

10) Pickup voltage of QTA2 relay with 9 ohms coil is
   (a) 1.2V (b) 1.3V (c) 1.4V (d) 1.5V ans (c)

11) The AC immunity of QBAT relay is
   (a) 150V AC (b) 80V AC (c) 50V AC (d) 30V AC ans (b)

12) The maximum length of Track circuit permitted with QBAT is
   (a) 720mt (b) 450mts (c) 250mts (d) 200mts ans (a)

13) The maximum permitted excitation of QBAT relay is up to --------- of P.U voltage
   (a) 235% (b) 230% (c) 300% (d) 200% ans (a)

14) Pick up current of QBAT
   (a) 140- 175 ma (b) 130-160m (c) 140-170ma (d) 132- 174 ma ans (a)

15) Pick up current of QTA2 of 20 ohms
   (a) 80-90 ma (b) 90-100ma (c) 100-110ma (d) 110-120ma ans (a)

16) Pick up current of QTA2 of 9ohms

(a) 80-90 ma (b) 90-100ma (c) 120-140ma (d) 110-120ma ans (c)

17) Pick up voltage of QT2 relay of 4 ohms

(a) 0.3-0.5v (b) 0.5-0.6 v (c) 0.6 -0.7v (d) 1- 2v ans (a)

18) Pick up voltage of QT2 relay of 9 ohms

(a) 4v (b) 3v (c) 1.5v (d) 2v ans (c)

19) Pick up current of QT2 relay of 9 ohms

(a) 100-110ma (b) 103-117ma (c) 110-120ma (d) 117- 112ma ans (b)

20) Maximum excitation of QT2 relay

(a) 200% (b) 250% (c) 300% (d) 350% ans (c)

21) Minimum excitation of QT2 realy

(a) 200% (b) 250% (c) 125% (d) 350% ans (c)

22) Pick up current of QTA2 relay of 20ohms

(a) 80-90ma (b) 80-100ma (c) 90-110ma (d) 110-124ma ans(a)

23) Pick up current of QTA2 relay of 9ohms

(a)80-90ma (b) 80-100ma (c) 120-140ma (d) 110-124ma ans(c)

24) QBAT relay configuration

(a) 2f/1b (b) 2f/2b (c) 4f/2b (d) 4f/4b ans (b)

25) Maximum excitation of QBAT realy

(a) 200% (b) 250% (c) 235% (d) 300% ans (c)

26) The 4 ohms QT2 relay is used for

(a) Longer Track Circuit

(b) Shorter Track Circuit

(c) LC Gate area TC

(d) Loop Line TC ans (a)

27) The purpose for the back contact in track relays

(a) False Feed

(b)Cross protection

(c) For data Logger

(d) No use ans (b)

Chapter-9 : Siemen's Thermo Flasher Unit

1) Siemens Thermo Flasher unit uses --------- metal
   a. Steel
   b. bronze
   c. zinc
   d. mercury ans : d

2) Siemens Thermo Flasher unit generates ------- number of flashing impulses per minute
   a. 40
   b. 30
   c. 60
   d. 50 ans : c

3) The contacts of Siemens Thermo Flasher unit can carry ------ Amps current @12V
   a. 5
   b. 6
   c. 2
   d. 7 ans : b

4) Siemens Thermo Flasher coil has 12V/ _____ V/220V DC or AC supply
   a. 24
   b. 48
   c. 110
   d. 60 ans : c

5) Siemens Thermo Flasher has _____ times/ minute frequency.
   a. 30
   b. 60
   c. 120
   d. 240
   ans: b

6) Siemens Thermo Flasher is used in _____ RRI
   a. Siemens
   b. British
   c. Both
   d. None of these ans: a

7) Siemens Thermo Flasher has _____ times/ second frequency.
   a. 60
   b. 30
   c. 120
   d. 1 ans: d

8) Siemens Thermo Flasher has _____ shaped glass.
   a. V
   b. C
   c. U
   d. O ans: c

9) In Siemens Thermo Flasher Relay Mercury is used as
   a. Metal to Short terminals
   b. Metal to expand with heat
   c. Non-metal to disconnect terminals
   d. Liquid Coolant ans: a

10) Siemens Thermo Flasher has input load of _____W @ 12V
   a. 3
   b. 5
   c. 9
   d. 20 ans: c

11) Siemens Thermo Flasher has input load of _____W @ 110V
   a. 25
   b. 20
   c. 2
   d. 9 ans: b

12) Siemens Thermo Flasher has input load of _____ W @ 220V
   a. 25
   b. 20
   c. 2
   d. 9 ans: b

13) Siemens Thermo Flasher unit uses --------- metal
   a. Steel
   b. bronze
   c. zinc
   d. mercury ans : d

14) Siemens Thermo Flasher unit generates ------- number of flashing impulses per minute
   a. 40
   b. 30
   c. 60
   d. 50 ans : c

15) The contacts of Siemens Thermo Flasher unit can carry ------Amps current @12V

a. 5
b. 6
c. 2
d. 7

ans : b

16) Siemens Thermo Flasher is used in _____ circuit

a. Point indication
b. Route indication
c. HR
d. Axle Counter

ans: a

17) Siemens Thermo Flasher is used in _____ circuit

a. Route indication
b. HR
c. Cancellation indication
d. Axle counter

ans: c

18) In Siemens Thermo Flasher once the what makes mercury come back to its original position?

a. Force of repulsion
b. Force of attraction
c. Force of Gravitation
d. Force of assumption

ans: c

19) In Siemens Thermo Flasher _____ gas is used.

a. Mercury
b. Helium
c. Hydrogen
d. LPG

ans: c

20) In Siemens Thermo Flasher filamet is used _____ gas.

a. Expand
b. Contract
c. Evacuate
d. Explode

ans : a

21) In Siemens Thermo Flasher _____ closes heating circuit

a. Mercury
b. Hydrogen
c. Iron
d. Copper

ans : a

22) In Siemens motorised clockwork timer relay the following is employed

a) co-effecient of linear expansion

b) Isothermic expansion

c) contact actuating mechanism

d) Adiabatic expansion ans (c)

23) Contact Load Capacity of Siemens motorised clockwork timer relay Current on contact:

a) 6A @ 12V, 2A @ 110V & 1A @ 220V.

b) 8A @ 12V, 2A @ 110V & 1A @ 220V

c) 3A @ 12V, 2A @ 110V & 1A @ 220V

d) 5A @ 12V, 2A @ 110V & 1A @ 220V ans (a)

24) Siemens motorised clockwork timer relay has Sleeve terminal for a conductor cross section

a) of 5.5mm^2

b) of 1.5mm^2

c) of 2.5mm^2

d) of 3.5mm^2 ans (c)

25) Motorised Clockwork timer Relays are used in

a) British RRI Installations

b) Siemens RRI Installations

c) British Panel

d) Electromechanical Yards. ans (b)

Chapter-10 : Slow Acting Relays

1) Addition of a capacitor in parallel and a resistance in series to the relay coil makes.
   a) it slow to pick up
   b) Slow to release.
   c) Stick path.
   d) For timer circuit. (a)

2) Addition of capacitor and resistance in parallel to the relay coil makes.
   (a) it slow to pick up
   (b) slow to release.
   (c)Not in use.
   (d) stick path (c)

3) Addition of a diode in parallel to the relay coil makes.
   (a) it slow to release
   (b)Slow to pick up
   (c) for timer circuit
   (d) stick path. (a)

4) The increase in capacitance of the parallel capacitor increases.
   (a) The Study Time.
   (b) The Drop Away Time of the Relay.
   (c) The Pickup Time of the Relay
   (d) The Resistance of Path. (c)

5) Slow to pick up Relay is used in _____ circuit.
   a. HR
   b. TPR
   c. TSR
   d. AZTR Ans: c

6) Slow to pick up Relay is used in _____ circuit.
   a. HR
   b. JSLR
   c. TPR
   d. TR Ans: c

7) Slow to pick up Relay is used in _____ circuit.
   a. HR
   b. JSLR
   c. TPR
   d. AZTR Ans: b

8) QSPA1 is slow to _____.
   a. Pickup
   b. Release
   c. Both
   d. Conduct Ans:b

