SOUTH CENTRAL RAILWAY

Headquarters Office,
Personnel Branch,
Secunderabad.

Dt.22.09.2025.

No.SCR/P-HQ 210(a)/Tech.III/Signal/Syllabus & Question bank

Sr.DPO/SC, HYB, GTL, GNT, BZA & NED

Sub:-Administrative reforms in Departmental selections- Standardization and Unification of Syllabus-Question Bank and Syllabus of Tech-III/Signal & Tech-III/Tele LDCE Quota.

Ref:-Railway Board Letter No. (NG)I/2025/PM1/3 Dt.17.06.2025

****

In terms of Railway board instructions contained in Letter dated.17.06.2025, the standardized and unified syllabus along with the sample Question bank for the post of Tech-III/Signal & Tech-III/Tele LDCE Quota approved by PCSTE is enclosed herewith for further necessary action.

Hence all the divisions are hereby advised to ensure common syllabus may be enclosed along with the notification without any deviation.

Tech-III/Signal - Page No. 03 to 273
Tech-III/Tele --- Page No. 274 to 361.

Syllabus and sample question bank is available in the official website of SCR.

Encl:- As above.

M. V. Prasad 22/09/25
(M.V.Prasad)
APO/M&EL
For Prinicipal Chief Personnel Officer/SC

Copy to:- Sr.DSTE/ SC, HYB, GTL, GNT, BZA & NED.
Dy.CPO/Rectt & Chairman/ RRC for kind information please
Dy.CPO/HQ is requested to place on the official website please.

दक्षिणमध्यरेलवे
South Central Railway

प्रमुखमुख्यसिगनलएवंदूरसंचारइंजीनियरकार्यालय
Office of the Principal Chief Signal & Telecom Engineer
7वाँतल,रेलनिलयम/ 7th Floor, Rail Nilayam
सिकंदराबाद / Secunderabad -500003
Date : 22/09/2025

e-No.156622

PCPO/SC

(Kind Attn: APO/Cadre)

Sub : Selections – CBT mode in departmental promotions
Ref : PCPO/SC's Lr.No.SCR/P-HQ/226/SEL/2025 dtd:15.7.2025, 30.7.2025 & 6.8.2025

*****

With reference to the above cited letter, the syllabus and question banks for JE (Signal), Technician -III (Signal) and Technician - III (Tele) are forwarded herewith for further necessary action at your end please.

Encl: as above

(T.Neela Pavani)
Dy.CSTE/HQ

दक्षिण मध्य रेलवे
South Central Railway

मंडल रेल प्रबंधक के कार्यालय, हैदराबाद भवन,
सिगनल और दूरसंचार विभाग,
Office of the Divisional Railway Manager, Hyderabad Bhavan,
Signal & Telecommunication Department

No. Y/SG/HQ/Misc **Dt:- 11-09-2025**

Dy. CSTE/HQ

Sub: Preparation of Syllabus and Question Bank for Tech-III/Signal LDCE Quota.

Ref: 1. Your office Lr.No: SCR-HQ0SNT(ESTB)/2/2021 (e-156622), dt: 26.08.2025.
2. PCPO/SC's Lr.No.SCR/P-HQ/226/SEL/2025 dt: 15.7.2025, 30.07.2025 & 06.08.2025.

***

With reference to the above, the undersigned are nominated to draft and finalize the syllabus and question bank for the Tech-III/Signal LDCE Quota examinations.

Syllabus has been prepared to cover the necessary technical knowledge and operational procedures required as per the RB guidelines for the role of a Tech-III/Signal in S&T department. Question bank has been prepared in comprehensive, providing a wide range of questions to adequately test the candidates understanding of the subject contents.

Draft syllabus and question bank for the Tech-III/Signal LDCE are hereby submitted for your review and approval.

YANNA SRUJAN KUMAR
Digitally signed by YANNA SRUJAN KUMAR
Date: 2025.09.12 19:36:41 +05'30'

(Y. Srujan Kumar)
Sr. DSTE/HYB

Prathamesh Kakade
Digitally signed by Prathamesh Kakade
Date: 2025.09.13 11:49:08 +05'30'

(Prathamesh Kakade)
Principal/STTC/MLY

Syllabus for LDCE for Centralized Computer Based Test (CCBT) for Tech-III/Signal

I. GENERAL

- Organization Structure of Railways and S&T Department.
- Organization Structure of S&T.
- Duties of Technicians
- Abbreviations & Symbols

II. SAFETY

- Knowledge and Cleanliness of Work Place, Store, Tools etc.
- Knowledge about usage of uniform, personal safety appliances & their usage
- Usage of fire extinguishers.
- Precaution while working in RE Area.
- Passenger Safety by duly following Safe working Rules
- Personal safety while working on the Railway Track, RE area, LC gates
- Fire Safety-Automatic Fire Detection & Suppression System
- First aid and cleanliness.
- Knowledge of Hand signals
- Protection of evidence at accident sites

III. TRAIN OPERATION

- Test room working, Control office working
- Disconnection & Reconnection procedures.
- Knowledge and importance of S&T MR & S&T DN, Consent Memo and Maintenance of Signaling equipments
- Schedule of dimensions applicable to S&T gears.

IV. SIGNALING SYSTEMS

- **Measuring equipment**-Multimeter, Voltmeter, Ammeter, Clamp meter, Megger, Hydrometer, Earth tester, Earth Leakage detector, Cable route tracer, Cable Fault Locator etc, Soldering iron and soldering technique, Usage of the Tools
- **Cable:** Types of cables, colour coding. Different cables used in S&T including OFC cable and cable laying Procedure, Periodical test on cables, fault, fault localization and rectification, Usage of Earth leakage device(ELD), Insulation resistance value. Parameters/ characteristics of all type of relays
- **Power Equipments-** Testing and maintenance of primary and secondary cells, Initial/Float/Boost/Trickle charging of secondary cells- Integrated Power Supply-working principle, parameters, capacity, usage, trouble shooting,
  Basic Concept Of Signaling- Location of Signals, Subsidiary Signals, Markers, Boards, Signs etc., Overlaps, braking distance, sighting distance., Level Crossing Gates, EKT and use, IRS type ED, Testing of inter slot

- **Track Circuit-**Various components, parameters, Track drilling, bonding and connecting feed and relay end, Track Circuits Periodical maintenance & breakdown attendance of field portion of Track Circuit., Different types of Axle counters like UAC, SSDAC, MSDAC, HASSDAC and its applications.
- **Point Machine-** Combined type point machines IRS, Thick web switch and high thrust point machine, Different type of ground connections, mounting sleeper spacing etc, Precautions while working on point machine , Adjustment of points, maintenance skills
- **Panel Interlocking-** Basic principle of interlocking, Colours of Buttons / Switches used on the Panel , sequence of operations on panel, Route cancellation procedures
- **Level crossing gates**-Periodical maintenance & breakdown attendance of Interlocking arrangement of mechanical lifting barrier, Sliding boom, Electrically Operated Lifting barrier, Road warning Signals, Hooter.

GENERAL

1. Classification of Railway servants Categories under HOER are_____ ( )
   a. 3 b. 2 c. 4 d. 1

2. In HOER an employee in confidential capacity comes under ( )
   a. Excluded b. Intensive c. Continuous d. Essential Intermittent

3. An employee in essential intermittent category is ( )
   a. ASM b. ESM. c. WTM d. Gateman

4. In continuous category an employee working hours is ( )
   a. 48hrs/week b. 54hrs/week c. 32hrs/week d. 60hrs/week

5. Running staff comes under which category? ( )
   a. Excluded b. Intensive c. Continuous d. Essential Intermittent

6. Max. working hours/week for an employee in essential intermittent category. ( )
   a. 48hrs/week b. 54hrs/week c. 72hrs/week d. 42hrs/week

7. Attenders in waiting rooms comes under which category ( )
   a. Excluded b. intensive c. essential intermittent d. Intensive

8. An employee works 42 hours per week and with 30 consecutive hours of rest comes under ( )
   a. Excluded b. Intensive c. Essential intermittent d. Continuous

9. SF-1 (Standard Form) is issued to an employee ( )
   a. To place under suspension b. revocation of suspension
   c. both a & b d. None

10. SF-8 is for in DAR is ( )
    a. Issuing a charge sheet in case of common proceedings
    b. For appointment of an enquiry officer
    c. For appointment of a presenting officer.
    d. Both b & c.

11. SF-5 is proposed to take up an employee for imposition of ( )
    a. Major penalty b. Minor penalty c. Revocation d. Suspension.

12. Who can avail paternity leave in Indian Railways? ( )
    a. Male employee b. Women employee
    c. both a & b d. trainee employee

13. Censure is_____penalty. ( )
    a. Major b. Minor c. both a & b d. none

14. SF-11 is_____penalty. ( )
    a. Minor b. Major c. both a & b d. none

15. _____no. of privilege passes/year for non gazetted employee having more than 5 years of service ( )
    a. 1 b. 2 c. 3 d. 4

16. Maternity leave is granted for_____days. ( )
    a. 180 days b. 90 days c. 270 days d. 360 days

17. No. of stipendiary leaves for an apprentice in IR. ( )
    a. 8 b. 10. c. 16 d. 15

18. No of casual leaves for an railway employee of open line in a year. ( )
    a. 8 b. 10 c. 11 d. 15.

19. Hindi divas is on ( )
    a. 22 August b. 14 September c. 12 June d. 14 February

20. How many languages is incorporated in 8th schedule? ( )
    a. 8 b. 12 c. 16 d. 22

21. Which region is Non-speaking Hindi ( )
    a. A region b. B region c. C region d. both a & b

22. No's of PTO's can be availed by a Railway employee in a year is ( )
    a. 3 b. 4 c. 2 d. 6

23. A Railway employee maximum how many LAP's can be accumulated in his service ( )
    a. 50 b. 200 c. 250 d. 300

24. Child care leave (CCL) is granted for how many years? ( )
    a. 1 year b. 2 years c. 3 years d. 4 years

25. Per year how many LAP leaves is credited into employee account? ( )
    a. 15 days b. 20 days c. 25 days d. 30 days

26. Per year how many LHAP leaves is credited into employee account? ( )
    a. 15 days b. 20 days c. 25 days d. 30 days

27. Duty pass is issued in the form of ( )
    a. metal pass b. card pass c. check pass d. all

28. What are the night duty hours ( )
    a. 10 PM-6AM b.9 PM-5AM c. 11PM-6AM d. 12PM-6AM

29. Time limit for submission of claim of travelling allowance (TA) is____days succeeding the date of completion of journey ( )
    a. 30 days b. 60 days c. 90 days d. 120 days

30. Who is the competent authority to approve 3rd chance to ward / widow for appointment on compassionate grounds ( )
    a. GM b. AGM c. PCPO D. DRM

A N S W E R S K E Y

1	2	3	4	5	6	7	8	9	10
c	a	d	a	c	c	c	b	a	c
11	12	13	14	15	16	17	18	19	20
a	a	b	a	c	a	c	b	b	d
21	22	23	24	25	26	27	28	29	30
c	b	d	b	d	b	d	a	b	a

MEASURING INSTRUMENTS & PORTABLE HAND TOOLS

1) _____test can be performed with megger ( )
   a. Earth Fault b. Open circuit c. Short circuit d. All

2) Current can be measured directly without disconnecting the circuit with _____meter ( )
   a. Voltmeter b. Ammeter c. Clip-on-meter d. Megger

3) Voltmeter is to be connected in_____to the circuit. ( )
   a. Series b. Parallel c. Series-parallel d. none

4) Ammeter is to be connected in_____to the circuit. ( )
   a. Series b. Parallel c. Series-parallel d. none

5) Insulation resistance of signaling cable should not be less than____per KM. ( )
   a. 5 MΩ b. 10 MΩ c. 2 MΩ d. 10 Ω

6) Earth leakage detector can be used for_____ ( )
   a. ON line meggering b. OFF line meggering
   c. both a, b d. None

7) Clip on meter is used for measuring_____in the circuit. ( )
   a. current without disconnection of links b. voltage
   c. resistance d. None

8) ELD measures cable_____ ( )
   a. voltage b. current c. resistance d. Insulation leakage

9) Earth tester measures_____ ( )
   a. voltage b. earth resistance
   c. cable resistance d. Insulation leakage

10) Signaling cables will be measured with_____DC megger. ( )
   a. 500v b. 100v c. 200v d. 110v

11) Quad cable will be measured with_____DC megger. ( )
   a. 500v b. 100v c. 200v d. 110v

12) For measuring attenuation loss in Quad cable_____instrument is used ( )
   a. TMS kit b. Cross talk measuring set
   c. Megger d. OTDR

13) _____instrument is used to check continuity of CAT cable ( )
a. TMS kit b. LAN tester
c. Megger d. OTDR

14) _____meter is used to measure power loss in OFC ( )
a. Optical power meter b. LAN tester
c. Megger d. OTDR

15) For measuring attenuation loss in OFC cable_____instrument is used ( )
a. TMS kit b. Cross talk measuring set
c. Megger d. OTDR

16) To Increase the range of volt meter, resistance to be added in_____ ( )
a. Series b. Parallel
c. Shunt d. Series – Parallel

17) To Increase the range of Ammeter, resistance to be added in_____ ( )
a. Series b. Parallel
c. Series – Parallel d. None

18) Relay contact resistance is measured with_____meter ( )
a. Multi meter b. Earth Tester
c. Megger d. Micro Ohm meter

19) Micro Ohm Meter will have_____No. of probes ( )
a. 1 b. 2 c. 3 d. 4

20) For working of ELD_____supply has to be connected to the main terminal ( )
a. 24v DC b. 110v DC
c. 110v AC d. 24v AC

21) Resistance can be measured with_____ ( )
a. Earth Tester b. Megger
c. Micro Ohm meter d. All

22) Internal source is compulsory for_____meter ( )
a. Analog Ammeter b. Analog Volt meter
c. Ohm meter d. None

23) What happens to the circuit when volt meter is connected in series ( )
a. Fuse Blows b. Nothing will happen
c. Current becomes zero d. Voltage becomes zero

ANSWERS KEY

1	2	3	4	5	6	7	8	9	10
d	c	b	a	a	c	a	d	b	a
11	12	13	14	15	16	17	18	19	20
b	a	b	a	d	a	b	d	D	c
21	22	23							
d	c	c							

POWER EQUIPMENTS, CELLS, BATTERY & IPS

1) Inverter gives_____ ( )
   (a) AC output (b) DC output
   (c) Impedance matching (d) None

2) The specific gravity of charged cell is____ ( )
   (a) 1180 (b) 1190 (c) 1240 (d) 1220

3) In____mode charging, O/P of charger is slightly more than the cell voltage. ( )
   (a) Initial (b Boost (c) Float (d) trickle

4) Maximum permissible load on 200AH cell is_____ ( )
   (a) 20A (b) 12A (c) 10A (d) 24A

5) Trickle charging is given to cells which are in_____condition. ( )
   (a) discharged (b) charged (c) idle (d) dead

6) Maximum permissible charging current for 200 AH battery is ( )
   (a) 10 A (b) 20 A (c) 2 A (d) No maximum

7) End point voltage of the lead acid cell is_____ ( )
   (a) 1.85 V (b) 1.9V (c) 2.0V (d) 2.2V

8) In Boost charging, terminal voltage of cell is set to_____volt/cell ( )
   (a) 2.2V (b) 2.3V (c) 2.4V (d) 2.7V

9) In float charging, terminal voltage of cell is set to_____volt/cell ( )
   (a) 2.15V (b) 2.0V (c) 2.4V (d) 2.7V

10) In initial charging terminal voltage of cell is set to_____volt/cell ( )
   (a) 2.25 V (b) 2.3V (c) 2.4V (d) 2.7V

11) Output of SMR is_____ ( )
   (a) 110v AC (b) 110v DC (c) 230vAC (d) 230v DC

12) Input of SMR is_____ ( )
   (a) 110v AC (b) 110v DC (c) 230vAC (d) 230v DC

13) Inverter converts _____ ( )
   (a) AC to AC (b) AC to DC (c) DC to AC (d) DC to DC

14) DC to DC converter converts ___ ( )
   (a) AC to AC (b) AC to DC (c) DC to AC (d) DC to DC

15) Indication that appears when SMR switches from Boost mode to Float mode is ( )
   (a) system shut down (b) stop DG set
   (c) call S & T staff (d) emergency start DG set

16) Electrolyte level should be_____above the plate level ( )
   (a) 12mm -15mm (b) 6 mm – 8 mm
   (c) up to brim (d) Just above the plates

17) In IPS system inverters are configured with_____standby ( )
(a) cold (b) warm (c) hot (d) none

18) In IPS system TFRs are fed through _____ ( )
(a) DC to DC converters (b) Inverters
(c) SMRs (d) CVT

19) Capacity of cell is measured in ( )
(a) AC (b) AH (c) DC (d) None

20) Specific gravity of charged cell is _____ ( )
(a) 1200-1220 (b) 1180-1190 (c) 1280 -1300 (d) None

21) Specific gravity of discharged cell is _____ ( )
(a) 1200 (b) 1180 (c) 1280 (d) None

22) Specific gravity is measured with _____ ( )
(a) Voltmeter (b) Megger (c) Hydrometer (d) None

23) Voltage of charged cell is _____ ( )
(a) 2.1 V (b) 1.85 V (c) 1.2 V (d) None

24) Voltage of discharged cells is _____ ( )
(a) 2.1 (b) 1.85 V (c) 2.2 V (d) None

25) Resistance of earth value connected to IPS shall not exceed ( )
(a) 10 Ohms (b) 1 Ohm (c) zero Ohms (d) None

26) Electrolyte solution in a secondary LA cell is ( )
(a) Sulphuric Acid
(b) Sulphuric Acid and Battery grade Distilled water
(c) Battery grade Distilled water
(d) None of the above

27) Purpose of IPS is to ( )
(a) Integrate supply required for signaling (b) avoid blank signal
(c) achieve redundancy in power supply for signaling (d) All the above

28) At 70% DOD of Battery, The output of_____is cut off ( )
(a) Inverter (b) DC-DC converters
(c) Status Monitoring Panel (d) CVT

29) In IPS when Battery voltage falls below 98V DC, DC supply is cut off to____ ( )
(a) ACDP (b) DCDP
(c) a & b (d) None of the above

30) Capacity of cell depends upon ( )
(a) No. of plates inside the cell (b) Thickness of plates inside the cell
(c) Area of plates inside the cells (d) All the above

31) In IPS, Signal lamp circuit is normally fed by output of ( )
(a) Inverter (b) CVT for signals
(c) CVT for tracks (d) none of the above

32) Stop DG set audio-visual alarm generates whenever FRBC/SMR change over from ( )
(a) Float mode to Boost mode (b) Boost mode to Float mode
(c) Both the above (d) None of the above

33) Output of CVT is_____ ( )
(a) 110 V AC (b) 230 V AC (c) 110 V DC (d) None

34) Internal resistance of a secondary cell shall not be more than ( )
a) 2 Ohms b) 0.5 Ohms c) 20 Ohms d) None

35) Codal life of a secondary cell is ( )
a) 2 years b) 4 years c) 8 years d) None

36) Efficiency of a secondary cell can be expressed in ( )
a) Current b) Volt c) Watt Hour d) AH or V or WH efficiency

37) Earth resistance permitted for IPS is ( )
a) 2 Ohms b) 0.5 Ohms c) 20 Ohms d) None

38) Which of the following is NOT associated with IPS ( )
a) CSU b) LVDS c) SMP d) SSD

39) Inverters in IPS are connected in ( )
a) Warm standby mode b) Hot standby mode
c) Both d) None

40) Auto/Manual change over switch in IPS shall normally be placed in _ Position( )
a) Inverter 1 b) Inverter 2 c) CVT d) None

41) Current is absorbed in the cell from the charging circuit, and the direction of the current in the cell is_____ ( )
a) From positive plate to negative plate b) From negative plate to positive plate
c) Can be any direction d) None

42) When a cell is on load, the current is given out by the cell ( )
a) From positive plate to negative plate b) From negative plate to positive plate
c) Can be any direction d) None

43) Direction of current within the cell when the cell is discharging is ( )
a) From positive plate to negative plate b) From negative plate to positive plate
c) Can be any direction d) None

44) Battery charger shall be suitable for satisfactory operation with the Input Voltage range of ( )
a) 220V to 270V AC b) 230 V AC
c) 160V to 270V AC d) 110 V AC