9) What is the actual Time lag of DC Shelf type relay with 100 uF capacitor?
   a. 100ms
   b. 120ms
   c. 180ms
   d. 300ms Ans: d

10) What is the actual Time lag of Line relay with 250 uF capacitor?
   a. 300ms
   b. 440ms
   c. 100ms
   d. 200ms Ans:b

11) What is the actual time lag of Siemens K50 Relay relay with 100 uF capacitor?
   a. 100ms
   b. 440ms
   c. 200ms
   d. 1000ms Ans:d

12) What is the role of resistor in time lag circuit of a slow acting relay?
   a. Storing Energy
   b. Breaking circuit
   c. Introducing time lag in circuit
   d. Limiting current Ans:d

13) What is the role of capacitor in time lag circuit of a slow acting relay?
   a. Storing Energy
   b. Breaking circuit
   c. Introducing time lag in ciruit
   d. Limiting current ans: a

14) What is the role of diode connected in reverse bias across R1/R2 in time lag circuit of a slow acting relay?
   a. Slow to Pickup
   b. Breaking circuit
   c. Slow to Release
   d. Limiting current ans: a

15) Addition of a diode in parallel to the relay coil makes.

a) it slow to release
b) Slow to pick up
c) for timer circuit
d) stick path. Ans: a

16) The increase in capacitance of the parallel capacitor increases.

a) The Steady Time
b) The Drop Away Time Of The Relay.
c) The Pickup Time Of The Relay
d) The Resistance of Path. Ans: c

17) Slow to pick up Relay is used in _____ circuit.

a. HR
b. TPR
c. TSR
d. None of The above Ans: c

18) Slow to pick up Relay is used in _____ circuit.

a. HR
b. JSLR
c. TPR
d. None of The above Ans: c

19) Slow to pick up Relay is used in _____ circuit.

a. HR
b. JSLR
c. TPR
d. None of The above Ans: b

20) QSPA1 is slow to _____.

a. Pickup
b. Release
c. Both
d. None Ans: b

21) What is the actual Time lag of DC Shelf type relay with 100 uF capacitor?

a. 100ms
b. 120ms
c. 180ms
d. 300ms Ans: d

22) What is the actual Time lag of Line relay with 250 uF capacitor?

a. 300ms
b. 440ms
c. 100ms
d. 200ms Ans: b

23) Addition of a capacitor in parallel and a resistance in series to the relay coil makes.

a) it slow to pick up
b) Slow to release.
c) Stick path.
d) For timer circuit. Ans: a

24) Addition of a capacitor and a resistance in parallel to the relay coil makes.

a) it slow to pick up
b) slow to release.
c) Not in use.
d) stick path Ans: c

25) The increase in capacitance of the parallel capacitor increases.

a) The Steady Time
b) The Drop Away Time Of The Relay.
c) The Pickup Time of The Relay
d) The Resistance of Path. Ans: c

26) The release time lag obtained in Slow to Release Relays with Diode is

a) 150 to 500 milliseconds. b) 250 to 500 milliseconds
c) 350 to 500 milliseconds d) 450 to 500 milliseconds Ans: b

27) The Condenser value for1000ohms ITI make Relay

a) 200 micro-Farads b) 100 micro-Farads
c) 375 micro-Farads d) 250 micro-Farads ans (c)

28) The Condenser value for DC Shelf Type Relay release Time lag

a) 70 micro-Farads b) 100 micro-Farads
c) 80 micro-Farads d) 60 micro-Farads ans (b)

29) The Condenser value for Line Relay

a) 120 micro-Farads b) 250 micro-Farads
c) 100 micro-Farads d) 10 micro-Farads ans (b)

30) The Condenser value forSiemens K-50Relay

a) 100 micro-Farads b) 300 micro-Farads
c) 20 micro-Farads d) 40 micro-Farads ans (a)

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31) The Actual Time lag for Slow release Line Relays

a) 440 ms b) 450ms c) 600ms d) 300ms ans(a)

32) The Actual Time lag for Slow release DC Shelf Type Relays

a) 440 ms b) 450ms c) 300ms d) 200ms ans(c)

33) The Actual Time lag for Slow release Siemens K-50 Relays

a) 440 ms b) 1 Second c) 600ms d) 300ms ans(b)

34) The Actual Time lag for Slow to release 1000 ohms ITI make Relays

a) 440 ms b) 450ms c) 560ms d) 300ms ans(c)

Chapter-11 : DC Polar Relay

1) In a DC polar relay if –ve is applied to R1 and + ve is applied to R2 of the relay coil the arm spring deflects.

   (a) to left

   (b) To Middle.

   (c)To Right

   (d) No Response. (c)

2) In the de-energised condition of the polar relay, the air gap between the arm spring and both side contact pins shall not be less than.

   (a) .5mm

   (b) 1 mm.

   (c) 2.5mm.

   (d) 1.5 mm (d)

3) The AC immunity value of DC polar relay is

   (a) 15 V AC

   (b) 10V AC

   (c) 20 V AC

   (d) 18 V AC (b)

4) The coil resistance of DC polar relay is.

   (a) 77 ohms

   (b) 50 ohms

   (c) 65 ohms

   (d) 40 ohms (a)

5) The contact resistance of DC polar relay with 10% excess of PU voltage shall be.

   (a) 0.52 ohms

   (b) 0.25 ohms

   (c) 0.65 ohms

   (d) 0.70 ohms (b)

6) The pick up value of DC POLAR relay

   (a) 19 ma (b) 17ma (c) 14ma (d) 15 ma ans (b)

7) The rated pick value of DC POLAR relay

   (a) 19 ma (b) 17ma (c) 21ma (d) 15 ma ans (c)

8) The AC immunity value of DC polar relay is

   (a) 15 V AC (b) 10 V AC (c) 20 V AC (d) 25 V AC ans(b)

9) The coil resistance of DC polar relay is ----ohms

   (a) 70 (b) 80 (c) 77 (d) 74 ans(c)

10) The contact resistance of DC polar relay with 10% excess of PU voltage shall be

(a) 0.52 ohms (b) 0.25 ohms (c) 0.35 ohm s (d) 0.15 ohms ans (b)

11) Permitted over energisation of DC POLAR relay

(a) 17 ma (b) 21ma (c) 25 ma (d) 30ma ans (c)

12) Drop away value of DC polar real not less than -------

(a) 50% (b) 40% (c) 60% (d) 70% ans (a)

13) Current carrying capacity of DC POLAR realy

(a) 2A (b) 3A (c) 1A (d) 4A ans (c)

14) Specification of DC Polar Realy Spec No.

(a) S31-79 (b) S31-80 (c) S31-81 (d) S31-82 ans (b)

15) When the electromagnet coil is energized with normal polarity, say +ve on R1 and -ve on R2, the south pole at the free end of the strap is attracted towards

a) the north pole of electromagnet to move to the left.

b) the south pole of electromagnet to move to the left.

c) the north pole of electromagnet to move to the right.

d) the north pole of electromagnet to move to the centre. ans(a)

16) When -ve polarity supply is connected to the coil, +ve on R2 and -ve on R1, the south pole of the strap is attracted towards

a) the north pole of electromagnet on the right

b) the north pole of electromagnet on the left

c) the north pole of electromagnet on the centre

d) the north pole of electromagnet on upward direction ans (a)

17) Drop away value of Polarised Relay shall

a) Not be less than 60% of pick up value.

b) Not be less than 50% of pick up value

c) Not be less than 70% of pick up value

d) Not be less than 80% of pick up value ans (b)

Chapter-12 : Signalling Cables

1) 1mm dia copper single strand indoor cables are used for.
   (a) Point Operation Circuit
   (b) Axle counter
   (c) LC Gate Circuit
   (d) Pannel Operation (a)

2) 0.6 mm dia copper single strand indoor cables are used for.
   (a) Signal Lamp Circuit
   (b) Point Operation Circuit
   (c) Axle counter
   (d) LC Gate Circuit (a)

3) For relay ____ mm dia. circuit indoor cables are used
   (a) 0.8
   (b) 0.5
   (c) 0.6
   (d) 0.2 (c)