45) In IRS 86-2000 chargers, the float voltage can be adjustable between ( )

a) 2.2 V to 2.7 V per cell
b) 2.12 to 2.3 V per cell
c) 2.2 V per cell
d) 2.4 V per cell

46) In IRS 86-2000 chargers, if the current drawn by the battery is more than _____ percent of the set charging current, then the charger automatically switch to boost mode of operation. ( )

a) 8 to 12 percent b) 3 to 5 percent c) 20 to 25 percent d) 50 percent

47) When the current drawn by the battery is less than_____ percent of the set charging current and the voltage across the battery terminals is 2.4V per cell, the charger is automatically switched back to the FLOAT mode ( )

a) 8 to 12 percent b) 3 to 5 percent c) 20 to 25 percent d) 50 percent

48) Power handling capacity of Normal Ferro Resonant Type Automatic Ac Voltage Regulator (IRS: S-74/89 with Amd.6) ( )

a) 5 KVA to 10KVA
b) 0.5 KVA to 10KVA
c) 10KVA
d) 0.5 KVA

49) Which of the following with respect to Ferro Resonant AVR is wrong ( )

a) Complete automatic and continuous regulation
b) Immune to short circuit at O/P
c) Self-protection against over load.
d) O/P voltage is not frequency dependent

50) Which of the following is not associated with Ferro Resonant AVR ( )

a) Primary winding
b) Secondary winding
c) Split field winding
d) Compensating winding

ANSWERS KEY

1	2	3	4	5	6	7	8	9	10
a	d	c	a	c	b	a	c	a	d
11	12	13	14	15	16	17	18	19	20
b	c	c	d	b	a	c	d	b	a
21	22	23	24	25	26	27	28	29	30
b	c	a	b	b	b	d	a	c	d
31	32	33	34	35	36	37	38	39	40
a	b	b	a	b	d	b	d	b	d
41	42	43	44	45	46	47	48	49	50
a	a	b	c	b	a	b	b	d	c

BASIC ELECTRICITY AND MAGNETISM

1) Resultant resistance will increase when resistors are connected in ( )
   (a) Series (b) parallel (c) series and parallel (d) all

2) Resultant resistance will decrease when resistors are connected in ( )
   (a) Series (b) parallel (c) series and parallel (d) all

3) Condensers of same capacity are connected in parallel, the resultant value ( )
   (a) becomes double (b) become half
   (c) will not change (d) become zero

4) Condensers of same capacity are connected in series, the resultant value ( )
   (a) becomes double (b) become half
   (c) will not change (d) become zero

5) The unit for capacitance is_____ ( )
   (a) Volts (b) Newton (c) Coulomb (d) Farads

6) 50 Ω & 50 Ω resistors are connected in series the resultant Resistance is ( )
   (a) 75 Ω (b) 50 Ω (c) 100 Ω (d) 25 Ω

7) 50 Ω & 50 Ω resistors are connected in parallel the resultant Resistance is ( )
   (a) 50 Ω (b) 100 Ω (c) 25 Ω (d) 150 Ω

8) To measure current in a circuit, Ammeter is connected in_____ ( )
   (a) Parallel (b) Series (c) Series & Parallel (d) None

9) To measure voltage in a circuit, Voltmeter is connected in_____ ( )
   (a) Parallel (b) Series (c) Series & Parallel (d) None

10) To measure current in a circuit, circuit need not be disconnected if _____ is used ( )
   (a) Ammeter (b) Multimeter (c) Clip-on meter (d) None

11) _____Converts AC to DC. ( )
   (a) Oscillator (b) Filter (c) Rectifier (d) Inverter

12) In bridge rectifier_____no. of diodes are used. ( )
   (a) 1 (b) 2 (c) 3 (d) 4

13) _____will not change in Transformer ( )
   (a) Voltage (b) Current (c) Resistance (d) Frequency

14) In step up transformer the voltage on primary side is_____the voltage on secondary side ( )
   (a) More than (b) Less than (c) Equal to (d) None

15) In step down transformer the voltage on primary side is_____the voltage on secondary side ( )

(a) More than (b) Less than (c) Equal to (d) None

16) In 1:1 transformer the voltage on primary side is _____the voltage on secondary side ( )

(a) More than (b) Less than (c) Equal to (d) None

17) Ohm's Law is_____ ( )

(a) V = I R (b) I = V / R (c) R = V / I (d) All

18) In an electrical circuit the Power =_____ ( )

(a) V x I (b) I^2 R (c) V^2 / R (d) All

19) In an electrical circuit at constant resistance, if Voltage is increased, Current ( )

(a) decreases (b) increases (c) remains constant (d) None

20) In an electrical circuit at constant resistance, if Voltage is decreased Current ( )

(a) decreases (b) increases (c) remains constant (d) None

21) In an electrical circuit at constant Voltage, if Resistance is decreased Current( )

(a) decreases (b) increases (c) remains constant (d) None

22) In an electrical circuit at constant Voltage, if Resistance is increased Current ( )

(a) decreases (b) increases (c) remains constant (d) None

23) The unit for Power is ( )

(a) Newton (b) Watts (c) Joules (d) Hertz

24) The unit for frequency is ( )

(a) Newton (b) Watts (c) Joules (d) Hertz

25) Transformer works on_____principle ( )

(a) Mutual induction (b) Electrostatic induction

(c) Self induction (d) None

26) In a transformer there will be_____between AC voltages of primary coil and secondary coil ( )

(a) decrease in frequency (b) increase in frequency

(c) no change in frequency (d) None

27) In every magnet_____number of poles present ( )

(a) 3 (b) 2 (c) 4 (d) 6

28) When North pole of a magnet brought nearer to South pole of other magnet ( )

(a) Repels (b) Attracts

(c) Neither attracts nor repels (d) None

29) When South pole of a magnet brought nearer to South pole of other magnet ( )
(a) Repels (b) Attracts
(c) Neither attracts nor repels (d) None

30) An electrical generator converts ( )
(a) Electrical energy into Mechanical energy
(b) Mechanical energy into Electrical energy
(c) Electrical energy into Sound energy
(d) Sound energy into Electrical energy

31) In a DC generator_____occurs ( )
(a) copper losses (b) Magnetic losses
(c) Mechanical losses (d) All the above

32) According to Faraday's Laws of Electromagnetic induction, whenever a conductor cuts magnetic flux_____is produced ( )
(a) induced e.m.f. (b) Heat (c) Light (d) None

33) Electrical energy may be converted into_____energy ( )
(a) Mechanical (b) Sound (c) Chemical (d) All

34) In a stabilizer, if input voltage increases within the range the output voltage ( )
(a) increases (b) decreases (c) remains constant (d) none

35) In a stabilizer, if input voltage decreases within the range the output voltage ( )
(a) increases (b) decreases (c) remains constant (d) none

36) What will be the current in a QN1 relay of coil resistance 400 ohms is operated with 24 V DC ( )
(a) 60 mA (b) 50 mA (c) 40 mA (d) 30 Ma

37) What will be the current in a QNA1 relay of coil resistance 208 ohms is operated with 24 V DC ( )
(a) 80 mA (b) 90 mA (c) 100 mA (d) 115 mA

38) _____is used to protect electrical/electronic equipments from high currents ( )
(a) Fuse (b) Resistor (c) Inductor (d) None

39) The Power factor is ( )
(a) the ratio of true(working) power to apparent power
(b) the ratio of apparent power to true power
(c) product of true power and apparent power
(d) None

40) Capacity of the transformer is measured in_____ ( )
(a) Volts (b) Amperes (c) VA (d) hertz

41) _____shall be given to transformer ( )

a) DC Voltage only (b) AC Voltage only

(c) Either AC or DC voltages (d) None

42) The transformer will not work for DC voltages due to ( )

(a) constant voltage (b) constant current

(c) constant resistance (d) constant flux

43) CVT / AVR works in_____region ( )

(a) active (b) magnetic saturation (c) passive (d) cut-off

44) CVT means ( )

(a) Constant voltage transformer (b) current voltage transformer

(c) Continuous variable transformer (d) None

45) In a bridge rectifier, how many diodes will conduct in a half cycle ( )

(a) 1 diode (b) 2 diodes (c) 3 diodes (d) 4 diodes

46) Resistance x Capacitance = ( )

(a) Charging time of capacitor (b) Discharging time of capacitor

(c) Both a & b (d) None

47) Zener diode gives_____voltage ( )

(a) regulated (b) varying voltage (c) both a & b (d) None

48) Zener diode works in_____region ( )

a) active (b) passive (c) cut-off (d) reverse breakdown

49) converts DC voltage to AC voltage ( )

(a) Rectifier (b) Inverter (c) Amplifier (d) Transformer

50) An Opto coupler converts_____ ( )

(a) Electrical energy to light energy & vice versa (b) Electrical energy to sound

(c) Electrical energy to mechanical energy (d) Electrical energy to chemical energy

51) The main application of the Opto coupler is to_____ ( )

(a) Isolate two circuits (b) combine two circuits

(c) Combine three circuits (d) combine four circuits

52) Capacitor stores_____energy ( )

(a) mechanical (b) electrical (c) light (d) chemical

ANSWERS KEY

1	2	3	4	5	6	7	8	9	10
a	b	a	b	d	c	c	b	a	c
11	12	13	14	15	16	17	18	19	20
c	d	d	b	a	c	d	d	b	a
21	22	23	24	25	26	27	28	29	30
b	a	b	d	a	c	b	b	a	b
31	32	33	34	35	36	37	38	39	40
d	a	d	c	c	a	d	a	a	c
41	42	43	44	45	46	47	48	49	50
b	d	b	a	b	c	a	d	b	a
51	52								
a	b								

SAFETY IN TRAIN OPERATION, S O D & D M

1) Maximum height above rail level of any part of signal gear provided between rails of track is____ ( )

(a) 64 mm (b) 2135 mm (c) 1676 mm (d) none

2) In all new yards, we must follow ( )

(a) Existing works (b) New works (c) both (d) none

3) Maximum height of signaling gear above rail level for a width of 1600 mm in BG inside of the track_____ ( )

(a) 64 mm (b) 2135 mm (c) 6250 mm (d) none

4) As per Revised Schedule of dimensions, New works includes ( )

(a) Additions of new lines / structure (b) gauge conversion

(c) Doubling (d) all

5) Minimum horizontal distance of a Point machine in BG from CLOT ( )

(a) 64 mm (b) 2135 mm (c) 1600 mm (d) 2360 mm

6) Red aspect of signal should be at a height of_____from above the rail level. ( )

(a) 3355 mm (b) 3650 mm (c) 3555 mm (d) 4650 mm

7) Minimum horizontal distance of a Location Box in BG from CLOT ( )

(a) 1905 mm (b) 2135 mm (c) 1600 mm (d) 2360 mm

8) Minimum horizontal distance of a TLJB in BG from CLOT ( )

(a) 1905 mm (b) 2135 mm (c) 1600 mm (d) 2360 mm

9) The nearest part of the signal post from the centre of track for a signal with horizontal route ( )

(a) 2.135m (b) 2.84 m (c) 2.36m (d) 2.8m

10) Minimum clearance between toe of open switch and stock rail in new works ( )

(a) 95 mm (b) 115 mm (c) 112 mm (d) 118 mm

11) The minimum clearance required from center of track to the signal post is____( )

(a) 1600 mm (b) 2135 mm (c) 1905 mm (d) 2360 mm

12) When point is under disconnection, stop signal governing the point_____( )

(a) need not kept at ON (b) need kept at ON

(c) optional (d) not compulsory

13) The distance from nearest wire transmission to the CLOT in BG is_____( )

(a) 1.9 m (b) 2.5 m (c) 3 m (d) 6m

14) Minimum horizontal distance of a Gate post in BG from CLOT ( )

(a) 4 m (b) 5 m (c) 6 m (d) 3 m

15) Minimum horizontal distance of a Gate lodge in BG from CLOT ( )

(a) 4 m (b) 5 m (c) 6 m (d) 3 m

16) Minimum horizontal distance of a Gate lodge in BG from edge of road ( )

(a) 4 m (b) 5 m (c) 6 m (d) 8 m

17) Minimum horizontal distance of a Height gauge from CLOT ( )

(a) 4 m (b) 5 m (c) 6 m (d) 8 m

18) Normal implantation of OHE mast (single OHE) from CLOT ( )

(a) 2.5 m (b) 2.8 m (c) 3 m (d) 2.36 m

19) Normal implantation of OHE mast (more than one OHE) from CLOT ( )

(a) 2.5 m (b) 2.8 m (c) 3 m (d) 2.36 m

20) Min. horizontal distance of any telegraph post measured from the centre of & at right angles to the nearest track for New works or alterations to existing works ( )

(a) The height of the post plus 2135 mm

(b) The height of the post plus 2360 mm

(c) The height of the post plus 3135mm

(d) The height of the post plus 2560 mm

21) Max. gradient in station yards for new works ( )

(a) 1 in 100 (b) 1 in 260 (c) 1 in 400 (d) 1 in 1200

22) Maintainer shall advise the station master on duty in writing on_____and obtain the signature before Group-B work is started. ( )

(a) written memo (b) Consent memo

(c) Disconnection memo (d) none

23) For replacing Signal LED unit_____Memo is required. ( )

(a) written memo (b) Consent memo

(c) Disconnection memo (d) none

24) For testing of point gauge_____Memo is required for. ( )

(a) written memo (b) Consent memo

(c) Disconnection memo (d) none

25) Point adjustment comes under_____works. ( )

(a) written memo (b) Consent memo

(c) Disconnection memo (d) none

26) _____Memo is required for opening of block instrument for visual inspection ( )

(a) written memo (b) Disconnection memo

(c) Consent memo (d) none

27) EKT maintenance comes under_____works ( )

(a) Group-A (b) Group-B

(c) Group-C (d) Disconnection memo

28) Adjustment of Regulating resistance comes under ( )

(a) Group-A (b) Group-B

(c) Group-C (d) Disconnection memo

29) Divisional disaster management plan is signed by ( )

(a) GM (b) AGM (c) CSO (d) DRM/ADRM

30) Divisional disaster management plan is reviewed and updated in_____ ( )

(a) January (b) June (c) July (d) December

ANSWERS KEY

1	2	3	4	5	6	7	8	9	10
a	b	a	d	c	b	d	a	b	c
11	12	13	14	15	16	17	18	19	20
d	b	c	b	c	c	d	b	c	b
21	22	23	24	25	26	27	28	29	30
d	b	c	b	c	c	c	c	d	a

BASIC CONCEPTS OF SIGNALLING

1) Position light type CLS shunt signal at ON position displays_____ ( )
   (a) Two lights horizontally (b) Two lights inclined at 45 degrees to the left.
   (c) Two lights vertically (d) No lights

2) Minimum Visibility of main line starter in MACLS is ( )
   (a) 400 mtrs (b) 300 mtrs (c) 200 mtrs (d) None

3) Minimum distance required between Distant & Home signal in MACLS is___( )
   a. 1400 mtrs b. 1000 mtrs c. 1200 mtrs d. None

4) Block Section Limit Board Provided on_____and demarcates_____ ( )
   a. Single line & Block section b. Double line & Station limits
   c. Single line & Station section d. Double line & Block section

5) 'P' marker is provided on_____ ( )
   a. All distant signals b. All distant signals in CLS area
   c. All permissive signals d. None

6) A gate cum distant signal will have_____number of aspects. ( )
   a. 2 b. 3 c. 4 d. none

7) Signal overlap in multiple aspect signaling is ( )
   a.180 mtrs b. 120 mtrs c. 400 mtrs d. 1000 mtrs

8) Block overlap in multiple aspect signaling is ( )
   a.180 mtrs b. 120 mtrs c. 400 mtrs d. 1000 mtrs

9) Gate stop signal in MACLS is provided at_____mtrs from the LC gate. ( )
   a. 180 mtrs b. 400 mtrs c. 120 mtrs d. None

10) Speed of trains in Std-I (R) interlocking is_____ ( )
   a. 50 kmph b. 110 kmph c. 140 kmph d. 160 kmph

11) Speed of trains in Std-II (R) interlocking is_____ ( )
   a. 50 kmph b. 110 kmph c. 140 kmph d. 160 kmph

12) Speed of trains in Std-III(R) interlocking is_____ ( )
   a. 50 kmph b. 110 kmph c. 140 kmph d. 160 kmph

13) Speed of trains in Std-IV (R) interlocking is_____ ( )
   a.50 kmph b. 120 kmph c. 140 kmph d. 160 kmph

14) Calling on signal is provided_____ ( )
   a. Below the distant signal b. below the home signal
   c. Below the last stop signal d. Below the shunt signal

15) The normal aspect of inner distant signal is ( )
a. Red b. Yellow c. Double yellow d. Green

16) The reception signal provided below main home signal ( )
a. Co-acting signal b. Repeating signal
c. Calling on signal d. None

17) D/signal in double distant territory displays proceed aspect then it indicates ( )
a. Run through on main line b. Run through on loop line
c Trains going to be received on main line d. a & c

18) Catch siding shall be provided where the gradient steeper than 1:80 is falling towards_____ ( )
(a) Station section (b) station siding line
(c) block section (d) All

19) The Goods warning board shall be provided at 1 Km in rear of___signal ( )
a) Station home b) Gate home c) IB signal d) none of above

20) Gate signal under absolute block system shall be provided with_____marker. ( )
a) 'G' b) 'AG' c) 'PG' d) Illuminated 'G'

21) When the shunt signal and calling on signal are provided below stop signal then Placement of signals from top_____ ( )
a) Calling on signal and then shunt signal b) shunt signal and then calling on signal
c) must not be provided d) a or b

22) A shunt signal can be provided below_____ ( )
a) FSS b) Starters c) Advance starter d) b & c

23) Calling-on signal can be provided below_____ ( )
a) FSS b) Starters c) Advance starter d) a & b

24) R marker is provided for_____signal ( )
a) Repeating b) Co-acting c) Routing home d) second distant

25) _____signal is provided if the visibility of signal is obstructed due to ROB ( )
a) Repeating b) Routing c) Co-acting d) none

26) _____marker is provided for the sidings taken off from block section ( )
a) P b) S c) R d) C

27) C marker is painted with_____ ( )
a) Letter C painted in white on black circular disc
b) Letter C painted in black on white circular disc

c) Letter C painted in black on yellow circular disc
d) Letter C painted in yellow on black circular disc

28) P marker is painted with_____ ( )
a) Letter P painted in white on black circular disc
b) Letter P painted in yellow on black circular disc
c) Letter P painted in black on yellow circular disc
d) Letter P painted in black on white circular disc

29) S marker board is painted with_____ ( )
a) Letter S painted in white on black circular disc
b) Letter S painted in yellow on black circular disc
c) Letter S painted in black on yellow circular disc
d) Letter S painted in black on white circular disc

30) G marker board is painted with_____ ( )
a) Letter G painted in black on yellow circular disc
b) Letter G painted in yellow on black circular disc
c) Letter G painted in black on white circular disc
d) Letter G painted in white on black circular disc

31) Second distant signal post is painted with_____ ( )
a) alternate black and yellow bands b) alternate yellow and white bands
c) alternate black and white bands d) Silver white

32) Inner distant signal post is painted with_____ ( )
a) alternate black and yellow bands b) alternate yellow and white bands
c) alternate black and white bands d) Silver white

33) Signal warning board indicates to the driver that he is approaching a_____( )
a) Permissive signal b) Stop signal
c) Goods siding line d) 2nd distant signal

34) Signal warning board need not be provided in_____territory ( )
a) Double distant signal b) Single distant signal
c) Auto signaling d) none

35) Signal warning board is provided at a distance of 1.4 km from_____ ( )
a) Double distant signal b) Single distant signal
c) Stop signal d) Routing home

36) In single Distant signal territory, the distant signal will display attention aspect for a train_____ ( )
a) admitted on loop line b) admitted on main line
c) run through via loop line d) all

37) In single Distant signal territory, the distant signal will display proceed aspect for a train_____ ( )

a) admitted on loop line b) admitted on main line

c) run through via loop line d) run through via main line

38) The normal aspect of ASS is_____aspect ( )

a) caution b) proceed c) attention d) none

39) Semi automatic stop signal is provided with_____ ( )

a) Illuminated A marker b) Illuminated AG marker

c) Illuminated S marker d) none

40) ASS interlocked with points and LC gate is provided with illuminated --- marker( )

a) A b) AG c) A and AG d) none

41) Semi automatic stop signal will work as_____ ( )

a) automatic stop signal b) manual stop signal

c) a and b d) none

42) Semi automatic stop signal is operated by_____knob/lever ( )

a) queen b) king c) commander d) none

43) Authority to pass Automatic stop signal at ON position is_____ ( )

a) 2 min by day,1 min by night b) 1 min by day,1 min by night

c) 1 min by day,2 min by night d) 2 min by day,2 min by night

44) Automatic stop signal can be_____aspect ( )

a) 2 only b) 3 only c) 4 only d) 3 or 4

45) Aspect of ASS will depend upon_____ ( )

a) Aspect of signal ahead b) Condition of track ckt ahead

c) position of train ahead d) all

46) 3 aspect ASS will display__ aspect when 1 signaling section and overlap is clear( )

a) ON b) Caution c) Proceed d) Attention

47) 3 aspect ASS will display __ aspect when 2 signaling section and overlap is clear( )

a) Proceed b) Attention c) Caution d) ON

48) 4 aspect ASS will display __ aspect when 1 signaling section and overlap is clear( )

a) Caution b) Attention c) Proceed d) ON

49) 4 aspect ASS will display__ aspect when 2 signaling section and overlap is clear( )

a) Caution b) Attention c) Proceed d) ON

50) 4 aspect ASS will display __ aspect when 3 signaling section and overlap is clear( )

a) Caution b) Attention c) Proceed d) ON

51) 3 aspect ASS will display caution aspect when_____ ( )
a) 1 signaling section & overlap is clear b) 2 signaling sections & overlap is clear
c) 3 signaling sections & overlap is clear d) none

52) 3 aspect ASS will display proceed aspect when_____ ( )
a) 1 signaling section & overlap is clear b) 2 signaling sections & overlap is clear
c) 3 signaling sections & overlap is clear d) none

53) 4 aspect ASS will display caution aspect when_____ ( )
a) 1 signaling section & overlap is clear b) 2 signaling sections & overlap is clear
c) 3 signaling sections & overlap is clear d) none

54) 4 aspect ASS will display Attention aspect when_____ ( )
a) 1 signaling section & overlap is clear b) 2 signaling sections & overlap is clear
c) 3 signaling sections & overlap is clear d) none

55) 4 aspect ASS will display proceed aspect when_____ ( )
a) 1 signaling section & overlap is clear b) 2 signaling sections & overlap is clear
c) 3 signaling sections & overlap is clear d) none

56) Automatic signaling system can be provided on_____ ( )
a) S/L b) D/L c) Quadruple line d) all

57) Direction of traffic must be established for working of trains on _____ system ( )
a) RE S/L automatic b) RE D/L automatic
c) Non-RE S/L automatic d) a and c

58) Direction of traffic need not be established for working of trains on __ system ( )
a) RE S/L automatic b) RE D/L automatic
c) Non-RE S/L automatic d) a and c

59) Automatic signaling system ( )
a) Reduces the headway between trains b) Increases the section capacity
c) Safety depends upon the alertness of driver d) all

60) Minimum Overlap distance beyond automatic stop signal is ( )
a) 120 mt b) 180 mt c) 400 mt d) none

61) Relation between number of aspects of signal and overlap is ( )
a) No relation b) Directly proportional c) Inversely proportional d) none

62) Automatic stop signal provided with illuminated “A” and “AG” marker will display illuminated “A” marker when ( )
a) Points are detected b) Closed position of LC is detected
c) a and b d) none

63) Automatic stop signal provided with illuminated “A” and “AG” marker will display illuminated “AG” marker when ( )
a) Points are detected b) LC gate is defective
c) a and b d) none

64) Automatic stop signal provided with illuminated “A” & “AG” marker can display( )
a) either “A” or “AG” marker b) both markers at a time
c) question is vague d) none

65) Automatic stop signal working either as fully automatic signal or manual signal is provided with_____marker ( )
a) Illuminated “A” b) Illuminated “M” c) Illuminated “A” & “M” d) none

66) Braking distance will depend upon ( )
a) Speed of the train b) Velocity of wind c) Brake power availability d) all

67) Braking distance will depend upon ( )
a) Gradient b) Rollability of wheels c) State of rails (wet/dry) d) all

68) Cross bars on signal unit indicates ( )
a) signal not in use b) signal will work during day time only
c) signal will work during night time only d) defective signal

69) Gate signals in automatic section is provided with ( )
a) “G” marker b) “A” marker c) “G” marker & illuminated “A” marker d) a and b

70) On Indian railways there are_____systems of train working ( )
a) 4 b) 5 c) 6 d) 7

71) Absolute block working system consists of _classes of station ( )
a) 2 b) 3 c) 4 d) 6

72) Portion of track situated between outermost signals of the station is called as ( )
a) block limits b) station limits c) shunting limits d) Clear standing room limit

73) Point and trap indicators are ( )
a) Signals b) Not signals c) fitted to and work with points d) none

74) Entry of trains into block section is controlled by ( )
a) Home signal b) Advance starter
c) Shunt signal d) Calling-On signal

75) Intermediate block signal is substitute of class_____station ( )
a) A b) B c) C d) D

76) Terminal stations is also called as_____station ( )
a) Class A b) Class B c) Class C d) Special class

77) Approved special instructions are prescribed and approved by ( )
a) CSTE b) COM c) CRS d) AGM

78) Adequate distance is the distance required for ( )
a) Ensuring safety b) Stabling of vehicles
c) Shunting of vehicles d) none

79) Permission given by block station in advance to block station in rear for train to leave is called as ( )
a) Line block b) Line clear c) Block back d) Block forward

80) As per SEM part -1,correction slip no 18 calling initiation time is_____sec ( )
a) 60 b) 90 c) 120 d) 240

81) As per SEM part -1, correction slip no 18 calling on signal below starter can be initiated ( )
a) Immediately after berthing track is occupied
b) 60 sec after berthing track is occupied
c) 120 sec after berthing track is occupied
d) Immediately without berthing track is occupied

82) Calling on signal will not detect points in the_____ ( )
a) Route b) Isolation c) overlap d) none

83) Movement of trains into auto signaling section is controlled by_____signal ( )
a) Calling on b) Shunt c) permissive d) Stop

84) Automatic signaling arrangement facilitates to_____line capacity ( )
a) Hamper b) Increase c) Reduce d) none

85) Once the signal has been taken OFF, it must not be possible to alter the points unless the_____has been put back to ON position. ( )
a) Point b) Signal c) Lock bar d) none

86) It shall not be possible to take OFF at the same time, any two fixed signals which can lead to_____movements ( )
a) Conflicting b) Parallel c) Flexible d) To and fro

87) _____signal is a Pre-warning signal ( )
a) Shunt b) Calling-on c) Distant d) none

88) Second distant signal is provided at a distance of_____km from stop signal. ( )
a) 1 b) 1.2 c) 1.4 d) 2

89) Advantages of Color light signal is ( )
a) Day and night aspects are same b) Signals are placed at driver's eye level
c) Long range of operation d) all

90) Proceed and be prepared to stop at next stop signal is indicated by_____aspect of signal ( )
a) ON b) Caution c) Attention d) proceed

91) Proceed and be prepared to pass next stop signal at restricted speed is indicated by_____aspect of signal ( )
a) ON b) Caution c) Attention d) proceed

92) The Distant signal shall display only_____aspect where "Distant" and "Inner Distant" signals are provided ( )
a) Attention or Proceed b) Caution only c) Proceed only d) none

93) Intermediate starter signal is provided between ( )
a) starter and home b) starter and routing home
c) starter and advanced starter d) loop line starter and main line starter

94) _____is provided at stations where Uninterrupted shunting operations is required in both directions (to and fro) ( )
a) Position light type shunt signal b) Calling on
c) Routing starter d) Shunting permitted indicator

95) BSLB is provided to distinguish the limit of ( )
a) station limits b) block section c) station section d) none

96) Block overlap in class C station provided color light signal is ( )
a) 400 mt b) 180 mt c) 120 mt d) none

97) Classification of LC gate is made after conducting level crossing census once in( )
a) 2 years b) 3 years c) 4 years d) 5 years

98) LC gate census will be done by supervisors of ( )
a) Engg and S & T b) Traffic and S & T
c) S & T, Engg and Traffic d) S & T and operating

99) Train vehicle units per day is calculated based on ( )
a) no. of passengers x no. of road vehicle b) no. of trains x no. of pedestrians
c) no. of trains x no. of passengers d) no. of trains x no. of road vehicle

100) Interlocking of LC gate is not required for ( )
a) Special class b) A class c) B class d) D class

101) Interlocking of LC gate is required for ( )
a) Special class b) A class c) B class d) all

102) Approach Warning to be provided at_____ ( )
a) Special class b) A class c) B class d) all

103) LC gate in automatic signaling section shall be ( )
a) Interlocked irrespective of classification b) Provided with approach warning
c) Approach locking d) all

104) Signal protecting LC gate in Automatic signalling section shall be provided with ( )

a) Provided with flashing light b) G Marker
c) Illuminated A marker d) b & c

105) Trap points are provided for ( )
a) Isolation purpose b) Flexibility purpose c) Parallel movements d) all

106) "S" marker is provided for out lay sidings taken off from ( )
a) station section b) block section c) Pit/washing line d) none

107) Passenger line must be isolated from goods /siding lines ( )
a) if the speed is more than 50 kmph b) if the speed is more than 75 kmph
c) irrespective of the speed d) none

108) Section capacity can be increased by provision of ( )
a) MA signaling system b) Simultaneous reception
c) Second distant signal d) all

109) Provision of Catch/Slip siding is permitted by ( )
a) CSTE b) CRS c) COM d) CE

110) Minimum signals required at class C station is ( )
a) Distant, home and starter b) Distant and home
c) Home and starter d) only home

ANSWERS KEY

1	2	3	4	5	6	7	8	9	10
a	c	b	d	b	c	b	a	a	a
11	12	13	14	15	16	17	18	19	20
b	c	d	b	b	c	a	a	d	a
21	22	23	24	25	26	27	28	29	30
a	d	d	a	c	b	b	d	b	a
31	32	33	34	35	36	37	38	39	40
a	d	b	a	c	d	d	b	a	c
41	42	43	44	45	46	47	48	49	50
c	b	c	d	d	b	a	a	b	c
51	52	53	54	55	56	57	58	59	60
a	b	a	b	c	d	d	b	d	a
61	62	63	64	65	66	67	68	69	70
c	c	c	a	a	d	d	a	c	c
71	72	73	74	75	76	77	78	79	80
B	b	c	b	c	d	c	a	b	a
81	82	83	84	85	86	87	88	89	90
A	c	d	b	b	a	c	d	d	b
91	92	93	94	95	96	97	98	99	100
C	a	c	d	b	a	b	c	d	d
101	102	103	104	105	106	107	108	109	110
D	d	d	d	a	b	c	d	b	b

EKT & SLOT

1) EKT is provided with_____number of armatures ( )
a. one b. two c. three d. four

2) Minimum working voltage of EKT is_____ ( )
a. 3.75 DC volt b. 18 volt DC c. 24 volt DC d. 12 volt DC

3) Resistance of the EKT coil is_____ ( )
a) 12.5 Ohms b) 600 Ohms c) 150 Ohms d) 220 Ohms

4) Incorrect part related with EKT is ( )
a. Quick return gear b) electromagnet auxiliary pole
c) Electromagnet main pole d) none

5) Incorrect part related with EKT is ( )
a. Electromagnet b) operating piece c) stud d) none

6) _____numbers of brass tumblers control the movement of key ( )
a. 2 b) 3 c) 4 d) none

7) EKT transmission is provided with separate AC immunized relays in __ area ( )
a. RE area b) Non- RE area c) a and b d) none

8) Correct statement related with key transmitters is ( )
a. key can be extracted by jerk
b. key can be extracted by external force
c. key can be extracted when conditions are favorable
d. key can be extracted without conditions are favorable

9) EKT cover can be opened ( )
a. when the key is IN and locked condition b) when the key is out
c) a and b d) none

10) Incorrect statement related with key transmitters ( )
a. need not be tested periodically b) testing done only during inspection
c) must be tested periodically d) none

11) Sealing of EKT is ( )
a. compulsory b) not compulsory c) optional d) none

12) General maintenance of EKT as per SEM ( )
a. 7 days b) 15 days c) 21 days d) 30 days

13) Slotted signal is controlled by ( )
a. one agency only b) more than two agencies
c) more than three agencies d) b and c

14) Calling on signal is controlled by ( )

a. No slot b) Only calling on slot
c) Only Home signal slot d) Both calling on Slot & Home signal slot

15) Slotted signal can be taken off by ( )
a. one agency only
b. agencies which have control on the signal
c. agencies which do not have control on the signal
d. none

16) Slotting agencies must release their control only when_____ ( )
a. all conditions are favorable to take off signal
b. partial conditions are favorable to take off signal
c. conditions are not favorable to take off signal
d. none

17) Receipt of the slot is ( )
a. Compulsory for slotted signal b) not compulsory for slotted signal
c) optional d) none

18) In case of emergency signal can be put back by_____agency ( )
a. operating b) slotting c) a and b d) none

19) Dependant signal must be replaced to ON position when ( )
a. slotted signal is replaced to ON position b) slots are withdrawn
c) track circuit occupancy is proved in slot d) all

20) Slotted signal shall automatically replace to ON position when ( )
a. condition of track circuit is proved in the slot
b. condition of point circuit is proved in the slot
c. condition of level crossing is proved in the slot
d. none

21) Slot indicators are of_____ ( )
a. single type b) two types c) three types d) none

22) Different type of slot indicators are ( )
a. banner type b) disc type c) luminous type d) all

23) YSR means ( )
a. slot stick relay b) slot slow relay
c) slot shunt relay d) slot sectional relay

24) All slots normal relay is ( )
a. YSR b) YNR c) YR d) YSNR

ANSWERS KEY

1	2	3	4	5	6	7	8	9	10
b	a	a	d	d	b	a	c	b	c
11	12	13	14	15	16	17	18	19	20
a	b	d	d	b	a	a	c	d	a
21	22	23	24						
c	d	a	b						

SIGNALLING RELAYS AND CABLES

1) Normal rated working voltage of QN1 is____ ( )
   a. 12v DC b. 24v DC c. 60v DC d. 110v DC

2) Normal rated working voltage of QL1 is____ ( )
   a. 12v DC b. 24v DC c. 60v DC d. 110v DC

3) Normal rated working voltage of QB3 is____ ( )
   a. 12v DC b. 24v DC c. 60v DC d. 110v DC

4) Normal rated pick up voltage of QTA2 is____ ( )
   a. 1.4v DC b. 1.75v DC c. 2.8v DC d. 4.2v DC

5) Normal rated pick up voltage of QBAT is____ ( )
   a. 1.4v DC b. 1.75v DC c. 2.8v DC d. 4.2v DC

6) QT2 relay is a_____ ( )
   a. Heavy duty b. Track relay c. Neutral relay d. K-50 relay

7) QBCA1 relay is a_____ ( )
   a. Heavy duty b. Track relay c. Neutral relay d. K-50 relay

8) Which of the following relay has two coils for picking up and dropping ( )
   a. QBA1 b. QSPA1 c. QL1 d. QS3

9) Which of the following relay is used in push button type block instrument ( )
   a. QBA1 b. QSPA1 c. QL1 d. QS3

10) Which of the following relay is used in DAIDO block instrument ( )
   a. QBA1 b. QSPA1 c. QL1 d. QS3

11) _____ type relay is used in push button block instrument line circuit ( )
   a. QBA1 b. QB3 c. QL1 d. QN1

12) _____type relay is used in DAIDO block instrument line circuit ( )
   a. QBA1 b. QB3 c. QL1 d. QN1

13) _____type relay is not provided with residual pin ( )
   a. QBA1 b. QB3 c. QL1 d. QN1

14) For AC immunization feature in the relay_____is provided ( )
   a. copper slug b. permanent magnet
   c. magnetic shunt d. blow out magnets

15) For biasing feature in the relay____is provided ( )
   a. copper slug b. permanent magnet
   c. magnetic shunt d. blow out magnets

16) For spark quenching at heavy duty contacts in QBCA1 relay,____is provided ( )
a. copper slug b. permanent magnet
c. magnetic shunt d. blow out magnets

17) ____ohms ACI TR only to be used in RE area irrespective of any TC lengths ( )
a. 200 b. 400 c. 9 d. 4.5

18) The percentage of release for Q-series track relay is not less than____ ( )
a. 33% b. 50% c. 60 % d. 68%

19) The percentage of release for Q-series 'B' class line relay is not less than____( )
a. 33% b. 50% c. 60 % d. 68%

20) The percentage of release for Q-series 'A' class line relay is not less than____( )
a. 33% b. 50% c. 60 % d. 68%

21) Q-series relays are of_____type contacts ( )
a. dependent b. independent c. both d. none

22) The maximum number of contacts in Q-series relay is_____ ( )
a. 6 b. 8 c. 12 d. 16

23) Contact resistance of Q-series relay is_____ ( )
a. 0.20 ohms b. 0.18 ohms c. 0.05 ohms d. 1.8 ohms

24) For slow to pick up / release in QSPA1 / QSRA1 relay_____is provided ( )
a. copper slug b. permanent magnet
c. magnetic shunt d. blow out magnets

25) The maximum contacts combination available in Q-series relay is_____ ( )
a. 12F/4B b. 8F/8B c. both d. none

26) Q-series relay front & back contacts are made of_____ ( )
a. silver oxide b. silver impregnated graphite c. both d. none

27) Q-series relay arm contacts are made of_____ ( )
a. silver oxide b. silver impregnated graphite c. both d. none

28) In Q-series relay,_____contacts are movble contacts ( )
a. front b. back c. arm d. none

29) _____relay senses the current direction through relay coil ( )
a. AC immunized b. polarized c. DC biased d. none

30) ____relay is used in indication line circuits of double line block instrument ( )
a. AC immunized b. polarized c. DC biased d. none

31) Polarized relay is provided with_____type of contacts ( )
a. dependent b. independent c. both d. none

32) Polarized relay coil resistance is_____ohms ( )
a. 9 b. 77 c. 200 d. 400

33) Polarized relay is provided with_____contacts ( )
a. 2F/2B b. 2NC/2RC c. 1F/1B d. 1NC/1RC

34) Working voltage of Q-series twin neutral line relay (QNN1) is_____ ( )
a. 24v DC b. 10v DC c. 60v DC d. 110v DC

35) _____relay is not having POH date ( )
a. QN1 b. QT2 c. QTA2 d. QBAT

36) Q-series relays are provided with_____type of contacts ( )
a. metal to metal b. metal to carbon
c. carbon to carbon d. carbon to metal

37) QN1 relay coil resistance is_____ ( )
a. 200 ohms b. 400 ohms c. 9 ohms d. none

38) QNA1 relay coil resistance is_____ ( )
a. 200 ohms b. 400 ohms c. 9 ohms d. none

39) The periodical replacement of track relay is once in_____ ( )
a. 10 years b. 15 years c. 7 years d. 12 years

40) Maximum voltage for QTA2 should be up to _____under maximum B.R. ( )
a. 125% of it's normal rated P.U. value
b. 235% of it's normal rated P.U. value
c. 250% of it's normal rated P.U. value
d. 300% of it's normal rated P.U. value

41) Minimum voltage for QTA2 should be up to_____under minimum B.R. ( )
a. 125% of it's normal rated P.U. value
b. 235% of it's normal rated P.U. value
c. 250% of it's normal rated P.U. value
d. 300% of it's normal rated P.U. value

42) Maximum voltage for QBAT should be up to_____under maximum B.R. ( )
a. 125% of it's normal rated P.U. value
b. 235% of it's normal rated P.U. value
c. 250% of it's normal rated P.U. value
d. 300% of it's normal rated P.U. value

43) Minimum voltage for QBAT should be upto_____under minimum B.R. ( )

a. 122% of it's normal rated P.U. value

b. 235% of it's normal rated P.U. value

c. 250% of it's normal rated P.U. value

d. 300% of it's normal rated P.U. value

44) In non-RE area_____track relay is used ( )

a. QBAT b. QTA2 c. QT2 d. QT1

45) Normal rated working voltage of k-50 series (Siemens) relay is_____ ( )

a. 12v DC b. 24v DC c. 60v DC d. 110v DC

46) Contact resistance of K-50 relay is_____ ( )

a. 0.20 ohms b. 0.18 ohms c. 0.05 ohms d. 1.8 ohms

47) The maximum number of contacts in K-50 relay is ( )

a. 6 b. 8 c. 12 d. 16

48) The maximum contacts combination available in K-50 relay is_____ ( )

a. 5F/3B b. 4F/4B c. 6F/2B d. All

49) K-50 series relays are provided with_____type of contacts ( )

a. metal to metal b. metal to carbon

c. carbon to carbon d. carbon to metal

50) The periodical replacement of Polarized relay is once in_____ ( )

a. 10 years b. 15 years c. 7 years d. 12 years

51) Tail Cables are meggered once in a_____ ( )

a. 6 months b. 12 months c. 10 months d. 36 months

52) U/G main cables conductor insulation test will be carried out once in____ ( )

a. 6 months b. 12 months c. 10 months d. 36 months

53) Size of the conductor in 20-core signaling cable is_____sq. mm ( )

a. 1.2 b. 1.5 c. 2.25 d. 2.5

54) Cross section of 2 core aluminum Power cable is ___sq. mm ( )

a. 2.5 b. 25 c. 35 d. 1.5

55) Loop resistance of quad cable with 0.9 .mm dia_____Ω/Km ( )

a. 56 b. 28 c. 46 d. Infinite

56) Loop resistance of signaling cable (1.5sq.mm.) is_____Ω/km ( )

a. 56 b. 23 c. 10 d. 16

57) Conductor size of 2 core signaling Cable used in track circuits is _ ( )

a) 25 sq. mm. b) 2.5 sq mm. c) 1.5 sq.mm. d) 50 sq. mm.