4) Outdoor signalling cables are available with maximum.
   (a) 40 cores
   (b) 30 cores
   (c) 60 cores
   (d) 50 cores (b)

5) The main cables shall ordinarily be PVC insulated screened and armoured cable to I.R.S. specification No. is
   (a) S.35/1970
   (b) S.46/1970
   (c) S.30/1970
   (d) S.40/1970 (a)

6) The tail cables shall be P.V.C. cables to Specification No.
   (a) IRS S.46
   (b) IRS S.35
   (c) IRS S.50
   (d) IRS S.63 (d)

7) Power cables laid by Signal & Telecommunication Department for carrying power supply up to 440 volts
   (a) 230 Volts
   (b) 110 Volts
   (c) 440 Volts
   (d) 120 Volts (c)

8) Screened Cable screening factor is

(a) 0.4

(b) 0.2

(c) 0.3

(d) 0.5 ans (a)

9) Unscreened cable IRS specification

(a) S-63/07

(b) S-67/07

(c) S-45/07

(d) S-56/07 ans (a)

10) According to colour code, Indoor cable Red coloured conductor can be numbered as

a) 1

b) 2

c) 3

d) 4 ans (b)

11) According to colour code, Indoor cable Brown coloured conductor can be numbered as

a) 6

b) 7

c) 5

d) 8 ans (c)

12) According to colour code, Indoor cable Pink coloured conductor can be numbered as

a) 8

b) 9

c) 7

d) 5 ans (b)

13) According to colour code, Indoor cable White coloured conductor can be numbered as

a) 4

b) 8

c) 2

d) 10 ans (b)

14) According to colour code, Indoor cable Yellow coloured conductor can be numbered as

a) 5

b) 7

c) 6

d) 2 ans (b)

15) According to colour code, Indoor cable Grey coloured conductor can be numbered as

a) 1

b) 2

c) 3

d) 4 ans (c)

16) According to colour code, Indoor cable Black coloured conductor can be numbered as

a) 6

b) 5

c) 4

d) 3 ans (a)

17) According to colour code, Indoor cable Blue coloured conductor can be numbered as

a) 10

b) 1

c) 2

d) 3

18) According to colour code, Indoor cable Green coloured conductor can be numbered as

a) 2

b) 6

c) 4

d) 8 ans (c)

19) According to colour code, Indoor cable Violet coloured conductor can be numbered as

a) 6

b) 8

c) 4

d) 10 ans (d)

20) For Q-Series relay wiring, flexible loose wire used is of

a) 14 strand 0.2mm.dia

b) 18 strand 0.2mm.dia

c) 16 strand 0.2mm.dia

d) 20 strand 0.2mm.dia ans (c)

Objective Questions

Chapter 1: Lever Locks and Circuit Controllers

1. In Electro-mechanical installations functions are operated by _____.
   a) Mechanical lever
   b) Electrical knob
   c) Electrical switch
   d) SM slot Ans :A

2. Since the transmission medium is cable In Electro-mechanical installations any disconnection in cables leads function may go _____ with the lever
   a) with in correspondence
   b) out of correspondence
   c) correspondence course
   d) both a & c Ans :B

3. Electrical lever lock are provided on mechanical lever to avoid _____,
   a) with in correspondence
   b) out of correspondence
   c) correspondence course
   d) both a & c Ans :B

4. Electro-mechanical installations means
   a) mechanical control upon Electrical levers
   b) Electrical control upon mechanical levers
   c) Electrical control upon electrical levers
   d) mechanical control upon mechanical levers Ans :B

5. Electrical locks are required on the mechanical levers at various positions in order to synchronise lever positions with _____ at site
   a) Improper function
   b) Mixed function
   c) Un even function
   d) concerned function Ans :D

6. _____ is used where an electrical control on a mechanical lever is provided.
   a) Electric Point lock
   b) Electric signal lock
   c) Electric lever lock
   d) Electric lockbar Ans: C

7. Lever cannot be operated till the lever lock coil is _____
   a) De- energized
   b) Shorted
   c) Looped
   d) Energized Ans :D

8. The force drop pins/nibs are provided to prevent _____
   a) EMF
   b) Back EMF
   c) residual magnetism
   d) electro magnetism Ans :C

9. lock pawl is positively pushed inside the locking notch before every unlocking operation, a mechanical arrangement called _____ is provided for this purpose
   a) Force drop
   b) Back drop
   c) Economiser contact
   d) Circuit control contact Ans :A

10. The force drop pins/nibs are riveted on _____ side of lever plunger/ slide.
   a) Front
   b) Top
   c) approach
   d) back Ans :D

11. The force drop pins/nibs force the lock pawl to drop into the locking notch through its _____ extension in IRS LLCC
   a) Square shaped
   b) Rectangle shaped
   c) Triangle shaped
   d) bevel shaped Ans :D

12. Economiser contact makes in _____ position of the lever
   a) between B and D positions
   b) between A and E positions
   c) between R and E positions
   d) between N and R positions Ans :B

13. Economiser contact remains disconnected in _____ & _____ position of the lever
   a) Normal & Reverse
   b) A & D
   c) B & E
   d) Center Ans: A

14. Economiser contact connects supply to _____ proving other required conditions after initiation.
    a) Armature
    b) Push away spring
    c) lock coil
    d) lock pawl

    Ans: C

15. In absence of "Economiser contact" the same purpose is served by ____ of circuit controller
    a) RE band
    b) AD band
    c) AE band
    d) BD band

    Ans: C

16. AE band of circuit controller can also be used as _____
    a) Economiser contact
    b) Force drop contact
    c) Back drop contact
    d) Relay drop contact

    Ans: A

17. Economiser contact _____the power consumption
    a) waste
    b) drains
    c) leaks
    d) economizes

    Ans: D

18. Indication Locking is provided on _____ position of point lever slide
    a) ‘A’ and ‘D’
    b) ‘B’ and ‘D’
    c) ‘B’ and ‘E’
    d) ‘N’ and ‘R’

    Ans: B

19. _____Locking is provided on ‘B’ and ‘D’ position of point lever slide
    a) Track
    b) Dead approach
    c) Indication
    d) Back

    Ans: C

20. Indication Locking is provided on __position for signals lever slide
    a) ‘B’
    b) D’
    c) ‘E’
    d) ‘N’

    Ans: A

21. _____Locking is provided on ‘B’ position for signals lever slide
    a) Track
    b) Dead approach
    c) Indication
    d) Back Ans: C

22. Track Locking is provided on _____ position of point lever slide.
    a) ‘A’ and ‘D’
    b) ‘A’ and ‘E’
    c) ‘B’ and ‘D’
    d) ‘B’ and ‘E’ Ans: B

23. if the signal is not operated to OFF position, then the failure is on _____
    a) unsafe
    b) dangers
    c) leads to accident
    d) safe side only Ans: D

24. on signal slide, track locking at ’A/E’, indication locking at ‘D/B’ position are _____
    a) required
    b) necessary
    c) not required
    d) compulsory Ans: C

25. The indication locking at ‘B’ position is _____to ensure that signal has been put back to ON position.
    a) Required
    b) not necessary
    c) not required
    d) not compulsory Ans: A

26. Tracking locking ensures that point zone is _____vehicles or not.
    a) Occupied by
    b) clear of
    c) both a & b
    d) clear of road traffic Ans: C

27. _____ types of Lever Lock and Circuit Controller are available over Indian railways
    a) 1
    b) 2
    c) 3
    d) 4 Ans: D

28. SGE lever lock and circuit controller is used in _____lever frame installation.
    a) Rod run
    b) Double wire
    c) single wire
    d) electrical wire Ans: C

29. _____ can be mounted in both positions i.e., vertical position and horizontal position.
    a) I.R.S Lever Lock and Circuit Controller
    b) Saxby and Farmer Lever Lock and Circuit Controller
    c) S.G.E Lever Lock and Circuit Controller
    d) T2 Lever Lock and Circuit Controller Ans: C

30. SGE lever lock when mounted horizontally, the counter weight has to be ____to avoid unsafe side condition
    a) Removed
    b) necessary
    c) not removed
    d) compulsory Ans: A