58) For laying cable, the size of the cable trench shall be_____ ( )

a) 1m. width & 30cm. Depth b) 1m. Depth & 30cm. Width

c) 1.5.m. depth & 30cm. Width d) 60cm. Depth & 30cm.Width

59) Insulation resistance of cable must be_____MΩ / per KM ( )

a. Greater or equal to 5 b. below 5

c. Greater than 1 d. None of the above

60) 6 Quad cable is used for_____. ( )

a) Point Operation b) Signal Operation

c) Axle Counter d) Lever Lock

61) While crossing the track, Cable should be laid_____ ( )

a) in GI/ RCC Pipe b) perpendicular to track

c) At a depth of 1 Mtr d) All the above

62) Spare conductors to a minimum of_____% of the total conductors used shall be provided for in each main cable up to the farthest point zone. ( )

a) 0 % b) 10 % c) 20 % d) 50%

63) The spare conductors shall be provided on the_____layer. ( )

a) Inner most b) Middle c) Outermost d) All the above

64) As per SEM part II Para 15.12 the cable laid parallel to the track shall normally be buried at a depth of_____meters from ground level. ( )

a) 1.0 mt b) 1.5 mt c) 0.8 mt d) 1.2 mtrs

65) _____Cables shall be used in all signalling circuits. ( )

a) Screened cables only b) Un Screened cables only

c) Screened and Un screened cables d) None of the above

66) Testing the signaling cables is done with ( )

a) Multimeter b) Earth leakage detector

c) 500 V DC megger d) both b and c above

67) Each layer in an Outdoor Cable ( )

a) starts from blue conductor and ends with yellow conductor

b) starts from blue conductor and ends with grey conductor

c) starts from grey conductor and ends with yellow conductor

d) None

68) The cable shall be laid so that it is not less than one meter from the nearest edge of the mast supporting the catenary or any other live conductor provided the depth of the cable does not exceed ( )

a) 0.5 meters. b) 1 meter c) 3 mtrs d) None

69) When the cable is laid at a depth greater than 0.5 meters, a minimum distance between the cable and the nearest edge of the OHE structure must be ( )

a) 3 mtrs b) 0.3 mtrs c) 1 mtrs d)None

70) Insulation value of the cable at the time of commissioning should not be below _____MΩ/KM at 20°C ( )

a) 200. b) 10 c) 5 d) None

71) Suitable cable markers should be provided every_____along the cable route for easy identification ( )

a) 10 mtrs b) 15 mtrs c) 20 mtrs d) None

72) Outside station limits with OHE mast, the cable should generally be laid at not less than_____from the centre of the nearest track. ( )

a) 5.5 mtrs b) 55 mtrs c) 3 mtrs d) None

73) Within station limits without OHE mast, the cable should generally be laid at not less than_____from the centre of the nearest track ( )

a) 5.5 mtrs b) 55 mtrs c) 3 mtrs d) None

74) Common faults which develop on conductors of multi-core signalling cables are( )

a) Earth b) Short-Circuit c) Open -Circuit d) all the above

75) Earth fault develops in a conductor due to ( )

a) defective insulation of conductor b) Short-Circuit between conductors

c) breaking of a conductor d) None

76) _____Megger is used for testing signalling cables ( )

a) 500 V AC b) 110 V DC c) 500 V DC d) any of the above

77) _____Megger is used for testing telecom cables ( )

a) 500 V AC b) 100 V DC c) 500 V DC d) any of the above

78) Wire used for Q series relay wiring is ( )

a) 1.5 sq mm copper conductor

b) 16/0.20 mm dia. Flexible Copper wire (Multi strand)

c) 0.6 mm dia. Copper wire.

d) any of the above

79) If signaling cables are laid in the vicinity of the switching station earthing, the distance of the cable trench shall be ( )

a) atleast 5 mtrs away b) atleast 2 mtrs away

c) very near to switching station earth d) any of the above

80) Outside station limits, the cable should generally be laid at not less than _____ from the centre of the nearest track. ( )

a) 8-10 mtrs b) 55 mtrs c) 3 mtrs d) None

ANSWERS KEY

1	2	3	4	5	6	7	8	9	10
B	b	a	a	b	b	a	c	c	a
11	12	13	14	15	16	17	18	19	20
B	a	c	a	b	d	c	d	b	c
21	22	23	24	25	26	27	28	29	30
B	d	a	c	c	b	a	c	b	b
31	32	33	34	35	36	37	38	39	40
A	b	d	a	a	b	b	a	d	d
41	42	43	44	45	46	47	48	49	50
A	b	a	c	c	c	b	d	a	a
51	52	53	54	55	56	57	58	59	60
A	b	b	b	a	b	b	b	a	c
61	62	63	64	65	66	67	68	69	70
D	d	c	c	b	d	a	a	a	a
71	72	73	74	75	76	77	78	79	80
B	a	c	d	a	c	b	b	a	a

D.C. TRACK CIRCUIT

1) Q-series DC track relays must be replaced once in_____ ( )
   a. 5 years b. 7 years c. 9 years d. 12 years

2) Size of track tail / lead cable with copper conductor is_____ ( )
   a. 1.5 sq.mm b. 2.5 sq.mm c. 25 sq.mm d. 15 sq.mm

3) In a TC, the Lead cable is laid in between_____ ( )
   a. Location box to Location box b. Location box to TLJB
   c. TLJB to Track d. none

4) In a TC, the Tail cable is laid in between_____ ( )
   a. Location box to Location box b. Location box to TLJB
   c. TLJB to Track d. none

5) The variable resistance value in non-RE area DC track circuit is_____ ( )
   a. 0-15 ohms b. 0-30 ohms c. 0-25 ohms d. None

6) The main purpose of Variable Resistance in a TC is_____ ( )
   a. To protect feed end equipment b. to adjust voltage on T.R.
   c. to protect Relay d. a & b

7) The minimum Track Circuit Length should be of_____lengths ( )
   a. 1 Rail b. 2 Rail c. 4 Rail d. 5 Rail

8) Maximum permitted Rail resistance for track circuit lengths up to 700m. is____( )
   a. 0.5 ohms/Km b. 1.5 ohms/Km c. 2 ohms/Km d. None

9) Maximum permitted Rail resistance for track circuit lengths above 700m. is _ ( )
   a. 0.5 ohms/Km b. 1.5 ohms/Km c. 2 ohms/Km d. None

10) Minimum permissible ballast resistance for T.C. in station yard ( )
   a. 2 Ω /km b. 4 Ω /km c. 10 Ω /km d. none

11) Under maximum ballast resistance, the voltage on T.R. is adjusted up to____( )
   a. 125% of it's normal rated P.U. value
   b. 300% of it's normal rated P.U. value
   c. 125% of it's normal rated D.A. value
   d. 300% of it's normal rated D.A. value

12) Under minimum ballast resistance, the voltage on TR should be not less than_( )
   a. 125% of it's normal rated P.U. value
   b. 300% of it's normal rated P.U. value
   c. 125% of it's normal rated D.A. value
   d. 300% of it's normal rated D.A. value

13) If feed end & relay end voltages are equal, then the_____ ( )
   a. Ballast resistance is zero b. Rail resistance is zero
   c. Ballast resistance is infinity d. Rail resistance is infinity

14) If feed end & relay end currents are equal, then the_____ ( )
a. Ballast resistance is zero b. Rail resistance is zero
c. Ballast resistance is infinity d. Rail resistance is infinity

15) As the BR value increases, the voltage on TR_____in a TC ( )
a. increases b. decreases c. no change d. none

16) As the BR value decreases, the voltage on TR_____in a TC ( )
a. increases b. decreases c. no change d. none

17) As the RR value increases, the voltage on TR_____in a TC ( )
a. increases b. decreases c. no change d. none

18) As the RR value decreases, the voltage on TR_____in a TC ( )
a. increases b. decreases c. no change d. none

19) If TC length decreased, the BR value_____in a TC ( )
a. increases b. decreases c. no change d. none

20) If TC length increased, the BR value_____in a TC ( )
a. increases b. decreases c. no change d. none

21) If TC length increased, the RR value_____in a TC ( )
a. increases b. decreases c. no change d. none

22) If TC length decreased, the RR value_____in a TC ( )
a. increases b. decreases c. no change d. none

23) In a TC,____to be done for keeping maximum Ballast Resistance condition ( )
a. no water stagnation b. ballast clearance c. both d. none

24) In a TC,____to be done for keeping minimum Rail Resistance condition ( )
a. double bonding b. neat & tight c. both d. none

25) The minimum ballast clearance should be____in a track circuit ( )
a. 15 mm b. 25 mm c. 50 mm d. 75 mm

26) When minimum TSR value is connected across the T.C., the T.R. must drop and voltage on T.R. should be_____of it's rated drop away value ( )
a. more than 85% b. less than 85% c. less than 125% d. less than 300%

27) Maximum Broken rail protection is available in_____ ( )
a. Series track circuit b. Parallel track circuit
c. Multiple track circuit d. None

28) PSC sleeper is tested with_____before laying in track circuit ( )
a. 100 V DC megger b. sensible multi meter
c. 500 V DC megger d. clip-on meter

29) To detect defective PSC sleeper is tested with_____in a track circuit ( )
a. 100 V DC megger b. sensible multi meter
c. 500 V DC megger d. clip-on meter

30) The resistance values between insert to insert of a PSC sleeper before laying in Track circuit should be not less than_____, after 6 months of manufacturing ( )
a. 150 Ω b. 300 Ω c. 500 Ω d. 750 Ω

31) Testing of Glued Joints Insulation Resistance is done with_____ ( )
a. 100 V DC megger b. sensible multimeter
c. 500 V DC megger d. clip-on meter

32) The insulation resistance value should be when tested Glued Insulation Joint in dry condition, before laying in a TC ( )
a. not less than 25 MΩ b. less than 25 MΩ
c. less than 3 KΩ d. not less than 3 KΩ

33) The insulation resistance value should be____when tested Glued Insulation Joint in wet condition, before laying in a TC ( )
a. not less than 25 MΩ b. less than 25 MΩ
c. less than 3 KΩ d. not less than 3 KΩ

34) In any case the dead section should be less than_____in B.G. ( )
a. 6 meters b. 8 meters c. 1.8 meters d. 10.8 meters

35) Normally the dead section in the point zone shall be less than___in BG ( )
a. 6 meters b. 8 meters c. 1.8 meters d. 10.8 meters

36) In a point zone, If dead section is more than 1.8m but less than 6m then, the track circuit length on either side of dead section must not be less than_____ ( )
a. 6 meters b. 8 meters c. 10 meters d. 12 meters

37) The bond hole / drill bit size is_____mm dia. ( )
a. 6.8 b. 7.2 c. 7.8 d. 8.2

38) ___type pandrol clips to be provided for PSC sleepers at Glued Insulation Joints( )
a. I b. J c. K d. S

39) Never bypassed _____ in the track circuit ( )
a. TFBC b. Battery c. VR (RT) d. none

40) For each PSC sleeper, __ number of rubber pads & GFN liners are required ( )
a. 1 & 1 b. 2 & 2 c. 2 & 4 d. 4 & 4

41) In a track circuit, the B.R. is always aimed to be_____ohms ( )
a. zero to infinity b. zero c. infinity d. none

42) In a track circuit, the R.R. is always aimed to be_____ohms ( )
a. zero to infinity b. zero c. infinity d. None

43) In a T.C., if F/E and R/E voltages are equal, then_____is in good condition ( )
a. Ballast resistance b. Rail resistance
c. Variable resistance d. none

44) In a T.C., if F/E and R/E currents are equal, then_____is in good condition ( )
a. Ballast resistance b. Rail resistance
c. Variable resistance d. None

45) Percentage of release of T.R. is calculated with_____ formula ( )
a. (P.U. value ÷ D.A. value)100 b. (D.A. value ÷ P.U. value)100
c. (P.U. value × D.A. value) ÷ 100 b. (D.A. value × P.U. value) ÷ 100

46) Percentage of release of Track Relay should be not less than_____% ( )
a. 50 b. 60 c. 68 d. 85

47) In a T.C., B.R. is calculated by using F/E & R/E voltages and currents as____( )
a. Difference in voltages ÷ average of currents
b. Difference in currents ÷ average of voltages
c. Average of voltages ÷ difference in currents
d. Average of currents ÷ average of voltages

48) In a T.C., R.R. is calculated by using F/E & R/E voltages and currents as____( )
a. Difference in voltages ÷ average of currents
b. Difference in currents ÷ average of voltages
c. Average of voltages ÷ difference in currents
d. Average of currents ÷ average of voltages

49) Track relay sensitivity depends upon_____ ( )
a. Pick up value b. Drop away value c. % of Release d. None

50) Periodical Over Hauling of Track relay is once in_____years (latest) ( )
a. 10 b. 12 c. 14 d. none

ANSWERS KEY

1	2	3	4	5	6	7	8	9	10
d	b	c	b	a	d	b	b	a	a
11	12	13	14	15	16	17	18	19	20
b	a	b	c	a	b	b	a	a	b
21	22	23	24	25	26	27	28	29	30
a	b	c	c	c	b	a	b	d	c
31	32	33	34	35	36	37	38	39	40
a	a	d	a	c	d	b	b	c	c
41	42	43	44	45	46	47	48	49	50
c	b	b	a	b	c	c	a	c	b

'LED' COLOUR LIGHT SIGNAL

1) Non-Blanking arrangement in current regulator is provided for home signal aspects_____ ( )
   a. RG b. HG c. DG d. UG

2) Blanking arrangement in current regulator is provided for home signal aspects_____ ( )
   a. RG b. HG c. DG d. Both b & c

3) For Yellow aspect of a main signal_____in current regulator ( )
   a. Blanking mode shall be selected
   b. Non-Blanking mode shall be selected
   c. Both a & b depending on the signal
   d. None

4) In the current regulator if Blanking / Non-Blanking mode is not selected, the C.R. by default_____ ( )
   a. works in Blanking mode b. works in Non-Blanking mode
   c. doesn't work d. None

5) The power supply coupler of the current regulator gives_____to the LED's in the main signal lighting unit ( )
   a. AC voltage b. DC voltage c. Frequency d. None

6) If the input voltage of the current regulator is decreased from 137.5V to 82.5 V AC, the current taken by the current regulator_____ ( )
   a. decreases b. increases c. remains constant d. None

7) If the input voltage of the current regulator is increased from 82.5V to 137.5 V AC, the current taken by the current regulator ( )
   a. decreases b. increases c. remains constant d. None

8) In integrated signal LED unit, Blanking / Non-blanking is provided for_____( )
   a. RG unit b. HG unit c. DG unit d. All

9) Codal life of a LED signal is_____(Mfd : 2011 or later) ( )
   a. 2 years b. 6 years c. 8 years d. 10 years

10) _____type of 'AC LED ECR' is only to be used for LED signals ( )
   a. QSPA1 b. QECX61 c. QNA1 d. both a & b

11) Jumpers on CR for selecting the type of_____used in the circuit ( )
   a. power supply b. ECR c. blanking & non blanking d. all

12) When LED illumination falls below 40%,_____forces to drop ECR ( )
   a. LED unit b. Sensors c. Current regulator d. HMU

13) Optical Sensors are provided in the LED unit for_____ ( )
a. Energizing ECR b. Sensing illumination in the unit
c. Sensing outside light d. Sensing engine head light

14) In latest lamp circuit, ECR relay shall be_____ ( )
a. Connected only on BX 110 V side
b. connected only on NX 110 V side
c. connected on BX 110 V or NX 110 V side
d. None

15) An ECR relay has_____contacts ( )
a. 4F / 4B b. 2F / 2B c. 6F / 6B d. 8F / 8B

16) Normal working voltage of LED signal unit is / are_____ ( )
a. 110 volt AC b. 24 volt DC
c. 230 AC d. 60 V DC

17) The rated voltage at Input terminals of current regulator for main signal ( )
a. 110 +/- 20% V AC b. 110 +/- 25%V AC
c. 110 +/- 15 V AC d. 110 +/- 10%V AC

18) The rated voltage at Input terminals for Calling-on signal ( )
a. 110 +/- 20% V AC b. 110 +/- 25%V AC
c. 110 +/- 15 V AC d. 110 +/- 10%V AC

19) The rated voltage at Input terminals for Route LED unit signal ( )
a. 110 +/- 20% V AC b. 110 +/- 25%V AC
c. 110 +/- 15 V AC d. 110 +/- 10%V AC

20) The rated voltage at Input terminals for Shunt LED unit ( )
a. 110 +/- 20% V AC b. 110 +/- 25%V AC
c. 110 +/- 15 V AC d. 110 +/- 10%V AC

21) The rated current at Input terminals for Main signal unit ( )
a. 150 mA +10%, -20% b. 140 mA +20%, -10%
c. 140 mA +10%, -20% d. 140 mA +20%, -20%

22) The rated current at Input terminals for Calling on LED unit ( )
a. 140 mA +10%, -20% b. 150 mA +20%, -10%
c. 150 mA +10%, -20% d. 140 mA +10%, -20%

23) The rated current at Input terminals for Route LED unit ( )
a. 25 mA +/- 20% b. 25 mA +/- 10%
c. 25 mA +/- 5% d. 25 mA +/- 15%

24) The rated current at Input terminals for Shunt LED unit ( )
a. 55 mA +/- 20% b. 55 mA +/- 10%
c. 55 mA +/- 5% d. 55 mA +/- 15

25) _____colour has more wave length ( )
a. Yellow b. Red c. Green d. White

26) In main signal lighting unit LED's are connected in_____combination ( )
a. series b. series-parallel c. parallel d. none

27) The main advantage of LED signals ( )
a. longer visibility b. life is more
c. power consumption is less d. All the above

28) The earth resistance of a signal unit should be less than ( )
a. 40 ohms b. 30 ohms c. 20 ohms d. 10 ohms

29) The S.I. unit for illuminance is_____ ( )
a. Flux b. Lux c. Newton d. Weber

30) The illumination measured at 1.5 meters from LED signal lighting unit in axial direction at rated voltage for RG LED unit should be_____ ( )
a. 150 LUX +40%, -10% b. 175 LUX +40%, -10%
c. 50 LUX +40%, -10% d. 30 LUX +40%, -10%

31) The illumination measured at 1.5 meters from LED signal lighting unit in axial direction at rated voltage for HG LED unit should be_____ ( )
a. 150 LUX +40%, -10% b. 175 LUX +40%, -10%
c. 50 LUX +40%, -10% d. 30 LUX +40%, -10%

32) The illumination measured at 1.5 meters from LED signal lighting unit in axial direction at rated voltage for DG LED unit should be _____ ( )
a. 150 LUX +40%, -10% b. 175 LUX +40%, -10%
c. 50 LUX +40%, -10% d. 30 LUX +40%, -10%

33) The illumination measured at 1.5 meters from LED signal lighting unit in axial direction at rated voltage for Calling-On LED unit should be _____ ( )
a. 150 LUX +40%, -10% b. 175 LUX +40%, -10%
c. 50 LUX +40%, -10% d. 30 LUX +40%, -10%

34) The illumination measured at 1.5 meters from LED signal lighting unit in axial direction at rated voltage for Route LED unit should be_____ ( )
a. 150 LUX +40%, -10% b. 175 LUX +40%, -10%
c. 50 LUX +40%, -10% d. 30 LUX +40%, -10%

35) The illumination measured at 1.5 meters from LED signal lighting unit in axial direction at rated voltage for Shunt LED unit should be_____ ( )
a. 150 LUX +40%, -10% b. 175 LUX +40%, -10%
c. 50 LUX +40%, -10% d. 30 LUX +40%, -10%

36) _____fuse rating is used for the LED signals lamp circuit ( )
a. 830 mA b. 530 mA c. 630 mA d. 730 mA

37) The working current of ECR relay is_____ ( )

a. 128 mA b. 148 mA c. 108 mA d. 208 mA

38) When one array fails in the main signal lighting unit ( )

a. ECR picks up b. ECR drops c.may pick up or drop d. All

39) The minimum visibility distance of Main LED signal lighting unit shall be _____ in clear day light with peak sun rays at rated voltage ( )

a. 200 m b. 400m c. 500 m d. 600 m

40) The minimum visibility distance of Direction type Route Indicator with three lit LED signal lighting units shall be _____ in clear daylight with peak sun rays at rated voltage ( )

a. 200 m b. 400m c. 500 m d. 600 m

41) The minimum visibility distance of LED signal lighting units, other than Main and Route signal lighting units, shall be _____ in clear daylight with peak sun rays at rated voltage ( )

a. 200 m b. 400m c. 500 m d. 600 m

42) In blanking mode, a Main Signal Lighting Unit shall extinguish when input current drawn by the current regulator falls outside specified limits of rated input current or illumination falls to a value _____ ( )

a. which is not less than 30% of nominal illumination
b. which is not less than 40% of nominal illumination
c. which is not less than 50% of nominal illumination
d. which is not less than 60% of nominal illumination

43) In Non - blanking mode, a Main Signal Lighting Unit shall remain lit when input current drawn by the current regulator falls outside specified limits of rated input current or illumination falls to a value _____ ( )

a. which is less than 30% of nominal illumination
b. which is less than 40% of nominal illumination
c. which is less than 50% of nominal illumination
d. which is less than 60% of nominal illumination

44) In blanking mode, a Main Signal Lighting Unit shall extinguish when illumination falls to a value which is not less than 40% of nominal illumination due to a failure or any other reason. In such case, current regulator should not draw input current _____at maximum rated voltage. ( )

a. more than 20 mA b. more than 30 mA
c. more than 40 mA d. more than 50 mA

45) In Non - blanking mode, a Main Signal Lighting Unit shall remain lit when illumination falls to a value which is not less than 40% of nominal illumination due to a failure or any other reason. In such case, input current drawn by current regulator shall be limited to_____to ensure dropping of ECR. ( )

a. less than 20 mA b. less than 30 mA

c. less than 40 mA d. less than 50 mA

46) Which color travels longer distance ( )

a. Violet b. Green c. Yellow d. Red

47) _____is connected across each LED to prevent failure of total array ( )

a. Capacitor b. Resistance c. Transistor d. Diode

48) _____number of shunt LED units to be lit for picking up of ECR ( )

a. 1 b. 2 c. 3 d. None

49) QECX 61 AC LED ECR is used for ( )

a. Main signal units b. Shunt units c. Route units d. All

50) One array is provided in the_____lighting LED units ( )

a. Shunt b. Route c. both a & b d. None

ANSWERS KEY

1	2	3	4	5	6	7	8	9	10
a	d	c	b	b	c	c	b	c	b
11	12	13	14	15	16	17	18	19	20
d	c	b	b	a	a	b	a	a	a
21	22	23	24	25	26	27	28	29	30
c	c	c	c	b	b	d	d	b	a
31	32	33	34	35	36	37	38	39	40
b	a	c	c	d	c	c	a	d	b
41	42	43	44	45	46	47	48	49	50
a	b	b	b	c	d	b	b	d	c

UNIVERSAL POINT MACHINE

1) The normal working current of Universal point machine ( )
   a. 2A-3A b. 3A-4A c. 5A-6A d. 8A-9A

2) For obstruction test, gauge is placed from the toe of switch at a distance of ( )
   a. 100 mm b. 120 mm c. 150 mm d. 175 mm

3) Point is reverse and locked condition_____indication relay picks up ( )
   a. NWKR b. RWKR c. WCR d. ASR

4) During point operation____&____contacts makes in universal point machine ( )
   a. ND & RD b. ND & RC c. NC & RC d. RC & RD

5) When point is set and locked in normal position, then_____makes. ( )
   a. RC contact b. NC contact c. ND contact d. a & c both

6) Drive rod is connected to_____ ( )
   a. point throw slide b. lock slide c. detection slide d. none

7) With____relay picking up, 110v DC is extended to point location through bus bar ( )
   a. WLR b. WCR c. PCR d. None

8) "No Go Gauge Obstruction test"_____mm thick obstruction is placed between switch and stock rail. ( )
   a. 5 mm b. 3.25 mm c. 1.6 mm d. None

9) Friction clutch in IRS type point machine_____ ( )
   a. self adjusting b. not self adjusting
   c. adjusted at workshop only d. a & c are correct

10) The stroke of IRS type electric Point Machine is_____mm ( )
   a) 115 b) 143 c) 200 d) 100

11) The total movement of drive disc is_____ ( )
   a. 220 degrees b. 270 Degrees
   c. 180 degrees d. 360 degrees

12) Obstruction current shall be_____times the normal working current. ( )
   a. 1.5 to 2.5 b.1.5 to 2.0 c. 1.5 to 3.5 d. 2 times

13) When crank handle is inserted for cranking ( )
   a. 110V DC positive is cut off b. 110V DC negative is cut off
   c. 24V DC is cut off d. a & c are correct

14) Which Relay functions as timer in point circuit ( )
   a. WXR b. WJR c. WCR d. WLR

15) During obstruction test of machine operated point with 5mm test piece_____( )
   a. Point shall not lock b. Friction clutch shall slip
   c. Detection contacts shall not make d. all

16) The stroke of Point Machine used for Thick Web layout is___mm ( )
a) 115 b) 143 c) 220 d) 160

17) The opening of stock rail and tongue rail in TWS layout is_____mm ( )
a) 115 b) 160 c) 200 d) 100

18) TWS layout is provided with_____type of locking ( )
a) Direct locking b) Indirect locking
c) both a and b d) No locking is provided

19) Voltage required to operate TWS point is_____ ( )
a) 24 V DC b) 110 V AC c) 12 V DC d) None

20) Periodical lubrication checks for all gears of point machine should be done at least once in_____by technician. ( )
a) Daily b) 7 days c) 15 days d) 30 days

21) Point detection circuit voltage is_____ ( )
a) 24 V DC b) 110 V DC c) 12 V DC d) None

22) In universal point machine_____locking is provided. ( )
a) In and Out type b) Rotary type c) Both a and b d) None

23) _____type of motor is used in IRS electric point machine ( )
a) DC Motor b) Series Motor c) Split field motor d) All

24) The possibility of both slides moving together due to rust in case one slide connecting rod breaks is prevented by the provision of_____between them. ( )
a) Lubrication b) Brass plates c) Iron plates d) None

25) In a cross over point, both the points are operated in ( )
a) Series b) Parallel c) Series Parallel d) None

26) In a cross over point, Both the points are detected in ( )
a) Series b) Parallel c) Series Parallel d) None

27) Friction clutch in a point machine is a part of ( )
a) Crank handle cut out assembly b) Transmission assembly
c) Reduction gear assembly d) Contactor unit

28) Which of the following is not associated with a point machine ( )
a) Track locking test b) Correspondence test
c) “No go” test d) Fail safe adjustment

29) Which of the following is not associated with a point machine ( )
a) 110 V DC b) 24 V DC c) Cross protection d) 110 V AC

30) With 3.25mm test piece placed at 150 mm from toe of the switch, ( )
a) Detection contacts should just make b) detection contacts should break
c) detection contacts should just break d) None of the above

31) With 1.6 mm test piece placed at 150 mm from toe of the switch, ( )
a) Detection contacts should just make b) detection contacts should break
c) detection contacts should just break d) None of the above

32) When a point is operated from N to R With 5 mm test piece placed at 150 mm from toe of the switch, ( )
a) NC & RC break b) NC& RC make c) ND & RC break d) None

33) With 5 mm test piece placed at 150 mm from toe of the switch, ( )
a) Lock dog should not enter lock slide notch
b) Detection contacts should not make
c) Friction clutch should declutch
d) All the above

34) Insulation grade of winding in a motor of a point machine shall be ( )
a) More than 100 M Ohms b) More than 10 M Ohms
c) More than 10 Ohms c) None of the above

35) AC immunity of point motor is ( )
a) 160 V DC b) 160 V AC c) Both d) None

36) When point is set in N and locked, the following contacts make ( )
a) NC & ND b) ND & RC c) NC & RC d) RD & NC

37) When point is set in R and locked, the following contacts make ( )
a) NC & ND b) ND & RC c) NC & RC d) RD & NC

38) When point is not set in N or R, the following contacts make ( )
a) NC & ND b) ND & RC c) NC & RC d) RD & NC

39) Mode of locking in TWS point layout is ( )
a) Rotary type b) Clamp type c) In and out type d) Both a and b

40) Mode of locking in conventional IRS point layout is ( )
a) Rotary type b) Clamp type c) In and out type d) Both a and b

41) As per Schedule of maintenance, SEM para 19.148, Voltages and Currents shall be measured at motor terminals in a point machine by signal maintainer once in( )
a) Fortnight b) Month
c) Month in presence of JE/SSE d) Quarter in presence of JE/SSE

42) As per Schedule of maintenance, SEM para 19.148, Obstruction test for a point machine to be conducted by signal maintainer once in ( )

a) Fortnight b) Month
c) Quarter d) Quarter in presence of JE/SSE

43) Crank handle key provided for manual operation of the points worked by electric point machine must be interlocked with ( )
a) signal HR circuit b) Point operation circuit
c) WLR circuit d) Point detection circuit

44) The crank handle key for each group of point machines should be so arranged that they ( )
a) Can be interchanged if required b) have same for all points
c) Cannot be interchanged d) None

45) Maximum permissible parallelism in meters between Point Contactor and Point Motor (160 V AC immunity) on single line is ( )
a) 910 b) 1000 c) 1100 d) 1500

46) Maximum permissible parallelism in meters between Point Contactor and Point Motor (160 V AC immunity) on double line is ( )
a) 910 b) 1000 c) 1100 d) 1500

47) Inspection and cleaning of inside equipment by opening the covers of point machines comes under ( )
a) Group A works b) Group B works c) Group C works d) None

48) A point machine should be provided at a minimum distance of_____meters from centre line of track (CLAT) ( )
a) 1 b) 1.5 c) 1.6 d) None

49) Which of the following is true for Track locking test conducted on point machine( )
a) Point does not operates when track drop
b) Point operation to complete even if track drops during operation
c) Both a and b
d) None

50) During obstruction in the point, the feed to point is automatically disconnected within _____times the normal operating time of point ( )
a) 1.5 b) 1.5 to 2 c) 3 d) None

51) In a point machine, Conversion of rotary motion into linear motion is achieved by( )
a) Friction clutch assembly b) rack and pinion arrangement.
c) Reduction gear assembly c) Friction clutch

52) In TWS layout, the clearance at junction of rail head (JOH) is ( )
a) 60 mm b) 115 mm c) 220 mm d) None

ANSWERS KEY

1	2	3	4	5	6	7	8	9	10
a	c	b	c	d	a	c	a	d	b
11	12	13	14	15	16	17	18	19	20
b	b	b	b	d	c	b	c	d	c
21	22	23	24	25	26	27	28	29	30
a	b	d	b	b	a	b	d	d	c
31	32	33	34	35	36	37	38	39	40
a	b	d	b	b	b	d	c	d	a
41	42	43	44	45	46	47	48	49	50
c	a	a	c	a	c	a	c	c	b
51	52	53	54	55	56	57	58	59	60
b	a								

PANEL INTERLOCKING (BRITISH SYSTEM)

1) SEM part -1,correction slip no18 calling on signal initiation time is_____sec ( )
   a) 60 b) 90 c) 120 d) 240

2) SEM part-1, correction slip no18 calling on signal below starter can be initiated( )
   a) after 60 sec
   b) Immediately after berthing track is occupied
   c) 120 sec after berthing track is occupied
   d) Immediately without berthing track is occupied

3) Calling on signal will not detect points in_____ ( )
   a) Route b) Isolation c) overlap d) none

4) Relay which ensures one signal one calling on principle is_____ ( )
   a) COJSLR b) CONJPR c) COCAR d) COAR

5) Calling on signal will lock_____ ( )
   a) Stop signal above it b) Shunt signal below it
   c) a & b d) none

6) Indication locking is proved in_____Circuit ( )
   a) TSR b) ASR c) UCR d) HR

7) Back/route locking is proved in_____Circuit ( )
   a) TSR b) ASR c) UCR d) HR

8) Indication locking is achieved through_____ ( )
   a) Signal controlling relays b) Signal lamp checking relays
   c) back lock TPR's d) a & b

9) Back/route locking is achieved through_____ ( )
   a) Signal controlling relays b) Signal lamp checking relays
   c) TPR's d) a & c

10) Calling on signal can be provided below_____ ( )
   a) Adv starter b) Adv starter and Routing home
   c) Adv starter and starter d) FSS and routing home

11) Calling on signal cannot be provided below_____ ( )
   a) Adv starter b) Routing home c) Starter d) First stop signal

12) Color of SH signal button/knob as per SEM is_____ ( )
   a) Red b) Red with white dot
   c) Yellow d) Yellow with white dot

13) Aspect of signal ahead is proved in_____Circuit ( )
   a) HR b) UCR c) TSR d) ASR

14) Relay which prevents unauthorized operation of panel is_____ ( )
a) TSR b) UCR c) SMR d) HR

15) Re clearance of signal after train movement even though signal knob is reverse is prevented by_____relay ( )
a) RR b) UCR c) UGR d) TSR

16) Previous routes released & signal knob normalized is proved in_relay circuit ( )
a) RR b) TSR c) UCR d) JSLR

17) _____ is proved to achieve approach locking ( )
a) UCR b) TSR c) Approach TPR d) b and C

18) Back lock TPR's are proved in_____ ( )
a) ASR b) JSLR c) TSR d) a and b

19) Point indication near point knob is given through_____ ( )
a) WKPR b) WSR c) WKR d) WLR

20) Aspect of signal ahead not blank is proved in_____ ( )
a) Calling ON signal HR b) Main signal HR
c) Shunt signal HR d) all

21) Combined TSR can be provided for signals with_____ ( )
a) Same route b) Conflicting to each other
c) common controlling TC d) all

22) Combined ASR can be provided for signals with_____ ( )
a) Same route b) Conflicting to each other
c) common controlling TC d) all

23) To achieve locking of conflicting signals_____is proved ( )
a) Front contact of ASR b) Back contact of UCR c) Back contact of RR d) all

24) UCR back contact is proved in_____circuit ( )
a) RLR b) RR c) ASR d) NJPR

25) Indication locking and back/route locking is proved in_____circuit ( )
a) UCR b) ASR c) WLR d) HR

26) Proving aspect of signal ahead is for_____ ( )
a) Flexibility b) Safety c) Red lamp protection d) b and c

27) OVSR will hold the points in the_____ ( )
a) Overlap b) Isolation c) Route d) b and c

28) For stopping train OVSR picks up_____ ( )
a) after 60 sec b) after 120 sec c) immediately d) none

29) ____relay is normally in energized condition ( )

a) UCR b) JSLR c) OVSR d) UYR

30) Relay controlling the caution aspect of the signal is_____ ( )

a) DR b) HHR c) UGR d) HR

31) Relay controlling the Attention aspect of the signal is_____ ( )

a) HHR b) DR c) HR d) UGR

32) Relay controlling the proceed aspect of signal is_____ ( )

a) DR b) HHR c) HR d) UGR

33) Point zone TPR contacts are proved in_____ ( )

a) UCR b) WLR c) TSR d) UGR

34) Point zone TPR is bypassed with_____in WLR circuit ( )

a) WLR front contact b) WLR back contact

c) ASR front contact d) ASR back contact

35) WLR back contact is proved as cross protection contact in_____circuit ( )

a) WKR b) WSR c) WKPR d) NWR/RWR

36) Route slit indication on panel is given through_____contact ( )

a. UCR pick up b. HR pick up c. ASR drop d. ASR UP

37) Point slit indication on the panel is given through_____contact ( )

a. WKR UP b. WKPR UP c. WSR UP d. ASR UP

38) _____Relay initiates route cancellation ( )

a. JSLR b. RJPR c. NJPR d. ASR

39) _____relay picks up when signal knob is reversed ( )

a) TSR b. UCR c. ASR d. NJPR

40) Point Free indication near point knob is given through_____ ( )

a) ASR and Point zone TPR b) NCR / RCR

c) UCR and HR d. WLR

41) Interlocking between conflicting signals is achieved in_____circuit. ( )

a) UCR and ASR b) UCR and TSR c) UCR and HR d) TSR and HR

42) ___is provided to prevent vital circuits do not operate with false feed ( )

a. Red lamp protection b. Double cutting

c. Cross protection d. b & c

43) ____locking is provided where there are no track circuits in rear of the signal ( )

a) Approach b) Dead approach c) Track d) all

44) _____locking is provided for the purpose of safety ( )
a) Approach b) Dead approach c) Track d) all

45) The correspondence of point knob is proved in_____ ( )
a) WSR b) WKPR c) WKR d) all

46) NCR/RCR contacts are proved in_____ ( )
a) WLR b) WSR c) WKPR d) all

47) TPR's are not proved in _____ ( )
a) ASR b) UCR c) JSLR d) UYR's

48) In home/calling-on RLR circuit _____ interlocking condition is proved ( )
a) partial b) complete c) no d) none

49) All the conditions for clearing the signal is proved in_____circuit ( )
a) WLR b) ASR c) UCR d) HR

50) Colour of signal knob is_____ ( )
a) Red b) yellow c) blue d) grey

51) _____relay picks up after a time lag ( )
a) JSLR b) NJPR c) UYR d) COCAR

52) _____relay picks up when calling on track is occupied ( )
a) JSLR b) NJPR c) COAR d) COCAR

53) _____relays are made slow to release ( )
a) COCAR b) JSLR c) UYR d) all

54) __relay picks when cancellation button is pressed in route locked condition ( )
a) UYR b) TSR c) JSLR d) none

55) ____is mandatory to prove in signal control circuit ( )
a) Signal in advance and rear must not be blank
b) Signal in advance must not be blank
c) neither advance nor rear signal condition is proved
d) Signal in rear must not be blank

56) Length of approach track for providing approach locking on home signal is___( )
a) 1 km b) 1.4 km c) 65 mt d) none

57) Controlling and back lock tracks are same for_____signal ( )
a) home b) calling on c) starter d) shunt

58) Controlling and back lock tracks are different for_____signal ( )
a) home b) starter c) shunt d) a and b

59) Track red indication on panel appears when_____ ( )
a) track is free b) track circuit failed
c) track is occupied d) b and c

60) For home signal_____points are proved ( )
a) points in the route b) points in overlap
c) points in isolation d) all

61) For starter signal_____points are proved ( )
a) points in the route b) points in isolation
c) points in overlap d) a and b

62) For calling-on signal_____points are proved ( )
a) points in the route b) points in isolation
c) points in overlap d) a and b

63) Advantages of electrical interlocking is ( )
a) easy maintenance b) easy installation
c) efficient and easy operation d) all

64) Following conditions are ensured before operating the point ( )
a) SM's key IN b) free from track lock
c) free from route lock d) all

65) UCR is_____relay ( )
a) route holding b) route releasing
c) route checking d) route locking

66) When OVSR drops,_____ ( )
a) locks overlap points only b) locks points in the route only
c) locks isolation points only d) for unlocking the overlap point