31. In vertical position mounting, the counter weight has to _____ to avoid unsafe side condition.
    a) Removed
    b) not be necessary
    c) not be removed
    d) not be compulsory Ans: A

32. Siemens General Electric Lever Lock and Circuit Controller has two coils each of __Ohms resistance
    a) 5
    b) 6
    c) 7
    d) 6.25 Ans: D

33. two coils are connected in_____ the lock coil operates on 12 VDC.
    a) Parallel
    b) Series
    c) Both a & b
    d) Perpendicular Ans: B

34. 2 coil connected in _____ the lever lock operates on 110 VAC
    a) Parallel
    b) Series
    c) Both a & b
    d) Perpendicular Ans: A

35. IRS type Lever Lock and Circuit Controller has only one coil of _____ Ohms resistance

a) 4
b) 6
c) 8
d) 4.5 Ans: D

36. IRS type Lever Lock and Circuit Controller can be connected to _____

a) 110V AC
b) 12V DC
c) 230V
d) Both a or b Ans: D

CHAPTER - 2: ELECTRIC KEY TRANSMITTER

1. When RKT key is in locked condition then _____ contacts is/are in make condition
   a) 1 & 2, 3 & 4
   b) 3 & 4
   c) 3 & 5
   d) A & b Ans:.A

2. When RKT key is out then _____ contact/s is/are in open condition
   a) 1 & 2
   b) 3 & 4
   c) 3 & 5
   d) All Ans:.D

3. Normal working voltage of RKT is _____
   a) 3.75 DC volt
   b) 3.75 volt DC
   c) 10 volt DC
   d) 12 volt DC Ans:.A

4. Resistance of the coil RKT is _____
   a) 12.5 Ohms
   b) 600 Ohms
   c) 15 Ohms
   d) 22 Ohms Ans:.A

5. IN RKT when key is 'IN & PRESSED" what is the position of the contacts.
   a) All make
   b) All break
   c) 1, 2 & 3, 4 make
   d) 1, 2 & 3, 5 make Ans. D

6. _____ transmission of key from ASM office or Cabin to the controlled gear at site entails delay
   a) CHEMICAL
   b) Physical
   c) Social
   d) Biological Ans :B

7. The EKT are transferred electrically to avoid delay in_____.
   a) Road traffic
   b) Air traffic
   c) Water traffic
   d) Rail traffic Ans :D

8. EKT is combination of _____ and an electromagnet
   a) P-Type Lock
   b) L-Type Lock
   c) E-Type Lock
   d) G-Type Lock Ans: C

9. EKT is combination of E-Type Lock and an _____
   a) Electromagnet
   b) Magnetic power
   c) Electrical power
   d) Both b or c Ans: A

10. When key is inserted in EKT and turned to RHS then the key get _____inside EKT.
   a) Un locked
   b) Broken
   c) Locked
   d) Damaged Ans: C

11. When key is _____in EKT and turned to RHS then the key get locked inside EKT
   a) Extracted
   b) Taken out
   c) Inserted
   d) Both b or a Ans: C

12. The locked key can only be released when Electromagnet in EKT is _____
   a) De-energized
   b) Energized
   c) Dropped
   d) No supply Ans: B

13. The locked key can only be _____when Electromagnet in EKT is energized.
   a) Broken
   b) Locked
   c) Damaged
   d) Released Ans: D

14. EKT is used between
   a) L.C. Gate and Station Master/ Cabin
   b) Crank handle locking
   c) Locally operated siding point
   d) Above all Ans: D

15. Inserting of keys other than the required one is prevent by _____
    a) Lug
    b) Feather
    c) Both a & b
    d) Tumbler Ans: C

16. The _____ shall get locked in the EKT before the control can be transmitted to the other end EKT
    a) Receiving key
    b) Transmitting key
    c) Reception key
    d) Response key Ans: B

17. It shall not be _____ to extract a key once inserted and locked in the EKT
    a) Impossible
    b) Not possible
    c) Possible
    d) Both a & b Ans: C

18. It shall not be possible to extract a key once inserted and _____ in the EKT
    a) Un locked
    b) Broken
    c) Locked
    d) Damaged Ans: C

19. EKT can be _____ by the electrical control Received from the other end
    a) Released
    b) Damaged
    c) Locked
    d) Sealed Ans: A

20. It shall not be possible to release the key by jerks or any other _____means
    a) Malfunctioning
    b) Cycle spokes
    c) Irregular
    d) Above all Ans: D

21. When key is placed _____ and turned to RHS then key get locked in EKT
    a) Outside EKT
    b) Inside EKT
    c) Besides EKT
    d) Above EKT Ans: B

22. The removal of key from EKT is prevented by locking the movement of _____
    a) Tumblers
    b) Wards
    c) Lug
    d) Feather

Ans: A

23. The EKT coil has ___ no: of magnet poles
    a) 5
    b) 4
    c) 3
    d) 2

Ans: D

24. The EKT coil has _____ & _____ poles
    a) Subsidiary & Auxiliary
    b) Main & advance
    c) Main and Auxiliary
    d) Main & preliminary

Ans: C

25. EKT consists of _____numbers of finger contacts
    a) 2
    b) 3
    c) 4
    d) 5

Ans :D

26. Finger contacts are _____ with each other
    a) Conducts
    b) Insulated
    c) Connects
    d) Makes

Ans: B

27. One set on the _____ of drum assembly contain contact spring no: 1 & 2
    a) RIGHT hand side
    b) Top hand side
    c) Left hand side
    d) Bottom hand side

Ans :C

28. The set of contact springs no:3,4 and 5 are on the _____of drum assembly
    a) RIGHT hand side
    b) Top hand side
    c) Left hand side
    d) Bottom hand side

Ans :A

29. Quick Return Gear help to force the drum assembly back to its _____ position.
    a) Reverse
    b) Normal
    c) Center
    d) Extreme

Ans: B

30. _____ numbers of brass tumblers control the movement of key inside the EKT
    a) 6
    b) 5
    c) 4
    d) 3

Ans: D

31. Combination of wards and tumblers ensures that only _____ can be inserted
    a) Wrong key
    b) Improper key
    c) Right key
    d) Damaged key

Ans: C

CHAPTER-3: ELECTRIC SIGNAL REVERSER

1. Style ‘B’ reverser coil resistance is.
   a) 400 ohms
   b) 450 ohms
   c) 500 ohms
   d) 600 ohms Ans: d

2. The normal working voltage of Style ‘B’ reverser is.
   a) 10v
   b) 12v
   c) 15v
   d) 20v Ans: a

3. The normal working current of Style ‘B’ reverser is.
   a) 10.5ma
   b) 12.5ma
   c) 15ma
   d) 16.5ma Ans: d

4. The core and the armature are to eliminated effect of _____
   a) Magnetism
   b) Pick up
   c) Drop
   d) residual magnetism Ans: d

5. The oil level in the dash pot must be atleast _____ mm above the bottom of the sliding cylinder
   a) 35
   b) 45
   c) 55
   d) 65 Ans: a

6. It is not possible to pull the ____of the signal provided with Reverser to OFF position physically
   a) Arm
   b) Hand
   c) Leg
   d) Both b & c Ans: a

7. It is possible to pull the arm of the signal provided with Reverser to ____ physically
   a) Down position
   b) ON position
   c) OFF position
   d) Center position Ans: c

8. Function of dash pot provided with the sliding cylinder in Style ‘B’ reverser is _____
   a) Shock absorber
   b) Prevent breakage of spectacles
   c) Smooth stoppage of signal arm
   d) Above all Ans: d

9. Function of dash pot provided with the sliding cylinder in Style ‘B’ reverser is _____
   a) Shock absorber
   b) Stoke absorber
   c) Stroke loss
   d) Both b & c Ans: a

10. The Reverser are inter convertible _____ to _____
   a) L-Q. & CLS
   b) CLS & U-Q
   c) L-Q. & U-Q
   d) CLS & LED Ans :c

11. Style ‘B’ reverser establish an electrical control over the_____.
   a) CLS
   b) semaphore signal
   c) LED signal
   d) Position light signal Ans: b