67) When ASR picks up_____ ( )
a) route is released b) points are unlocked
c) UYR's drop d) all

68) In case of dead approach locking, route will be released_____ ( )
a) after train movement b) with cancellation
c) a and b d) none

69) Which statement is incorrect ( )
a) crank handle is interlocked with signal
b) crank handle can be extracted after signal is taken off
c) crank handle cannot be extracted after signal is taken off
d) crank handle can be extracted before signal is taken off

70) UCR back contact is proved in_____circuit ( )
a) RLR b) RR c) ASR d) NJPR

71) Incorrect statement regarding TSR is, _____ ( )
a) normally in energized condition b) holds through stick path
c) proved in ASR for approach locking d) proved in UCR circuit

72) Incorrect statement regarding COAR is_____ ( )
a) normally in drop condition
b) picks up when calling on track occupied
c) pick up contact is not proved in CO HR
d) pick up contact is proved in CO HR

73) Incorrect statement regarding SMR is,_____ ( )
a) pick up contact is proved in ASR
b) pick up contact is proved in UCR
c) pick up contact is proved in NCR/RCR
d) JSLR

74) Incorrect statement regarding UCR is,_____ ( )
a) track pick up condition is proved b) must be an authorized operation
c) concern crank handle IN d) conflicting signals are not taken off

75) _____relay proves that cancellation circuit is not in progress ( )
a) JSLR b) RJPR c) COCAR d) all

76) Relays which pick up during the train movement to release the route after train movement is,_____ ( )
a) ASR's/ASPR's b) COAR/COCAR c) JSLR/NJPR d) UYR's

77) Siding normal proving relay is_____ ( )
a) Siding YPR b) Siding SPR c) Siding NPR d) Siding RPR

78) _____relay proves that prescribed time is lapsed during cancellation ( )
a) ASR b) COCAR c) NGPR d) NJPR

79) Lamp failure indication relay is_____ ( )
a) GXJR b) JXGR c) GEJR d) LFJR

80) UYR's are made slow to release,_____ ( )
a) till ASR picks up
b) till ASR picks up and holds through its last repeater relay

c) till JSLR picks up and holds through its last repeater relay
d) none

81) JSLR is made slow to release_____ ( )
a) till ASR picks up
b) till ASR picks up and holds through its last repeater relay
c) till JSLR picks up and holds through its last repeater relay
d) none

82) GXJR will be_____ ( )
a) Normally energized relay b) Normally de-energized relay
c) pick up when signal is operated d) pick up when signal is blank

83) For operation of points in route setting type RRI_____position point switches are used. ( )
a) single b) two c) three d) all

84) The 3 positions of point switch in RRI are_____ ( )
a) Normal position b) centre position
c) reverse position d) all

85) For auto operation of points in RRI, point switch must be in_____position ( )
a) normal position b) reverse position
c) centre position d) none

86) GNR is_____ ( )
a) point button relay b) route button relay
c) all signal button normal relay d) none

87) All signal button normal relay is_____ ( )
a) UNR b) GNCR c) GNR d) UNCR

88) All point button normal relay is_____ ( )
a) WNCR b) WNR c) WRR d) WCNR

89) GN is_____ ( )
a) route button b) common route button
c) signal button d) common signal button

90) Route setting type interlocking is also called as_____ ( )
a) Entry and Entry type b) Entry and Exit type
c) Exit and Exit type d) none

91) Color light signaling is_____ ( )
a) compulsory in RRI b) compulsory in PI
c) optional in PI d) a and c

92) Sectional route release is_____ ( )

a) b and d b) compulsory in RRI

c) compulsory in PI d) optional in PI

93) identify the statement which is incorrect,_____ ( )

a) RRI is suitable for major yards

b) PI is suitable for smaller yards

c) In RRI points are operated individually before signal is operated

d) Sectional route release is compulsory in RRI

94) Cross protection to HR relay is achieved through_____ ( )

a) RR front contact b) UCR back contact

c) RR back contact d) UCR front contact

95) Indication, route and approach locking are proved in_____ ( )

a) HR b) UCR c) ASR d) TSR

96) Statement incorrectly related to pick up WLR is_____ ( )

a) NCR/RCR up b) ASR's/ASPR's up

c) Back lock TPR's up d) pt zone TPR up

97) Relay which will be in picked up condition before & after signal is taken off__ ( )

a) TSR b) UCR c) ASR d) HR

98) When home signal is approach locked, route can be released in___ways ( )

a) 2 b) 3 c) 4 d) 5

99) When home signal is not approach locked, route can be released in___ways ( )

a) 2 b) 3 c) 4 d) 5

100) Starter route can be released through_____ ( )

a) UYR's path b) JSLR/NJPR path

c) TSR/App TPR path d) all

101) Conditions proved in UCR, ASR and HR are reflected in_____ ( )

a) Table of control b) Signalling plan

c) Engineering plan d) cable route plan

102) Circuit testing consists of_____ ( )

a) Negative tests

b) Dead/Approach locking tests

c) Back/Route locking tests

d) all

103) Incorrect statement related with TSR is_____ ( )

a) picks up with 1st controlling track b) signal knob normal

c) previous routes released d) none

104) Relay controlling the proceed aspect of Signal is_____ ( )

a) DR b) HHR c) HR d) UGR

105) Incorrect statement regarding proving of SMR 'F' contact in_____ ( )

a) NCR/RCR b) JSLR c) CH EKT coil d) NJPR

ANSWERS KEY

1	2	3	4	5	6	7	8	9	10
a	b	c	d	c	b	b	d	c	d
11	12	13	14	15	16	17	18	19	20
a	c	a	c	d	b	d	d	c	b
21	22	23	24	25	26	27	28	29	30
d	d	d	c	b	d	a	b	c	d
31	32	33	34	35	36	37	38	39	40
a	a	b	a	d	c	b	a	b	a
41	42	43	44	45	46	47	48	49	50
c	d	b	d	c	a	b	c	d	a
51	52	53	54	55	56	57	58	59	60
b	c	d	c	b	a	d	d	d	d
61	62	63	64	65	66	67	68	69	70
d	d	d	d	c	a	d	c	b	c
71	72	73	74	75	76	77	78	79	80
d	c	a	a	b	d	c	d	a	b
81	82	83	84	85	86	87	88	89	90
b	a	c	d	c	d	b	a	c	b
91	92	93	94	95	96	97	98	99	100
d	a	c	b	c	c	a	c	b	d
101	102	103	104	105					
a	d	d	a	d					

AXLE COUNTERS & BPAC

1) In CEL SSDAC data packets consists of_____ ( )
   a. Count Information b. Reset Information
   c. Error Information d. All

2) In CEL SSDAC MODEM is_____ ( )
   a. V-21 b. V-22 c. V-23 d. V-24

3) In CEL SSDAC the approximate cycle time is_____micro seconds ( )
   a. 50 b. 75 c. 100 d. 125

4) In CEL SSDAC for fixing of coils_____mm dia hole is to be drilled ( )
   a. 10 mm b. 2 mm c. 14 mm d. 16 mm

5) In CEL SSDAC the axle detectors are fixed at a distance of_____m from Glued Joint ( )
   a. 23 b. 27 c. 30 d. 33

6) The distance between two Axle detectors of two SSDAC systems is at greater than_____meters to avoid mutual interference ( )
   a. 1.5 m b. 1.6 m c. 1.8 m d. 2 m

7) The Axle detectors are fixed in clear spacing of_____mm between the two sleepers ( )
   a. 200 b. 300 c. 400 d. 500

8) The default factory address setting for Entry unit is___in CEL SSDAC ( )
   a. 01 h b. 02 h c. 03 h d. 04 h

9) The default factory address setting for Exit unit is___in CEL SSDAC ( )
   a. 01 h b. 02 h c. 03 h d. 04 h

10) _____No. of address pairs are designed for setting in CEL SSDAC ( )
   a. 12 b. 13 c. 14 d. 15

11) _____is the carrier frequency for Entry unit in CEL SSDAC ( )
   a. 980 Hz b. 1650 Hz c. 1800 Hz d. 2700 Hz

12) _____is the carrier frequency for Exit unit in CEL SSDAC ( )
   a. 980 Hz b. 1650 Hz c. 1800 Hz d. 2700 Hz

13) The MLB keeps the track of_____counts in CEL SSDAC ( )
   a. Primary Counts b. Secondary Counts
   c. Remote Counts d. All

14) The MLB card sends the Primary / secondary counts to the remote SSDAC on regular basis of every____milli seconds in CEL SSDAC ( )
   a. 600 b. 700 c. 800 d. 900

15) The 8 LEDs on the MLB Card denotes___error code in CEL SSDAC ( )

a. Binary b. Octa Decimal c. Hexa Decimal d. Decimal

16) The Event Logger has___MB Flash Memory to store packets in CEL SSDAC ( )

a. 2 b. 4 c. 6 d. 8

17) In CEL SSDAC Event Logger card_____Pages of data can be stored in Flash Memory. ( )

a. 1024 b. 2048 c. 4096 d. 512

18) In CEL SSDAC the data can be stored in Flash Memory in_____basis ( )

a. LIFO b. LILO c. FILO d. FIFO

19) The Modem card will have_____FSK Modem chip in CEL SSDAC ( )

a. 7510 b. 7410 c. 7610 d. 7710

( )

a. 5 b. 7 c. 8 d. 10

20) DIP Switch setting for Entry Unit Reset Box for CEL SSDAC is_____ ( )

a. OFF, OFF, OFF, OFF b. OFF, OFF, OFF, ON

c. OFF, OFF, ON, OFF d. OFF, OFF, ON, ON

21) DIP Switch setting for Exit Unit Reset Box for CEL SSDAC is_____ ( )

a. OFF, OFF, OFF, OFF b. OFF, OFF, OFF, ON

c. OFF, OFF, ON, OFF d. OFF, OFF, ON, ON

22) The condition of jumpers J1 and J2 in CEL SSDAC is_____ ( )

a. Short Open b. Open Short c. Short short d. Open Open

23) The push button and SM's Key are connect_____in CEL SSDAC ( )

a. Series b. Parallel c. Independent d. None

24) Tx coil voltage is_____in CEL SSDAC ( )

a. 30 – 40 v b. 40 – 50 v c. 50 – 60 v d. 60 – 70 v

25) The GG Tronics SSDAC system can be configurable as_____ ( )

a. 2DP 1S b. 3DP 1S c. 3DP 2S d. All

26) The baud rate for communication between SF & EF units is_____ in GGTronics SSDAC ( )

a. 300 bps b. 600 bps c. 900 bps d. 1200 bps

27) ___Frequencies are used for driving Axle detectors in GG Tronics SSDAC ( )

a. 21 & 23 KHz b. 21 & 25 KHz c. 21 & 27 KHz d. 30 & 31 KHz

28) ____Principle is used in sensing passage of wheel in GG Tronics SSDAC ( )
a. Amplitude Modulation b. Phase Reversal
c. Both A & B d. Current Damping

29) The Axle detectors can sense up to____Kmph in GG Tronics SSDAC ( )
a. 140 b. 160 c. 200 d. 250

30) The system senses wheels above_____dia in GG Tronics SSDAC ( )
a. 400 mm b. 450 mm c. 500 mm d. 550 mm

31) Two consecutive motor trolleys entering the same section with in a time gap of more than____seconds are allowed in GG Tronics SSDAC ( )
a. 3 b. 4 c. 5 d. 6

32) If one field unit is Reset and the second one is not Reset within___minutes The Reset initiation will be automatically cancelled in GG Tronics SSDAC ( )
a. 3 b. 4 c. 5 d. 6

33) The voltage window circuit ensures that the Reset potential is maintained within the limits of_____in GG Tronic SSDAC ( )
a. 40 – 48 v b. 38 – 48 v c. 36 – 50 v d. 36 – 52 v

34) GG Tronics SSDAC mother board will have____No. of slots ( )
a. 7 b. 8 c. 9 d. 10

35) When train speed is 250 Kmph then the pulse width will be____milli sec in GG Tronics SSDAC ( )
a. 2 b. 2.2 c. 2.4 d. 2.6

36) Frequency of scanning by processor for PD signal is___times for every wheel in GG Tronics SSDAC ( )
a. 4 b. 5 c. 6 d. 7

37) Under no wheel TX & RX signals will be_____out of phase in GG Tronics SSDAC ( )
a. 90 Degrees b. 120 Degrees c. 180 Degrees d. 360 Degrees

38) Under wheel condition RX Phase signal voltage will be_____ in GG Tronics SSDAC ( )
a. < 1 v b. < 1.5 v c. < 1.8 v d. <2 v

39) Start Fed CPU-1 will have an address of____in GG Tronics SSDAC ( )
a. 01 h b. 02 h c. 03 h d. 04 h

40) Start Fed CPU-2 will have an address of____in GG Tronics SSDAC ( )
a. 01 h b. 02 h c. 03 h d. 04 h

41) End Fed CPU-1 will have an address of____in GG Tronics SSDAC ( )
a. 01 h b. 02 h c. 03 h d. 04 h

42) End Fed CPU-2 will have an address of __ _ in GG Tronics SSDAC ( )
a. 01 h b. 02 h c. 03 h d. 04 h

43) Start Fed configuration is___in GG Tronics SSDAC ( )
a. 01 h b. 02 h c. 03 h d. 04 h

44) End Fed configuration is___in GG Tronics SSDAC ( )
a. 01 h b. 02 h c. 03 h d. 04 h

45) CPU address has to set from links_____to_____for GG Tronics SSDAC ( )
a. LK 17 – LK 10 b. LK 18 – LK 11
c. LK 25 – LK 18 d. LK 26 – LK 17

46) System configuration has to set from links___to___for GG Tronics SSDAC ( )
a. LK 17 – LK 10 b. LK 18 – LK 11
c. LK 25 – LK 18 d. LK 26 – LK 17

47) The RX signal voltage is___when there is no wheel in GG Tronics SSDAC ( )
a. 900 mv – 1.2 v b. 800 mv – 1.2 v
c. 1 v – 1.2 v d. 1.2 v – 1.4

48) Wheel main & Wheel sec voltage will drop to_____volts when wheel is passing in GG Tronics SSDAC ( )
a. < 100 mv b. < 120 mv c. < 140 mv d. < 160 mv

49) SUP Level voltage is_____in GG Tronics SSDAC when there is no wheel ( )
a. 4 – 5 v b. 3 – 3.9 v c. 2 – 3 v d. 1 – 2 v

50) What are the TX frequencies used for Eldyne make MSDAC ( )
a. 21KHZ & 23 KHZ b. 21KHZ & 25 KHZ
c. 31KHZ & 33 KHZ d. 28KHZ & 30.6 KHZ

51) Power consumption for each DP in Eldyne make SSDAC ( )
a. 11.5 w b. 55 w c. 95 w d.135 w

52) In Eldyne Max power consumption for ACE 2 - 10 DP's is ( )
a. 11.5 w b. 55 w c. 95 w d.135 w

53) In Eldyne Max power consumption for ACE 2 - 26 DP's is ( )
a. 11.5 w b. 55 w c. 95 w d.135 w

54) In Eldyne Max power consumption for ACE 2 - 42 DP's is ( )
a. 11.5 w b. 55 w c.95 w d.135 w

55) In Eldyne Range of voltage at DP's is_____ ( )
a. 54 to 120V DC b. 21.5 to 28.8 V AC
c. 30 to 40 V DC d. 36 to 52 V DC

56) In Eldyne maximum communication distance between ACE and DP is_____KM with 60 V DC centralized power supply and 0.9 mm Quad cable ( )
a. 1.5 KM b. 4.2 KM c. 8 KM d.16 KM

57) In Eldyne maximum communication distance between ACE and DP is_____KM with 110 V DC centralized power supply and 0.9 mm Quad cable ( )
a. 1.5 KM b. 4.2 KM c. 8 KM d.16 KM

58) In Eldyne maximum communication distance between ACE and DP is _____ KM with 60 / 110 V DC local power supply and 0.9 mm Quad ( )
a. 1.5 KM b. 4.2 KM c. 8 KM d.16 KM

59) In Eldyne the ACE deals with maximum of_____DP's ( )
a. 10 b. 22 c. 32 d. 40

60) In Eldyne DP's address setting is provided in_____board ( )
a. Digital board b. Analog board c. Mother board d. none

61) In Eldyne MESSAB adjustment is done in_____board ( )
a. Digital board b. Mother board c. Analog board d. none

62) In Eldyne analog wheel pulse is known as_____ ( )
a. MESSAB b. RADIMP c. PEGUE d. None

63) In Eldyne digital wheel pulse is known as_____ ( )
a. MESSAB b. RADIMP c. PEGUE d. None

64) In Eldyne Digital board is also known as _____ board ( )
a. ISDN board b. Communication board
c. CPU d. Mother board

65) In Eldyne Digital board transmits Data to ACE using ___ protocol ( )
a. ISDN b. TCPIP c. Communication d.FSK

66) In Eldyne, power supply unit occupies_____&_____slots of 1st basic sub rack ( )
a. 1st and 4th b. 1st and 2nd c. 1st and 3rd d. 3rd and 4th

67) In Eldyne power supply unit generates_____&_____supplies ( )
a. 5V DC & 12V DC b. 5V, 12V, 24V & Iso 15V DC
c. 5V, +12V, -12V, +18V, +24V DC d. 5V,+12V, -12V, +24V DC

68) In Eldyne serial I / O board receives data from_____ ( )
a. Track side equipment b. PDCU
c. ACE d. Parallel I / O board

69) In Eldyne each serial I / O board assigned to maximum_____number of detection points ( )
a. 1 b. 2 c. 3 d. 4

70) Track occupancy information is provided by_____board in Eldyne. ( )
a. Serial I / O board b. Parallel I / O board c. Digital board d. CPU board

71) In Eldyne each parallel I / O module outputs____relay contacts ( )
a. 1 b. 2 c. 3 d. 4

72) In Eldyne manual local reset can be done by using a key switch mounted on the front panel of the_____module ( )
a. Serial I / O b. Parallel I / O c. Power supply d. CPU board

73) In Eldyne Rail contacts (sk) are fixed with_____bolts ( )
a. M8 b. M10 c. M12 d. M14

74) In Eldyne spanner used to tight the rail contacts is_____ ( )
a. 13mm b. 14mm c. 12mm d. 10mm

75) In Eldyne_____torque is to be applied for fixing of Rail contacts ( )
a. 25 Nm b. 45 Nm c. 35 Nm d. 15 Nm

76) In Eldyne MESSAB adjustment is done with_____potentiometer ( )
a. R1 b. R2 c. R3 d. R4

77) PEGUE adjustment in Eldyne is done with_____potentiometer ( )
a. R1 b. R2 c. R3 d. R4

78) In Eldyne drill bit size for making holes of Rail contacts ( )
a. 13mm b. 14mm c. 12mm d. 11mm

79) In Eldyne_____number of wires are connected between PDCU and track side electronic equipment ( )
a. 2 b. 3 c. 4 d. 5

80) In Eldyne serial interface of diagnostic PC is connected to_____ ( )
a. Left side PC b. Right side PC c. Both d. None

81) In Eldyne ethernet interface of diagnostic PC is connected to_____ ( )
a. Left side PC b. Right side PC c. Both d. None

82) Eldyne make rail contacts will monitor up to a train speed of_____kmph ( )
a. 250 kmph b.300 kmph c. 350 kmph d. 380 kmph

83) In Eldyne recttifiedRX1 voltage (MESSAB1) without dummy wheel is_____( )
a. + 80 --------- + 1000 mV b. – 80 ---------- –1000 mV
c. + 40 ---------- + 1000 mV d. – 40 ---------- –1000 mV

84) In Eldyne rectifiedRX1 voltage (MESSAB1) with dummy wheel is_____ ( )
a. + 80 --------- + 1000 mV b. – 80 ---------- –1000 mV
c. + 40 ---------- + 1000 mV d. – 40 ---------- –1000 mV

85) In Eldyne transmitter coil SK , voltage is_____ ( )
a. 40 to 85V AC b. 30 to 40V AC c. 60 to 80V AC d.30V AC

86) Superimposed power and data line are connected to_____terminals at EAK in Eldyne ( )
a. 3, 13 b. 2, 12 c.1, 10 d. 2, 3

87) _____&_____terminals are shorted if same pair of conductors is used for super imposed data and power supply is used to EAK in Eldyne ( )
a. 2 & 1, 12 & 11 b. 2 &1, 13 & 3 c. 3 & 4, 12 & 11 d. 3 & 4, 13 & 3

88) In Eldyne if separate power supply is used for installation at EAK _____ terminals are used for communication link ( )
a. 3 & 13 b. 2 & 1 c. 1 & 11 d. 3 & 4

89) In Eldyne, if separate power supply is used for installation at EAK _____ terminals are used for connecting power supply ( )
a. 3 & 13 b. 2 & 1 c. 1 & 11 d. 3 & 4

90) The EAK has to be connected to the earth with a copper cable of minimum _____ sq. mm in Eldyne ( )
a. 25 sq.mm. b. 16 sq.mm. c. 10 sq.mm. d. 6 sq.mm.