12. ____ number of moveable levers are available in Style ‘B’ reverser
   a) 5
   b) 4
   c) 3
   d) 2 Ans: d

13. ____and operating crank are coupled together by coupling lever in Style ‘B’ reverser
   a) Spectacle crank
   b) Operating crank
   c) Coupling crank
   d) Direct lever Ans: A

14. Spectacle crank and ____ are coupled together by coupling lever in Style ‘B’ reverser
   a) Spectacle crank
   b) Operating crank
   c) Coupling crank
   d) Direct lever Ans: B

15. Spectacle crank and operating crank are coupled together by ____in Style ‘B’ reverser
    a) Spectacle lever
    b) Operating lever
    c) Coupling lever
    d) Direct lever

Ans: C

16. _____ crank and _____ levers are connected rigidly with each other
    a) Spectacle
    b) Operating
    c) Coupling
    d) Direct

Ans A

17. ___crank and _____ levers are connected rigidly with each other
    a) Spectacle
    b) Operating
    c) Coupling
    d) Direct lever

Ans: B

18. The core and armature are laminated to overcome the effect of _____
    a) battery currents
    b) direct currents
    c) eddy currents
    d) alternate currents

Ans: C

19. _____crank in rear is connected with the Spectacle lever
    a) Spectacle
    b) Operating
    c) Coupling
    d) Direct lever

Ans: A

20. _____crank is connected in rear with the operating lever
    a) Spectacle
    b) Operating
    c) Coupling
    d) Direct lever

Ans: B

21. _____ mm clearance is required between lock pawl and sliding bar
    a) 1
    b) 2
    c) 3
    d) 4

Ans :A

22. If electromagnet is not energized then signal arm cannot be taken to _____ position
    a) ON
    b) OFF
    c) Auto
    d) Both a & c

    Ans: B

23. The R1 and R2 of electromagnet coil to be interchanged _____ to nullify residual magnetisum
    a) Monthly
    b) Fortnightly
    c) Quarterly
    d) Half yearly

    Ans: B

24. The Armature pick up gives support to _____ lever
    a) Spectacle
    b) Operating
    c) Supporting
    d) Direct lever

    Ans: C

25. The ___of electromagnet coil to be interchanged Fortnightly to nullify residual magnetism
    a) Sliding bar
    b) R1 and R2
    c) core
    d) Armature

    Ans: B

CHAPTER- 4: INTER CABIN SLOTTING

1. When a Signal gear is controlled by more than one agencies with the help of slots is called as _____

   a) Inter cabin slotting
   b) Starter signaling
   c) Advance starter signaling
   d) Shunt signaling

   Ans: A

2. It should not be possible to take _____ a signal, which is slotted by one or more agencies, unless the corresponding slots have been received from these agencies.

   a) On
   b) Center
   c) Above
   d) ‘’OFF’’

   Ans: D

3. _____indication should be provided in the cabin to indicate the receipt of slot.

   a) Smell
   b) Audible
   c) Visual
   d) Taste

   Ans: C

4. In case of any emergency it should be possible for any operating or slotting agency to put back the signal arm to _____ position independently.

   a) On
   b) Center
   c) Above
   d) ‘’OFF’’

   Ans: A

5. Where track circuits are provided, the concerned slot circuits should prove clearance of

   a) BPAC
   b) SSDAC
   c) MSDAC
   d) Track circuit.

   Ans: D

6. Where track circuits are provided, the occupation of any of these track circuits should replace the signal to _____ automatically.

   a) On
   b) Center
   c) Above
   d) ‘’OFF’’

   Ans: A

7. Suitable _____ protections should be provided against any contact fault or cross feed voltage.
   a) Cross
   b) Over lap
   c) Loop
   d) Isolation

   Ans: A

8. An outer signal should be replaced to ‘’ON’’ when the slot for _____ is withdrawn.
   a) FSS
   b) LSS
   c) Homes Signal
   d) Shunt Signal

   Ans: C

9. When a slotted signal is replaced to ‘’ON’’ either by withdrawal of slot or actuation of TC by a train, other signals, which are released by the slotted signal should also be replaced to _____ automatically.
   a) On
   b) Center
   c) Above
   d) ‘’OFF’’

   Ans: A

10. These are ___ different methods used to achieve inter-cabin control or slotted signal.
    a) 2
    b) 3
    c) 4
    d) 5

    Ans: D

11. _____is provided to lock the SM’s control slides both in normal and reverse positions to prevent unauthorised operation
    a) Cabin man slide
    b) Gate man slide
    c) Station Master slide
    d) Points man slide

    Ans: C

12. A _____ indicator is required for every slotted signal
    a) Point
    b) Track
    c) Slot
    d) Gate

    Ans: C

13. Slot indicator is require to display ____indication at place of operation of slotted signal
    a) Smell
    b) Audible
    c) Visual
    d) Taste

    Ans: C

14. ____ types of indicators are used for slot indication
    a) 5
    b) 4
    c) 3
    d) 6 Ans: C

15. Disc type, Banner type and Luminous type indicators are used for _____.
    a) Slot indication
    b) CLS
    c) LED signals
    d) Both b & c Ans: A

16. Resistance of Disc and Banner type indicator coil is _____ Ω
    a) 2000
    b) 1000
    c) 3000
    d) 1200 Ans: B

17. Disc and Banner type indicators are _____to the polarity
    a) Sensitive
    b) Not sensitive
    c) Highly sensitive
    d) Sensodent Ans: B

18. Nominal working voltage of Disc and Banner type indicators are ____ V DC
    a) 13
    b) 10
    c) 12
    d) 15 Ans: C

19. Luminous indicators are provided with _____ (12V/4W) lamps
    a) SL-35
    b) SL-21
    c) SL-5
    d) SL-18 Ans: C

20. YSR means _____ relay
    a) Yellow signal
    b) Slot stick
    c) Slot signal
    d) Signal stick Ans: B

21. Normal position of YSR is _____
    a) drop
    b) latched
    c) de-latched
    d) pick up Ans: D

22. _____used to achieve one slot one train principle.
    a) KSR
    b) KTR
    c) YSR
    d) CSR Ans: C

23. SMYSR is controlled by all___ bands of concerned station master control slides.
    a) Reverse
    b) Normal
    c) AE
    d) BD Ans: B

24. Normal position of SM YSR is _____.
    a) drop
    b) latched
    c) de-latched
    d) pick up Ans: D

25. Normal position of YR is _____
    a) drop
    b) latched
    c) de-latched
    d) pick up Ans: A

26. _____ is controlled by YSR and reverse bands of concerned Slot Lever/ SM slide.
    a) KSR
    b) YR
    c) YSR
    d) CSR Ans: B

CHAPTER – 5: ELECTRIC LIFTING BARRIER

1. Specification of EOLB with hand generator RDSO/SPN/_____
   a) 180/2000
   b) 180/2015
   c) 180/2010
   d) 180/2005

Ans :D

2. Specification of EOLB without hand generator IRS – SPEC. _____
   a) S- 41/70
   b) S- 41/80
   c) S- 41/90
   d) S- 41/60

Ans :A

3. Level crossing gates are classified as _____class
   a) Special, A,
   b) B, C
   c) C & D
   d) Both a,b & c

Ans :D

4. Electric lifting barrier provides _____to avoid physical strain on gate man.
   a) Easy operation
   b) Difficult operation
   c) Tuff operation
   d) Feather touch operation

Ans :A

5. In EOLB Crank handle facilitate _____of gate in case of power or hand generator failure
   a) Difficult operation
   b) Tuff operation
   c) manual operation
   d) Feather touch operation

Ans :C

6. in EOLB Both barriers have to be cranked _____as they are not mechanically linked.
   a) Combinedly
   b) together
   c) at a time
   d) Separately

Ans :D

7. The time of operation in EOLB is only_____.
   a) 20 sec
   b) 10 sec
   c) 30 sec
   d) 40 sec

Ans :B

8. Maximum length of a barrier in EOLB is _____feet
   a) 52
   b) 62
   c) 32
   d) 42

Ans : C

9. Maximum length of a barrier in EOLB is _____meter
   a) 9.76
   b) 10.76
   c) 11.76
   d) 12.76

Ans : A

10. Boom Segments are bolted together which facilitate easy replacement in case of damage to barrier by road vehicles, hence break down time can be _____
    a) increased
    b) delayed
    c) reduced
    d) more

ans C

11. Feasibility of remote operation in conjunction with _____
    a) Pen camera
    b) close circuit TV
    c) mobile camera
    d) spy camera

ans : B

12. In EOLB the length of barrier is up to 32 ft is available in_____
    a) 5 pieces
    b) 6 pieces
    c) 4 pieces
    d) 8 pieces.

Ans :C

13. In EOLB the length of barrier is up to 32 ft and each piece is ____feet length.
    a) 9
    b) 8
    c) 7
    d) 6

Ans :B

14. M.S. counter weights are fixed in _____ for balancing of barrier on balance channel
    a) fixed holes
    b) curved holes
    c) slotted holes
    d) grouped holes

Ans : C

15. Red color boom light is fixed in the centre of boom facing towards ____
    a) Road
    b) Rail
    c) Driver
    d) Guard

Ans :A

16. The height of the boom from road level shall not be more than ____mm
    a) 2000
    b) 3000
    c) 4000
    d) 1000

Ans: D

17. The height of the boom from the rail level shall be _____
    a) 0.6 m to 1.0 m
    b) 0.8 m to 1.0 m
    c) 0.8 m to 0.4 m
    d) 0.8 m to 6.0 m

Ans :B

18. Fringes, if provided, shall be clear of road surface by not more than cm. When the boom is in the horizontal position
    a) 45
    b) 35
    c) 15
    d) 25

Ans :C

19. Red disc having red reflector buttons shall be provided at the centre of the barrier with a diameter of _____ facing the road traffic.
    a) 800 mm
    b) 400 mm
    c) 1000 mm
    d) 600 mm

Ans : D

20. The raised or open position of the lifting barrier shall be within ____from the horizontal
    a) 90 degrees to 85degrees
    b) 90 degrees to 70degrees
    c) 80 degrees to 85degrees
    d) 90 degrees to 70degrees

Ans : C

21. The lowered or closed position of the lifting barrier shall be within ____from the horizontal
    a) 10degrees
    b) 20degrees
    c) 15degrees
    d) 25degrees

Ans : A

22. The boom shall be painted / pasted with radium sticker alternately with 300 mm Bands of _____
    a) white and yellow
    b) black and red
    c) red and yellow
    d) black and yellow

ans :D

23. In EOLB, in case of failure of power supply, the barrier shall ____.
    a) Assume the open position
    b) Assume the close position
    c) remain in the position last assumed
    d) fall on the public

ans :C

24. Insertion of _____shall disconnect the power supply to the motor
    a) Crank handle
    b) Gate man key
    c) Hand
    d) Both b & c

Ans : A

25. Power rating of EOLB is _____ watts for DC model

a) 120
b) 220
c) 320
d) 420

Ans : A

26. Power rating of EOLB is _____ watts for AC model

a) 350
b) 450
c) 550
d) 250

Ans : D

27. Audible and visual warning arrangements for the road traffic shall start operating _____ before operation of the barrier

a) 10 to 15 seconds
b) 15 to 20 seconds
c) 20 to 25 seconds
d) 6 to 8 seconds

Ans: D

28. The bell warning shall operate with a clear ringing sound and shall be audible for a distance of not less than _____

a) 600 metres
b) 900 metres
c) 300 metres
d) 500 metres

Ans: C

29. The visual warning arrangement shall consist of a road signal of the colour light signal type and the range of visibility shall not be less than _____

a) 180m
b) 300m
c) 400m
d) 500m

Ans: A

30. EOLB operates with _____ voltage

a) 24 VDC
b) 110 VDC
c) 110 VAC
d) All a, b & c

Ans : D

31. The RPM DC Permanent Magnet motor Motor is _____

a) 1300
b) 1400
c) 1500
d) 1600

Ans: C

32. _____operation of EOLB which improved the service condition of gate man.

a) mindless
b) Effortless
c) senseless
d) manner less

ans :B

33. The fringes if connected shall be painted / pasted with radium sticker alternately with 300 mm Bands of _____ colour

a) white and yellow
b) black and red
c) red and yellow
d) black and yellow

ans :D

34. Lifting barrier shall have _____booms, one across the road on either side of the track operated by independent mechanism.

a) Three number
b) Two number
c) Five number
d) Six number

Ans : B

35. limit switch are actuated by _____Cams.

a) carbon66
b) Nylon77
c) Nylon66
d) Sodium 66

Ans :C

36. Cams are adjustable for full _____ deg for accurate adjustment of make/ break angle

a) 360
b) 260
c) 160
d) 60

Ans : A

37. limit switch should have
    a) Top Roller Type
    b) Highly Durable
    c) Both a & b
    d) Low quality

Ans : C

38. Nylon66 cams fixed on the boom shaft actuate the _____switches.
    a) relay
    b) Limit
    c) router
    d) contact

Ans : B

39. Nylon66 cams fixed on the _____ shaft actuate the limit switches
    a) Gear shaft
    b) motor shaft
    c) boom shaft
    d) friction clutch shaft

ans : C

40. LIMIT SWITCHES provided in HEDZI EOLB are _____
    a) LS1 & LS2
    b) LS3 & LS4
    c) LS5 & LS6 (Crank handle cut out contact)
    d) ALL A,B & C

Ans : D

41. _____ limit switch control feed to the motor while closing the gate
    a) LS1
    b) LS2
    c) LS3
    d) LS4

Ans : A

42. _____ limit switch control feed to the motor while opening the gate
    a) LS1
    b) LS2
    c) LS3
    d) LS4

Ans : B

43. _____ limit switch control the snubbing circuit to slow down the motor

a) LS1
b) LS2
c) LS3
d) LS4

Ans : C

44. _____ limit switch control the indications/relays in the fully open & closed positions of gate

a) LS1 & LS2
b) LS1 & LS3
c) LS2 & LS3
d) LS4 & LS5

Ans :D

45. ____is to be adjusted such that its N-O Contact just breaks in the fully closed position of barrier

a) LS1
b) LS2
c) LS3
d) LS4

Ans : A

46. ____ is to be adjusted such that its N–O contact just breaks in the fully open position of barrier

a) LS1
b) LS2
c) LS3
d) LS4

Ans : B

47. _____ is to be adjusted such that its N-O contact just makes at about 20 – 30 deg to horizontal

a) LS1
b) LS2
c) LS3
d) LS4

Ans : C

48. _____are to be adjusted such that it's N-O contact just makes in the fully closed position of barrier

a) LS1 & LS2
b) LS1 & LS3
c) LS2 & LS3
d) LS4 & LS5

Ans :D

49. _____ provides overload protection to motor in EOLB
    a) Friction clutch
    b) Limit switch
    c) Crank handle
    d) Both b & c

Ans : A

50. The friction clutch and the motor are connected by a _____
    a) Normal Belt.
    b) Italian Belt.
    c) Timing Belt.
    d) Leather Belt.