91) In Eldyne the EAK housing has to be earthed with the earth resistance of _____ohm ( )
a. 1 b. 10 c. Less than 4 d. 5

92) _____diode is provided across Vital Relay in Eldyne ( )
a. IN 4007 b. IN 2804 c. IN 5408 d. BY 127

93) One parallel I / O board monitors_____track sections in Eldyne ( )
a. 1 b. 2 c. 3 d. 4

94) In Eldyne PDCU is_____between outdoor equipment (DP) and indoor equipment (ACE) ( )
a. Interface b. Interconnection c. Mediator d. None

95) In Eldyne_____mA fuse is provided inside PDCU ( )
a. 315 mA b. 680 mA c. 1A d. 2A

96) In Eldyne resetting pulse duration is_____sec ( )
a. 3 sec b. 4 sec c. 5 sec d. 2 sec

97) In Eldyne_____mA fuse is provided in Reset box ( )

a. 500 mA b. 315 mA c. 680 mA d. 1 A

98) In Eldyne fuse provided in Reset box is of_____type ( )

a. Fast blown glass fuse b. Slow blown glass fuse

c. HRC fuse d. Knife edge fuse

99) In Eldyne dummy wheel should be set at_____mm for testing ( )

a. 20mm b. 30mm c. 40mm d. 50mm

ANSWERS KEY

1	2	3	4	5	6	7	8	9	10
d	a	c	c	d	d	c	b	c	d
11	12	13	14	15	16	17	18	19	20
b	a	d	c	c	a	c	d	a	d
21	22	23	24	25	26	27	28	29	30
a	b	a	a	a	d	b	b	b	d
31	32	33	34	35	36	37	38	39	40
d	d	c	d	d	b	d	c	a	A
41	42	43	44	45	46	47	48	49	50
b	c	d	a	b	a	c	a	a	A
51	52	53	54	55	56	57	58	59	60
d	a	b	c	d	a	a	b	c	C
61	62	63	64	65	66	67	68	69	70
c	c	a	b	a	a	a	a	a	B
71	72	73	74	75	76	77	78	79	80
b	b	b	a	a	a	b	a	a	A
81	82	83	84	85	86	87	88	89	90
a	b	d	a	b	a	a	a	a	C
91	92	93	94	95	96	97	98	99	100
a	c	a	a	a	a	a	a	b	C

SINGLE LINE TOKEN LESS BLOCK INSTRUMENT

1) S/L Handle type Daido B/I carrier frequencies are_____ ( )
   a. 65 Hz & 85 Hz b. 1800 Hz & 2700 Hz
   c. 21 KHz & 23 KHz d. 5 KHz

2) Tx & Rx unit's carrier frequencies of Daido block at same station should be _ ( )
   a. different b. same c. both d. none

3) Tx unit of one station & Rx unit of other end station carrier frequencies of Daido block instrument should be_____ ( )
   a. different b. same c. both d. none

4) S/L Handle type Daido B/I modulated frequencies are_____ ( )
   a. 65 Hz & 85 Hz b. 1800 Hz & 2700 Hz
   c. 21 KHz & 23 KHz d. 5 KHz

5) In S/L Handle type Daido B/I,_____modulated frequency is required for turning B/H from Line Closed to Train Going To position ( )
   a. 65 Hz b. 85 Hz c. 1800 Hz d. 2700 Hz

6) In S/L Handle type Daido B/I,_____modulated frequency is required for turning B/H from Line Closed to Train Coming From position ( )
   a. 65 Hz b. 85 Hz c. 1800 Hz d. 2700 Hz

7) In S/L Handle type Daido B/I,_____modulated frequency is required for turning B/H from Train Coming From to Line Closed position ( )
   a. 65 Hz b. 85 Hz c. 1800 Hz d. 2700 Hz

8) In S/L Handle type Daido B/I,_____modulated frequency is required for turning B/H from Train Going Towards to Line Closed position ( )
   a. 65 Hz b. 85 Hz c. 1800 Hz d. 2700 Hz

9) In S/L Handle type Daido B/I,_____modulated frequency is required for Auto TOL code transmission ( )
   a. 65 Hz b. 85 Hz c. 1800 Hz d. 2700 Hz

10) In S/L Handle type Daido B/I,___relay ensures one Line Clear One Train ( )
   a. TELR b. TOLR c. TRSR d. PBPR

11) In S/L Handle type Daido B/I,_____relay picks up at the same station when PB1 & PB2 are pressed simultaneously ( )
a. BLR b. NR c. PBPR d. none

12) In S/L Handle type Daido B/I,_____relay picks up at the other end station when PB1 & PB2 are pressed simultaneously. ( )
a. BLR b. NR c. PBPR d. none

13) In S/L Handle type Daido B/I,_____relay picks up at the same station when PB1 is pressed for bell beat exchange ( )
a. BLR b. NR c. PBPR d. none

14) In S/L Handle type Daido B/I,_____relay picks up at the other end station when PB1 is pressed for bell beat exchange ( )
a. BLR b. NR c. PBPR d. none

15) In S/L Handle type Daido B/I,_____relay picks up at the same station when PB1 is pressed for TOL code acknowledgement ( )
a. BLR b. NR c. PBPR d. none

16) In S/L Handle type Daido B/I,_____relay picks up at the other end station when PB1 is pressed for TOL code acknowledgement ( )
a. BLR b. NR c. PBPR d. none

17) In Daido B/I, The carrier frequencies of TX & RX units at one end should be. ( )
a) same b) different c) a & b d) none

18) In Daido Block Inst,____polarity extends on line when PB1 is pressed for TOL code acknowledgement ( )
a. + ve b. – ve c. both d. none

19) In Daido Block Inst,____polarity extends on line when PB1 is pressed for bell beat exchange signals ( )
a. + ve b. – ve c. both d. none

20) In Daido Block Inst,____polarity extends on line when PB1 & PB2 are pressed simultaneously. ( )
a. + ve b. – ve c. both d. none

21) In Daido Block Inst, TOL buzzer appears at train_____end ( )
a. sending b. receiving c. both d. none

22) In Daido Block Inst, shunt key can be extracted in_____position ( )
a. TCF or (TCF + TOL) b. TGT or (TGT + TOL)
c. LINE CLOSED or (TCF + TOL) d. LINE COSED or TGT

23) The normal line working current in Daido block instrument is_____ ( )
a. 17 mA b. 25 mA c. 60 mA d. 110 mA

24) The Normal operating voltage (local supply) of handle type FM coded DAIDO single line token less block instrument is_____DC ( )
a. 12v b. 24v c. 60v d. 110v

25) In Daido block instt., the line supply will be____ ( )
a. 24v DC + line drop b. 30v DC c. 36v DC d. 24v DC

26) S/line token less Daido block instt. is suitable in_____area ( )
a. both RE & non-RE b. only non- RE c. only RE d. none

27) S/line token less Daido block instt. is_____type for normal train operations ( )
a. non- cooperative b. cooperative c. both d. none

28) S/line token less Daido block instt. is_____for cancellation operations ( )
a. non-cooperative b. cooperative c. both d. none

29) S/line token less Daido block instrument POH is_____ ( )
a. once in 10 years b. once in 7 years c. both d. none

30) S/line token less Daido block instrument working principle is_____ ( )
a. AC impulse code b. DC impulse code
c. AC & DC impulse codes d. Frequency modulated

31) S1 switch is used for____cancellation operation in Daido block instrument ( )
a. normal b. push back c. both d. none

32) S2 switch is used for____cancellation operation in Daido block instrument ( )
a. normal b. push back c. both d. none

33) In Daido block inst., time release indicator operates when___operated ( )
a. S1 switch b. S2 switch c. both d. none

34) Separate power supply is_____for telephone circuit in Daido block inst. ( )
a. not required b. required c. both d. none

35) In Daido block inst.,____is pressed for bell beat exchange signals ( )
a. PB1 b. PB2 c. both d. none

36) In Daido block inst.,____is pressed for TOL code acknowledgement ( )
a. PB1 b. PB2 c. both d. none

37) In Daido block inst.,____is pressed for extending co-operation ( )
a. PB1 b. PB2 c. both d. none

38) In Daido block inst.,____relay picks up in a line circuit ( )
a. BLR b. NR c. a or b d. none

39) In Daido block inst.,____relay picks up in local circuit ( )
a. 1R b. 1TPR c. both d. none

40) BLR & NR are of___type relays provided in Daido block inst. ( )
a. QB3 b. QNA1 c. QL1 d. QBA1

41) 1R & 1TPR are of___type relays provided in Daido block inst. ( )
a. QB3 b. QNA1 c. QL1 d. QBA1

42) In Daido block inst., TOL indicator is of___type indicator ( )
a. magnetic latch b. polarized c. neutral d. none

43) In Daido block inst., time release indicator is of___type indicator ( )
a. magnetic latch b. polarized c. neutral d. none

44) In Daido block inst., galvo is of___type indicator ( )
a. magnetic latch b. polarized c. neutral d. none

45) In Daido block inst., total line circuits are_____ ( )
a. 2 b. 3 c. 4 d. none

46) In Daido block inst., total power supplies required are_____ ( )
a. 2 b. 3 c. 4 d. none

47) In Daido block inst., minimum line wires required to connect in non-RE is___( )
a. 1 b. 2 c. 3 d. none

48) In Daido block inst., minimum_____of line wires required to connect in RE___( )
a. 1 pair b. 2 pairs c. 3 pairs d. none

49) When SM's key is removed in Daido block inst.,_____possible ( )
a. for extending co-operation b. incoming bell beats
c. for extraction of shunt key d. S1 or S2 operation

50) When SM's key is removed in Daido block inst.,_____possible ( )
a. auto TOL code transmission b. auto TOL code reception
c. incoming bell beats d. all

ANSWERS KEY

1	2	3	4	5	6	7	8	9	10
b	a	b	a	a	b	b	b	a	C
11	12	13	14	15	16	17	18	19	20
c	b	d	a	c	b	b	a	b	A
21	22	23	24	25	26	27	28	29	30
c	d	d	b	a	a	b	b	b	D
31	32	33	34	35	36	37	38	39	40
a	b	a	a	a	a	c	c	c	D
41	42	43	44	45	46	47	48	49	50
b	a	a	b	b	b	a	b	b	D

DOUBLE LINE BLOCK INSTRUMENT

1) The resistance of a door lock coil in PTJ make SGE block instrument ( )
   a. 140 ohms b. 50 ohms c. 400 ohms d. 48 ohms

2) The bell coil resistance in PTJ make SGE block instrument ( )
   a. 140 ohms b. 50 ohms c. 400 ohms d. 48 ohms

3) The up/down line indicator coil resistance in PTJ make SGE block instrument ( )
   a. 140 ohms b. 50 ohms c. 400 ohms d. 48 ohms

4) The bell line relay coil resistance in PTJ make SGE block instrument ( )
   a. 140 ohms b. 50 ohms c. 400 ohms d. 48 ohms

5) In train arrival circuit in double line_____are used ( )
   a. Two track circuits' b. Axle counters
   c. Last vehicle check device d. Treadle contact

6) One line clear one train movement in SGE D/L B/I is ensured by ( )
   a. FVTR b. SR1, SR2 c. ASR d. LCPR

7) Minimum number of line conductors required for D/L B/I in non-RE area are ( )
   a. 1 b. 2 c. 3 d. 4

8) No. of bands in commutator is_____for SGE DLBI ( )
   a. 2 b. 4 c. 6 d. 8

9) 1st band of commutator is used in_____circuit of SGE DLBI ( )
   a. SR_1,SR_2 b. LCPR c. GNSR d. LSS DR

10) In SGE DLBI, GNSR relay picks up when block handle is turned to_____ ( )
   a. Line Closed b. TOL c. LC d. none

11) In SGE DLBI, GNSR relay drops when block handle is turned to_____ ( )
   a. Line Closed b. TOL c. LC d. none

12) One line clear one train feature is achieved by_____Relays in SGE DLBI ( )
   a. SR_1, SR_2 b. LCPR, GNSR c. LSS PR, DECR d. None

13) SR_1 and SR_2 relays are provided with_____type of Relay in SGE DLBI ( )
   a. QN1 b. QBA1 c. QNA1 d. QBCA1

14) Normally SR_1 and SR_2 relays are in_____condition of SGE DLBI ( )
   a. dropped b. pick up c. both d. none

15) Initially SR_1 and SR_2 relays picks up with_____PR relay in SGE DLBI ( )
   a. line closed contact b. TOL contact c. LC contact d. none

16) Commutator is locked when Block handle is turned from____to____ ( )
   a. Line closed to TOL b. Line clear to Line closed
   c. Line clear to TOL d. Line closed to Line clear

17) Periodicity of overhauling for SGE DLBI is_____ ( )
a. 7 Years b. 10Years c. 12 Years d. No Overhauling

18) In SGE DLBI, Top indicator refers as_____ ( )
a. TCF Indicator b. TGT Indicator
c. Line closed Indicator d. None

19) In SGE DLBI, Bottom indicator refers as_____ ( )
a. TCF Indicator b. TGT Indicator
c. Line closed Indicator d. None

20) In DLBI, line clear is given at_____station ( )
a. Train sending station b. Train Receiving Station
c. At Both Stations d. None

21) In block clearance circuit of SGE DLBI,___relay normally in Pick Up condition( )
a. ZR1 b. ZR2 c. ZR3 d. none

22) In SGE DLBI, ZR3 relay drops when block handle is turned to_____ ( )
a. Line Closed b. TOL c. LC d. none

23) In SGE DLBI, ZR3 relay picks up on arrival of train when block handle is in___( )
a. Line Closed b. TOL c. LC d. none

24) In DLBI, once ZR3 relay picks up, it remains in up condition with___band ( )
a. Line Closed b. TOL c. LC d. TOL/LB

25) ZR2 is to be provided with_____feature ( )
a. Slow to Pick up b. Slow to Release
c. Both d. None

26) If pre-mature TOL is done in SGE DLBI, the LSS aspect_____ ( )
a. changes to RG b. remains same DG c. becomes blank d. none

27) In SGE DLBI, if train is arrived when block handle is in LC position, then_____( )
a. block inst. fails b. block inst will not fail c. both d. none

28) In SGE DLBI, if Home signal RG gets blank on arrival of train, then_____ ( )
a. block inst. fails b. block inst will not fail c. both d. none

29) The Block instrument earth value should be not more than_____ ( )
a. 1Ω b. 5Ω c. 10Ω d. 12Ω

30) Block earths are measured once in____ ( )
a. 1 Year b. 2 Years c. 6 months d. 3 months

31) To open DLBI cover_____is required to be given ( )
a. without consent memo b. with consent memo
c. disconnection memo d. none

32) SGE DLBI is provided with_____arrangement ( )
a. double locking b. sealing c. both d. none

33) In SGE DLBI, top indicator is interconnected with ___ in the same block ( )
a. bottom indicator b. polarized relay c. block handle d. none

34) In SGE DLBI, bottom indicator is interconnected with ___ in the same block ( )
a. top indicator b. polarized relay c. block handle d. none

35) In SGE DLBI, bottom indicator is interconnected with_____of other block inst. ( )
a. top indicator b. polarized relay c. block handle d. none

36) In SGE DLBI, the total numbers of line circuits are_____. ( )
a. 2 b. 3 c. 4 d. 5

37) In SGE DLBI, the total number of power supplies required at a station are____( )
a. 2 b. 3 c. 4 d. 5

38) In SGE DLBI, a separate power supply is_____for telephone circuit ( )
a. not required b. required c. both d. none

39) When SM's key is taken out in SGE DLBI,_____is not possible ( )
a. block handle operation b. bell plunger operation c. both d. none

40) AC immunity value of PR is_____V AC ( )
a. 50V AC b. 300V AC c. 1000V AC d. 10V AC

41) Resistance of Choke (S1) is_____ohms in Block unit ( )
a. 40000Ω b. 20000Ω c. 40Ω d. 50Ω

42) Resistance of Choke (S2) is_____ohms in Block unit ( )
a. 40000Ω b. 20000Ω c. 40Ω d. 50Ω

43) Impedance of Choke (S1) is_____ohms in Block unit ( )
a. 40000Ω b. 20000Ω c. 40Ω d. 50Ω

44) Impedance of Choke (S2) is_____ohms in Block unit ( )
a. 40000Ω b. 20000Ω c. 40Ω d. 50Ω

45) Filter unit is used for_____line circuits Block instrument ( )
a. bell b. telephone c. indication d. None

46) Filter unit for Block instrument is provided to block_____voltage ( )
a. AC induced Voltage b. DC Voltage
c. Both d. None

47) DLBI in RE, bell line circuit is connected with_____to remove induced voltage ( )
a. Isolation transformer b. Filter unit
c. Both d. None

48) In DLBI, block handle locks initially at___position while turning towards TOL ( )

a. full notch b. half notch c. Line Closed d. TOL

49) In DLBI,_____contacts makes when bell plunger is not pressed ( )

a. B, L b. B, R c. L, R d. V, L

50) ____pairs of line wires required for connecting both the DLBIs in RE area ( )

a. one b. two c. three d. four

ANSWERS KEY

1	2	3	4	5	6	7	8	9	10
b	d	a	c	a	b	c	c	c	C
11	12	13	14	15	16	17	18	19	20
a	a	c	b	b	c	a	b	a	B
21	22	23	24	25	26	27	28	29	30
c	c	b	d	b	b	b	a	c	A
31	32	33	34	35	36	37	38	39	40
c	c	b	c	a	c	c	b	c	D
41	42	43	44	45	46	47	48	49	50
d	c	a	b	c	a	a	b	c	B

UFSBI & SSBPAC

1) UFSBI works in_____media ( )
a. Quad only b. OFC only c. both a & b d. none

2) UFSBI works in_____. ( )
a. RE & Non RE b. Single line c. Double line d. All

3) Output 2 relay is_____in UFSBI. ( )
a. TGTZR b. TCFXR c. TCFCR d. ASGNCPR

4) Output 3 relay is_____in UFSBI. ( )
a. TGTZR b. TCFZR c. TCFCR d. ASGNCPR

5) Output 4 relay is_____in UFSBI ( )
a. TGTZR b. TCFZR c. TCFCR d. TGTYR

6) Output 5 relay is_____in UFSBI. ( )
a. BLR b. TCFZR c. TGTZR d. ASGNCPR

7) Output 6 relay is_____ in UFSBI. ( )
a. TGTZR b. TCFZR c. TCFCR d. TGTYR

8) Output 7 relay is_____in UFSBI. ( )
a. ASGNCPR b. BLR c. TGTZR d. TGTYR

9) UFSBI works with_____in UFSBI. ( )
a. 1 out of 1 logic b. 2 out of 2 logic c. 2 out of 3 logic d. All

10) _____number of inputs that can be given to each input card in UFSBI ( )
a. 08 b. 16 c. 24 d. 36

11) Maximum no. of outputs that can be taken from each output card in UFSBI ( )
a. 16 b. 24 c. 08 d. 36

12) _____Number of Input cards are available in UFSBI ( )
a. 6 b. 2 c. 4 d. 8

13) One Line Clear One train feature in UFSBI is achieved by____relay. ( )
a. VPR b. BTSR c. TGTZR d. ASCR

14) Number of Output cards in UFSBI ( )
a. 4 b. 1 c. 2 d. 3

15) Output voltages of DC DC converter in UFSBI ( )
a. +5V, +12V, -12V, +24V b. +5V, +18V, +12V, +24V
c. +5V, +12V, -12V, +18V d. +5V, +12V, Isol. 15V, +24V

16) _____relays are latched relays in UFSBI ( )
a. TGTZR, TGTXR b. TCFR, TGTR
c. TCFXR, TCFZR d. TGTYR, TGTPR