Ans : C

51. Solenoid is an Electromagnet and designed to work on _____ voltage
    a) 24 volts DC
    b) 110 volts Ac
    c) 230 volts AC
    d) Both a & c

Ans: D

52. _____is used to unlock the boom when gate is to be open in EOLB
    a) Limit switch
    b) Solenoid
    c) Read switch
    d) Both a or c

Ans : B

53. If OPEN/ CLOSE push button is release, the Barriers _____ in that position.
    a) proceed
    b) run over
    c) Stop
    d) collapse

Ans : C

54. By Selecting Auto mode on Auto/ manual Selector switch in hedz EOLB operates with _____
    a) crank handle
    b) hand generator
    c) power supply
    d) JCB

Ans : C

55. By Selecting Manual mode on Auto/ manual Selector switch in hedz EOLB operates with _____

a) crank handle
b) hand generator
c) power supply
d) JCB

Ans : B

56. To open the EOLB ___ button is to be pressed until the gate assumes more than 85 degree

a) Open
b) Close
c) Slot
d) Signal

Ans :A

57. To close the EOLB ___ button is to be pressed until the gate assumes less than 10 degree

a) Open
b) Close
c) Slot
d) Signal

Ans :B

58. Individual Barrier Operation facility is provided in _____ gate

a) EOLB
b) Mechanical
c) Swing type
d) Both a & c

Ans C

59. In case both power and hand generator operation fails then gate can be operated by _____ one by one

a) crank handle
b) hand generator
c) power supply
d) JCB

Ans:A

60. In case both power and _____operation fails then gate can be operated by crank handle one by one

a) crank handle
b) hand generator
c) power supply
d) JCB

Ans:B

61. In case both _____ and hand generator operation fails then gate can be operated by crank handle one by one
    a) crank handle
    b) hand generator
    c) power supply
    d) JCB

Ans:C

62. Rotation of crank handle in _____direction for closing of boom in EOLB
    a) Anti clockwise
    b) clockwise
    c) positive
    d) negative

ans : B

63. Rotation of crank handle in _____ direction for opening of boom in EOLB
    a) Anti clockwise
    b) clockwise
    c) positive
    d) negative

ans : A

64. Rotation of _____ in clockwise direction for closing of boom in EOLB
    a) crank handle
    b) toggle switch
    c) knob
    d) limit switch

ans:A

65. Rotation of _____ in Anti clockwise direction for opening of boom in EOLB
    a) toggle switch
    b) knob
    c) crank handle
    d) limit switch

ans:C

66. _____ is used for Smooth stop at the end of the closed position is achieved
    a) Snubbing Resistor
    b) Snubbing condenser
    c) Snubbing diode
    d) Snubbing voltage

Ans:A

67. Snubbing Resistor operates with the help of ___ limiting switch.

a) LS1

b) LS2

c) LS3

d) LS4

Ans :C

68. Use gear oil _____ or equivalent. Qty. 1.5 litres in each barrier & 0.3 Litres in each hand generator gear box in EOLB.

a) SAE 30

b) SAE 50

c) SAE 60

d) SAE 90

Ans : D

Objective Questions

CHAPTER-1 : Electric Point and Lock Detector (IRS Type)

1) When Electrical Point Detector(EPD) is fixed on double slip then Detector slides used are (d)
a) Detector slid C &D
b) Detector slid A & B
c) Detector slid C,D & lock slid A
d) a,b

2) In Electrical Point Detector(EPD) , use of Detector slide 'C' shall be connected to (a)
a) Nearest switch rail
b) farthest switch rail
c) Any one switch rail
d) FPL

3) In Electrical Point Detector(EPD), movement of Lock slide ('A' & 'B') (a)
a) 32 MM
b) 10 MM
c) 42MM
d) 0 MM

4) In Electrical Point Detector(EPD), movement of Detector slides ('C' & 'D') in case of BG (a)
a) 115 MM
b) 100 MM
c) 143 MM
d) 220 MM

5) In Electrical Point Detector(EPD), Total number of contacts ('detection & 'shunt') (d)
a) 10 nos
b) 06 nos
c) 12 nos
d) 08 nos

6) In Electrical Point Detector(EPD), Total number of contacts ('detection & 'shunt') (d)
a) 10 nos
b) 06 nos
c) 12 nos
d) 08 nos

7) In Electrical Point Detector(EPD), Types of Shunt contacts are (c)
a) Nsh
b) Rsh
c) Nsh & Rsh
d) Nd & Rd

8) In Electrical Point Detector(EPD), Total number of Shunts contacts (d)
a) 04
b) 06
c) 08
d) 02

9) Electrical Point Detector(EPD) is fixed beween sleeper number __& ___ from SRJ (c)
a) 3&4
b) 1&2
c) 2&3
d) 5&6

10) Electrical Point Detector(EPD) Detection relay works on power supply (c)
a) 24 VDC
b) 60 VDC
c) 24 & 60 VDC
d) 110 V AC

11) In case of Electrical Point Detector(EPD), Point set in Normal and locked then which contacts will be made (c)
a) Nsh & Nd
b) Nsh &Rd
c) Rsh & Nd
d) Rsh & Rd

12) In case of Electrical Point Detector(EPD), Point set in Reverse and locked then which contacts will be made (b)
a) Nsh & Nd
b) Nsh &Rd
c) Rsh & Nd
d) Rsh & Rd
ANSWER- B.

13) In case of Electrical Point Detector(EPD), Point set in Reverse and un-locked then which contacts will be made (c)
a) Nsh & Nd
b) Nsh &Rd
c) Rsh & Nsh
d) Rsh & Rd

14) In case of Electrical Point Detector(EPD), Point set in Normal and un-locked then which contacts will be made (c)
a) Nsh & Nd
b) Nsh &Rd
c) Rsh & Nsh
d) Rsh & Rd

15)) Electrical Point Detector(EPD) what grade of oil is used to lubricate the slide the rolls and pins (b)
a) IS 1328
b) IS 1628
c) IS 1378
d) IS 1358
.

16) Electrical Point Detector(EPD) : 3.25mm Obstruction test is done at what distance from the toe of the switch (b)
a) 120mm
b) 150mm
c) 170mm
d) 160mm

17) Electrical Point Detector(EPD) : when 3.25mm Obstruction test is done (a)
a) the bridge contact should not make
b) the bridge contact should make
c) the shunt contact remains open
d) the points get locked

CHAPTER-2: Introduction to Power Operation of Points

1) Advantage of power operation of point (d)
a) Quick operation
b) Longer distance
c) throw, lock & dectection at the same operation
d) a,b&c

2) Method of point cross over(A end & B end) is operated by Electric point machine (d)
a) Series method
b) Parallel method
c) Series and Parallel method
d) a or c

3) purpose of Frictiotn in case of Electric point machine (b)
a) limits thorow
b) over load protection for Motor
c) ensures lock
d) slips end after detection makes

4) time consumed for operation in case of Electric point machine (a)
a) 3-5 sec
b) 6-9 sec
c) 0-2 sec
d) 7-10 sec

5) purpose of Gears reduction in case of Electric point machine (a)
a) reduces speed to increase torque
b) over load protection for Motor
c) ensures smooth operation
d) quick operation

6) purpose of Crank handle cut out contacts in case of Electric point machine (b)
a) over load protection for Motor
b) ensures either manual or power operation
c) ensures smooth operation
d) quick operation

CHAPTER-3 :IRS ROTARY TYPE

1) The stroke of a low stroke point machine is (b)
a) 140mm
b) 143mm
c) 200mm
d) 220mm

2) Point is set and lock in normal contacts make. (b)
a) RD&NC
b) RC&ND
c) ND&RD
d) NC&RC

3) Point is set and lock in reverse contacts make. (a)
a) RD&NC
b) RC&ND
c) ND&RD
d) NC&RC

4) SAE30 gear oil is to be poured once in. (b)
a) 3months
b) 6months
c) 7months
d) 9months

5) RPM of the point motor is. (d)
a) 1400
b) 1500
c) 1600
d) 1700

6) Insulation resistance of point motor should be more than. (a)
a) 10 mega ohms
b) 15 mega ohms
c) 20 mega ohms
d) 30 mega ohms

7) AC immunity of the point motor is (b)
a) 130VAC
b) 160VAC
c) 170VAC
d)180VAC

8) The total movement of the drive disc is. (c)
a) 220degree
b) 250degree
c) 270degree
d) 290degree

9) The leading stretcher bar is to be fixed at ____mm from toe (c)

a) 220mm
b) 250mm
c) 470mm
d) 290mm

10) The point motor is fixed on which sleeper (a)
a) 4th & 5th sleeper
b) 5th & 6th sleeper
c) 3th & 4th sleeper
d) 1th & 2th sleeper

11) The IRS point machine is provided with which locking (a)
a) IN & OUT Locking
b) OUT & IN Locking
c) ROTATORY Locking
d) Reverse & Forward Locking

12) IRS point machine: number of teeth available in the main gear rim (a)
a) 92 Nos
b) 82 Nos
c) 72 Nos
d) 52 Nos

13) Various detection contact available in IRS point machine (c)
a) 1/1a,2/2a 5/5a,6/6a
b) 1/1a,2/2a 3/3a,4/4a
c) 3/3a,4/4a 7/7a,8/8a
d) 1/1a,3/3a 5/5a,6/6a

14) Snubbing arrangement is provided in IRS point machine (b)
a) electrical Snubbing
b) mechanical Snubbing
c) No Snubbing
d) A & B

15) How many dectection and control are available in Siemens point machine (b)
a) 2 Control & 2 Detection contacts
b) 4 Control & 4 Detection contacts
c) 4 Control & 6 Detection contacts
d) 1 Control & 1 Detection contacts

16) During obstruction test of machine operated point with 5mm test piece (d)
a) Point shall not lock
b) friction clutch shall slip
c) Detection contacts shall not make
d) a,b & c

17) Difference between normal working current and obstruction current shall not be more than
a) 0.5 Amps (a)
b) 5 Amps
c) 2.5 Amps
d) 10 Amps

18) power supply to point machine is control at _____ level (d)
a) Circuit
b) Battery
c) machine
d) a & c both

19) Crank handle contacts are provided to simultaneous _____ and _____ operation (d)
a) power
b) manual
c) hydraulic
d) A & B

20) Obstruction current shall not be more than _____ of normal working current (b)
a) 2 times
b) 0.5 times
c) 100 times
d) 4 times

21) IRS point machine: number of teeth available to the motor pinion (a)
a) 12 Nos
b) 18 Nos
c)17 Nos
d) 15 Nos

22) IRS point machine: spring loaded friction clutch consist (c)
a) slip ring
b) compression spring assembly
c) A & B
d) drive disc

CHAPTER-4 : Siemens point machine

1) The opening of the conventional Point machine is (c)
a) 160-170mm
b) 180-190mm
c) 95-115mm
d) 220-225mm

2) The Siemens point machine is fixed with how many bolts (b)
a) 4 nos
b) 2 nos
c) 3 nos
d) 5 nos

3) which of the following bracket is Siemens point machine ground connections are fixed.(a)
a) D backet
b) A backet
c) B backet
d) C backet

4) In Siemens point machine how many greesing nipples are available (b)
a) 4 nos
b) 8 nos
c) 3 nos
d) 5 nos

5) The stroke of Siemens point machine (b)
a) 114 nos
b) 118 nos
c) 143 nos
d) 115 nos

6) Various detection contact available in Siemens point machine (c)
a) 1/1a,2/2a 5/5a,6/6a
b) 1/1a,2/2a 3/3a,4/4a
c) 3/3a,4/4a 7/7a,8/8a
d) 1/1a,3/3a 5/5a,6/6a

7) Snubbing arrangement is provided in Siemens point machine (b)
a) electrical Snubbing
b) mechanical Snubbing
c) No Snubbing
d) A & B

8) How many dectection and control are available in Siemens point machine (b)
a) 2 Control & 2 Detection contacts
b) 4 Control & 4 Detection contacts
c) 4 Control & 6 Detection contacts
d) 1 Control & 1 Detection contacts

9) Siemens point machine: If Point set in Normal and locked then which contacts will be made
a) Nc & Nd (b)
b) Rc & Nd
c) Rc & Nc
d) Rd & Rc

10) Siemens point machine Point set in Reverse and locked then which contacts will be made
a) Nc & Rd (a)
b) RC & Rd
c) Nc & Rc
d) Rd & Nd

11) Siemens point machine Point: If the point is set in Reverse and un-locked then which contacts will be made (a)
a) Nc
b) Nc & Rc
c) RD & ND
d) RC & RD

12) In case of Siemens point machine Point, Point set in Normal and un-locked then which contacts will be made (c)
a) nc
b) Nd &Rd
c) Rc
d) Rc & Rd

13) Siemens point machine: the complete rotation of transmission assembly is just over (a)
a) 270 degree
b) 290 degree
c) 320 degree
d) 340 degree

14) what is the rated voltage of Siemens point machine operation (a)
a) 110 VDC
b) 24 VDC
c) 110 V AC
d) 12 VDC

15) What is the obstruction current of Siemens point machine (a)
a) 1.6 times of working
b) 2.6 times of working
c) 2.2 times of working
d) 2.3 times of working

16) what is the rated current consumption of Siemens point machine (a)
a) 2 Amps
b) 9 Amps
c) 3 Amps
d) 4 Amps

17) Siemens point machine: the spacing between sleeper no 3 & 4 shall be (a)
a) 685mm
b) 985mm
c) 385mm
d) 485mm

18) what is minimum power operating voltage of Siemens point machine (d)
a) 110V DC
b) 24 V DC
c) 12 AC
d) 60 V DC

19) what metal strips are provided between the two point detection slides to avoid the slides getting move together in case of breakage (d)
a) aluminium
b) Gold
c) copper
d) Brass

20) Siemens point machine: the idle strike to be given (a)
a) 25mm
b) 65mm
c) 45mm
d) 33mm

21) Siemens point machine: clearance of the ground connection rods from the bottom of the rail
a) 15mm (d)
b) 65mm
c) 45mm
d) 25mm

22) Siemens point machine: centre line of the point machine shall be what distance from the nearest gauge face of the rail (a)
a) 1050 mm
b) 15665mm
c) 1145mm
d) 1125mm

CHAPTER-5: IRS Clamp type point machine

1) The stroke of a high stroke point machine is (c)
a) 160mm
b) 180mm
c) 200mm
d) 220mm

2) Unlock of the point for clamp type point machine is. (d)
a) 130mm
b) 160mm
c) 100mm
d) 60mm

3) Throw of the point for clamp type point machine is. (c)
a) 130mm
b) 160mm
c) 100mm
d)220mm

4) locking of the point for clamp type point machine is. (b)
a) 130mm
b) 60mm
c) 100mm
d)220mm

5) Switch opening of the point for clamp type point machine is. (b)
a) 130mm
b) 160mm
c) 180mm
d) 220mm

6) J.O.H clearance in clamp type point machine should be more than. (a)
a) 57mm
b) 60mm
c) 80mm
d)100mm

7) SSD of the point for clamp type point machine is. (c)
a) Switch setting device
b) Spring setting device
c) Shunt switch device
d) Switch spring device

8) The Thrust of a low thrust point machine is (b)
a) 400kg
b) 450kg
c) 500kg
d) 550kg

9) The Thrust of a high thrust point machine is (d)
a) 400kg.
b) 500kg.
c) 600kg,
d) 700kg.

10) Due to the 160 mm opening of thick web switch at toe the clearance at junction of rail head is (b)
a) 50mm.
b) 60mm.
c) 70mm,
d) 80mm.

11) A clamp lock that clamps together the closed switch against the (a)
a) stock rail
b) Tongue rail
c) SRJ
d) Fish plate

12) which is not the part of IRS clamp type machine (c)
a) Stopper
b) Insulating plates
c) rubber pad
d) drive lug

13) What is rated voltage of IRS clamp type point machine (a)
a) 110V DC
b) 24 V DC
c) 110V AC
d) 60 V DC

14) What round per minute of the DC series motor used in IRS clamp type machine (a)
a) 1110
b) 1700
c) 1500
d) 1600

15) What is the rated current of IRS clamp type point machine (b)
a) 4.0A to 8.0A
b) 5.3A to 8.5A
c) 3.3A to 8.0A
d) 2.3A to 8.0A

16) What is the operating time of IRS Clamp type Point machine (a)
a) 4 to 5 Second
b) 4 to 10 Second
c) 1 to 2 Second
d) 10 to 12 Second

17) What is the power of DC series motor of IRS clamp point machine (d)
a) 240 Watts
b) 200 Watts
c) 330 Watts
d) 440 Watts

18) What type of gear oil is used for lubrication (d)
a) SGE 30
b) SAE 40
c) SAE 95
d) SAE 30

19) Spring Setting Device(SSD) is provided in between sleepers (a)
a) 13 & 14
b) 15 & 16
c) 11 & 12
d) 17 & 18

20) How many grease gun stroke should be used in each nipple provided to lubricate the bearings (a)
a) 5
b) 3
c) 7
d) 9