17) _____number of quads are required for working of UFSBI in Single Line along with BPAC ( )

a. ½ quad b. 2+½ quad c. 1+½ quad d. 2 quad

18) SNK indication appears when___relays are in picked up condition in UFSBI ( )

a. ASGNCPR b. ASGNCR & HSGNCR

c. ASGNCR d. HSGNCR

19) In Cancellation procedure; counter is incremented at_____. ( )

a. Sending station b. TGT station

c. TCF station d. both stations

20) _____number of quads are required for working of UFSBI in Double line along with Up & Down BPAC ( )

a. ½ quad b. 2+½ quad c. 1+½ quad d. 2 quad

21) The read back contacts of BIPR 1 & BIPR 2 in UFSBI connected to___card. ( )

a. input b. Output c.CPU d. CCC

22) The read back contacts of output relays are connected to_____card in UFSBI. ( )

a. input b. Output c. CPU d. CCC

23) Opto isolators are provided in_____card of UFSBI. ( )

a. input b. Output c. CPU d. CCC

24) Input de bouncing circuit is provided in_____card of UFSBI. ( )

a. input b. Output c. CPU d. CCC

25) CRC code is added in_____card of UFSBI. ( )

a. input b. Output c. CPU d. CCC

26) 2 out of 3 logic hardware is provided in_____card of UFSBI. ( )

a. input b. Output c. CPU d. CCC

27) The baud rate of the modem which is provided in UFSBI is_____bps. ( )

a.300 b.1200 c. 2400 d. 4800

28) In UFSBI mother board; in 9 pin data connector_____pins are wired. ( )

a. 3, 4 & 8 b. 1, 2 & 8 c. 2, 3 & 4 d. 3, 4 & 5

29) UFSBI address setting is done in_____. ( )

a. CPU card b.CCC card c. Output card d. Mother Board

30) Modem card converts the data from RS 232 to_____frequency in UFSBI. ( )

a. Audio b. Radio c. Voice d. Ultra high

31) The modem used in UFSBI is_____wire. ( )

a. 2 b. 3 c. 4 d. 5

32) How many Q series relays are provided inside UFSBI in single line working. ( )

a. 29 b. 30 c. 31 d. 32

33) How many Q series relays are provided inside UFSBI in double line working. ( )
a. 29 b. 30 c. 31 d. 32

34) How many QNA1 relays are provided inside UFSBI in single line working? ( )
a. 4 b. 5 c. 6 d. 7

35) How many QNA1 relays are provided inside UFSBI in double line working? ( )
a. 4 b. 5 c. 6 d. 7

36) BIPR 1 and BIPR 2 are called as_____relays in UFSBI. ( )
a. Input b. Output c. Read back d. Health checking

37) Output relays are of_____type in UFSBI. ( )
a. QN1 b. QNA1 c. QNN1 d. QL1

38) _____ohms of isolation transformer has to be connected to UFSBI side. ( )
a. 1120 b. 470 c. 600 d. 1200

39) ___ohms of isolation transformer has to be connected to cable side in UFSBI. ( )
a. 1120 b. 470 c. 600 d. 1200

40) Error code 10, 20 comes under_____in UFSBI. ( )
a. Input complementary failure b. Output complementary failure
c. BIPR 1 complementary failure d. Output forced pickup

41) Error code 18, 28 comes under_____in UFSBI. ( )
a. Input complementary failure b. Output complementary failure
c. BIPR 1 complementary failure d. Output forced pickup

42) Error code 30, 31 comes under_____in UFSBI. ( )
a. Input complementary failure b. Output complementary failure
c. BIPR 1 complementary failure d. Output forced pickup

43) Error code 33 is_____in UFSBI. ( )
a. link fail b. RSSB mode c. IN Jitter d. Out Jitter

44) Error code 37-39 are_____in UFSBI. ( )
a. link fail b. RSSB mode c. CPU bad d. UFSBI address bad

45) Error code 92 is_____in UFSBI. ( )
a. link fail b. RSSB mode c. CPU bad d. UFSBI address bad

46) Error code 34 is_____in UFSBI. ( )
a. link fail b. RSSB mode c. CPU bad d. UFSBI address bad

47) How many 24 volts DC supplies are available in UFSBI? ( )
a. 1 b. 2 c. 3 d. 4

48) When error code 37 is displayed on CPU card, then_____indication appears on alarm panel of UFSBI. ( )
a. Single CPU fail b. redundant DC-DC fail
c. System fail d. Link fail

49) When error code 15 is displayed on CPU card, then_____indication appears on alarm panel of UFSBI. ( )
a. Single CPU fail b. DC-DC fail c. System fail d. Link fail

50) When any one 5V supply is faulty, then_____indication appears on alarm panel of UFSBI. ( )
a. Single CPU fail b. DC-DC fail c. System fail d. Link fail

51) SSBPAC of Medha works on_____logic. ( )
a. 1 out of 1 b. 1 out of 2 c. 2 out of 2 d. 2 out of 3

52) SSBPAC of Medha will have_____No of cards. ( )
a. 10 b. 11 c. 12 d. 13

53) SSBPAC of Medha will have_____no of Power supply card. ( )
a. 1 b. 2 c. 3 d. 4

54) 2 out of 3 decisions will be taken by_____card in Medha SSBPAC. ( )
a. vital input b. Vital output c. CPU d. Voter module

55) _____are the Health checking relays in Medha SSBPAC. ( )
a. BI PR-1 & BIPR-2 b. HCR -1 & HCR-2
c. VCOR-1 & VCOR-2 d. VR1 & VR2

56) _____are the latch relays in Medha SSBPAC. ( )
a. TGTR & TCFR b. ASCR c. HS GNCR d. VCOR1 / VCOR2

57) For health checking_____type of relay is used in Medha SSBPAC. ( )
a. QL1 b. QN1 c. QNA1 d. QNN1

58) The input contacts are isolated from the CPU data line by using_____in Medha SSBPAC. ( )
a. opto-isolators b. Transformers c. Galvanic isolators d. None

59) The vital output card receives vital output from___card in Medha SSBPAC ( )
a. CPU card b. Modem card c. Voter module d. Non vital output card.

60) The voter module gives the majority voted output for_____in medha SSBPAC. ( )
a. Vital output card b. Non vital output card c. both d. none.

61) The functionality of the modem card is to take the data from_____card ( )
a. CPU b. Voters module c. vital output d. Non vital output

62) The Event logger card is interfaced to all the CPU's through_____in Medha SSBPAC. ( )
a. CAN Bus b. Serial Communication
c. parallel communication d. both B & C.

63) For Medha SSBPAC_____provides the necessary interface between all the cards in the system. ( )
a. Back Plane b. Keying Plugs
c. Mother board d. Connecter Assembly.

64) User Interface unit contains_____in Medha SSBPAC. ( )
a. User start button b. Buzzer Acknowledge button
c. clear Fault button d. All

65) In Medha SSBPAC Configuration jumper setting is done in_____. ( )
a. CPU cards b. Input Cards
c. Voter module card d. Mother Board.

66) In Medha SSBPAC for inter block communication both self ID and remote ID need to be set in the_____card. ( )
a. CPU cards b. Input cards c. voter module card d. Back plane

67) System ID setting consists of_____jumper in Medha SSBPAC. ( )
a. 2 Nos b. 4 Nos c. 8 Nos d. 16 Nos.

68) Modem card in Medha SSBPAC is of_____communication. ( )
a. Simplex b. full duplex c. half duplex d. One way.

69) The modem Baud rate is_____in Medha SSBPAC ( )
a. 300 b. 600 c. 1200 d. 2400

70) To configure modem to Master mode, jumper 1 & 2 and 3 & 4 should be _____in Medha SSBPAC. ( )
a. Short, Open b. Short, Short c. Open, Short d. Open, Open

71) To configure modem in slave mode, jumper 1 & 2 and 3 & 4 should be _____in Medha SSBPAC. ( )
a. Short, Open b. Short, Short c. Open, Short d. Open, Open

72) Panel out puts are driven through_____cards in Medha SSBPAC. ( )
a. Vital output card b. Non vital output card c. voter module card d. Modem card

73) Output-1 Relay is_____in Medha SSBPAC. ( )
a. TGTR b. TGTRY c. TCFR d. TCFRY.

74) Output -2 relay is_____in Medha SSBPAC. ( )
a. TGTR b. TGTRY c. TCFR d. TCFRY

75) Output-3 relay is_____in Medha SSBPAC. ( )
a. TGTR b. TGTRY c. TCFR d. TCFRY

76) Output -4 relay is_____in Medha SSBPAC. ( )
a. TGTR b. TGTRY c. TCFR d. TCFRY

77) Output -5 relay is_____in Medha SSBPAC. ( )
a. TGTR b. TCFR c. ASCR d. REP-1

78) Output-6 relay is_____in Medha SSBPAC. ( )
a. REP-1 b. REP-2 c. ASCR d. TGTR

79) Output-7 relay is_____in Medha SSBPAC. ( )
a. REP-1 b. Rep-2 c. ASCR d. TGTR

80) Feedback inputs are connected to_____cards in Medha SSBPAC. ( )
a. CPU b. vital input c. vital output d. Non vital Output

81) Two vital cut off relays are incorporated in the system to increase the system _____in Medha SSBPAC. ( )
a. Redundancy b. Safety c. Availability d. Functionality.

82) The communication from modem in the local system to the modem in the remote system is established through_____interface in Medha SSBPAC. ( )
a. 2 wire b. 4 wire c. Fsk d. none.

83) For OFC communication_____interface is provided in Medha SSBPAC. ( )
a. RS232 b. RS485 c. RS 422 d. RS 222

84) LCD screen is used to display_____in Medha SSBPAC. ( )
a. Fault codes b. Software versions c. Checksum d. All

85) The Power supply card provides an output of_____in Medha SSBPAC. ( )
a.4.5V b. 6.2 V c. Both a & b d. 5.8 V

86) 6.2 V is used for_____card in Medha SSBPAC. ( )
a. Processor b. Voter module c. Event logger d. output.

87) The range of input supply that can be given to Medha SSBPAC is_____. ( )
a. 19.2-31.2 V b. 19.2 - 28.8 V c. 21.6 - 28.8 V d. 21.6 - 31.2 V

88) The modem voltage is_____for Medha SSBPAC. ( )
a. > 350 mV b. < 350mV c. > 135 mV d. < 135 mV

89) Each CPU module contains____Kb of program memory in Medha SSBPAC. ( )
a. 64 b. 128 c. 256 d. 512

90) Each CPU module contains_____serial ports for inter processor communication in Medha SSBPAC. ( )
a. One b. two c. three d. Four

91) Each CPU module contains_____serial ports for inter block communication in Medha SSBPAC. ( )
a. One b. two c. three d. Four

92) Efftronics SSBPAC consists of_____number of cards ( )
a.10 b.11 c.12 d.13

93) Each input module will have_____number of opto- isolated digital inputs in Efftronics SSBPAC. ( )
a. 8 b.16 c.32 d.60

94) Inputs are diverted to different routes by_____card in Efftronics SSBPAC. ( )
a. Input b. Modem c. Scrambler d. CPU

95) GPS time synchronization is provided in_____card of Efftronics SSBPAC ( )
a. Input b. Modem c. Scrambler d. CPU

96) Media changeover logic is provided in_____card of Efftronics SSBPAC ( )
a. Communication b. CPU c. Voter module d. Scrambler

97) _____no of outputs can be connected to non vital output card of Efftronics SSBPAC ( )
a. 8 b. 16 c.24 d.32

98) CPS signal toggling is done for every_____minutes in Efftronics SSBPAC ( )
a. 20 b. 30 c. 34 d. 38

99) _____number of outputs can be connected to vital output card in Efftronics SSBPAC ( )
a. 8 b. 12 c. 16 d. 24

100) The maintainer terminal connected to SSBPAC Efftronics can store _____ no of latest error codes. ( )
a.10 b.50 c.100 d.200

ANSWERS KEY

1	2	3	4	5	6	7	8	9	10
c	d	b	c	d	d	a	b	c	a
11	12	13	14	15	16	17	18	19	20
c	a	b	c	a	b	d	b	c	b
21	22	23	24	25	26	27	28	29	30
a	a	a	c	c	b	c	a	d	c
31	32	33	34	35	36	37	38	39	40
c	c	a	c	d	d	a	c	b	a
41	42	43	44	45	46	47	48	49	50
b	c	a	c	d	b	c	a	c	b
51	52	53	54	55	56	57	58	59	60
d	d	b	d	c	a	d	a	c	c
61	62	63	64	65	66	67	68	69	70
b	b	a	d	a	a	d	c	c	a
71	72	73	74	75	76	77	78	79	80
c	b	a	b	c	d	c	a	b	b
81	82	83	84	85	86	87	88	89	90
c	a	a	d	c	c	a	c	d	b
91	92	93	94	95	96	97	98	99	100
a	b	d	c	d	a	c	c	a	c

SIGNALING IN R.E. AREA

1) The minimum Signal clearance should be_____mm in RE area. ( )
   a. 2000 b. 200 c. 20 d. none

2) In RE area normally no part of the signal should lie in_____clearance zone ( )
   a. signal b. electrical c. both d. none

3) In RE area if any part of the signal lies in signal clearance zone but not in electrical clearance zone, then the signal post is provided with____towards OHE mast ( )
   a. iron sreening mesh b. proper earthing for mesh
   c. both a & b d. none

4) The nearest part of the signal post from the CLOT shall be_____ ( )
   a. 3.5 m b. 2.844 m c. 2.5 m d. none

5) The normal implantation of OHE mast from the CLOT shall be_____ ( )
   a. 3.5 m b. 2.844 m c. 2.5 m d. none

6) In RE, the distance between signal and mast in front of it, must not be_____ ( )
   a. less than 3m b. less than 10m c. less than 30m d. none

7) In RE, the distance between signal and mast behind it must be not_____less than if mast is anchored ( )
   a. less than 3m b. less than 10m c. less than 30m d. none

8) In RE, the distance between signal and mast behind it must be not_____less than if mast is not anchored ( )
   a. less than 3m b. less than 10m c. less than 30m d. none

9) Catenary current carrying capacity on double line section in RE area is____ ( )
   a. 500A b. 600A c. 800A d. 1000A

10) Catenary current carrying capacity on single line section in RE area is_____( )
   a. 500A b. 600A c. 800A d. 1000 A

11) ____induction effect can be eliminated in RE area ( )
   a. electro-magnetic b. electro-static c. both d. none

12) ____induction effect can not be eliminated but can be reduced in RE area ( )
   a. electro-magnetic b. electro-static c. both d. none

13) The maximum length of parallelism is permitted for DC circuits on D/L sections in RE area is_____ ( )
   a. 1 Km b. 1.2 Km c. 2.8 Km d. 2.1 Km

14) The maximum length of parallelism is permitted for DC circuits on S/L sections in RE area is_____ ( )
   a. 1 Km b. 1.2 Km c. 2.8 Km d. 2.1 Km

15) Direct feeding range of signals on D/L in new design is_____ ( )
a. 180 m b. 120 m c. 600 m d. 220 m

16) Direct feeding range of signals on S/L in new design is_____ ( )
a. 180 m b. 120 m c. 600 m d. 220 m

17) Stray current shall not exceed____mA for track circuits longer than 100m ( )
a. 1 mA b. 10 mA c. 100 mA d. 1000 mA

18) Stray current shall not exceed____mA for track circuit lengths up to 100m ( )
a. 1 mA b. 10 mA c. 100 mA d. 1000 mA

19) Stray voltage shall not exceed____mV in a track circuit ( )
a. 1 mV b. 10 mV c. 100 mV d. 1000 mV

20) Electrical Point Machine non-trailable type (IRS.24 & Siemen's IA), the A.C. immunity level shall not be less than_____at 50 Hz. ( )
a. 300V b. 160V c. 100V d. none

21) The maximum permissible distance between the machine and contactor unit should be_____on double line sections. ( )
a. 2.4 Km b. 1.6 Km c. 1.1 Km d. 0.91 Km

22) The maximum permissible distance between the machine and contactor unit should be_____on single line sections. ( )
a. 2.4 Km b. 1.6 Km c. 1.1 Km d. 0.91 Km

23) The maximum length of parallelism of a power cable is up to_____ ( )
a. 2.4 Km b. 1.6 Km c. 1.1 Km d. 0.91 Km

24) The other name of isolation transformer is called as_____ ( )
a. 1:1 transformer b. Phantom transformer
c. both a & b d. none

25) The purpose of isolation transformer in RE area is_____ ( )
a. to block induced voltages b. to block line circuit voltages
c. to allow induced voltages d. to isolate induced voltages

26) In RE, isolation transformer_____ohms coil is connected towards line side ( )
a. 1120 b. 470 c. 360 d. 120

27) In RE, isolation transformer_____ohms coil is connected towards block side ( )
a. 1120 b. 470 c. 360 d. 120

28) In RE, isolation transformer_____ohms coil is with centre tapping ( )
a. 1120 b. 470 c. 360 d. 120

29) _____block instrument is not suitable in RE area ( )
a. double line b. push button c. daido d. token

30) Block bell equipment is connected in RE area for the____block instrument ( )
a. double line b. push button c. daido d. none

31) Block bell equipment has_____circuit with 'SO' relay of miniature type ( )
a. oscillator b. rectifier c. both a & b d. none

32) ___frequency sends on line by block bell equipment in double line block in RE ( )
a. 50 Hz b. 150 Hz c. 250 Hz d. 350 Hz

33) The choke coil resistance & impedance value in RE area TC is_____ ( )
a. 3 Ω & 160 Ω b. 4 Ω & 160 Ω c. 3 Ω & 120 Ω d. 4 Ω & 120 Ω

34) The choke in a TC is connected to_____rail side ( )
a. + ve always b. – ve always c. + ve or – ve d. none

35) The purpose of Choke in the TC of RE area is_____ ( )
a. to block induced voltages b. to block TC circuit voltages
c. to allow induced voltages d. to earth induced voltages

36) The first TPR should be of_____type relay only to be used in RE ( )
a. QSRA1 b. QSPA1 c. QBCA1 d. QTA1

37) The normal height of contact wire for regulated OHE above rail level is _ (BG)( )
a. 5.75 m b.5.55 m c. 4.65 m d. None

38) The max. height of contact wire for un-regulated OHE above rail level is _(BG)( )
a. 5.75 m b.5.55 m c. 4.65 m d. None

39) The min. height of contact wire for un-regulated OHE above rail level is _(BG)( )
a. 5.75 m b.5.55 m c. 4.65 m d. None

40) Near traction sub-station, underground cable must be laid in_____ ( )
a. concrete pipe b. GI pipe c. DWC pipe d. All

41) Earth resistance shall not exceed_____for checking stray voltage & current ( )
a. 1 Ω b. 5 Ω c. 10 Ω d. none

42) The safest handling voltage in RE area as per new design is_____ ( )
a. 120V b. 240V c. 300V d. 400V

43) Filter unit is connected in between block instrument and_____ ( )
a. isolation transformer b. line side of isolation transformer
c. block inst. side of isolation transformer d. none

44) Filter unit accommodates block inst. line circuits with_____ ( )
a. 1 no. of DC supply b. 1 no. of DC single polarities
c. 2 nos. of DC supply d. 2 nos. of DC single polarities

45) Block inst. line circuits of_____circuits are connected to Filter unit ( )
a. AC or DC b. DC & AC c. AC d. DC

46) The purpose of Condenser in a Filter unit_____ ( )
a. to block AC & to allow DC supply b. to block DC & AC supply.
c. to block DC & to allow AC supply d. to allow DC & AC supply

47) The Condenser in a Filter unit will have____number of terminals ( )
a. 2 b. 3 c. 4 d. none

48) In RE, the filter unit is provided with____filtering facility ( )
a. one stage b. two stage c. three stage d. none

49) The purpose of Choke in the filter unit of RE area is_____ ( )
a. to block induced voltages b. to block line circuit voltages
c. to allow induced voltages d. to earth induced voltages

50) For 25 KV A.C. lateral clearance between any live part of OHE and part of any fixed structure to a moving dimension is_____ ( )
a. 400 mm b. 320 mm c. 270 mm d. 220 mm

51) For 25 KV A.C. lateral clearance between any live part of OHE and part of any fixed structure to a stationary dimension is_ ( )
a. 400 mm b. 320 mm c. 270 mm d. 220 mm

52) For 25 KV A.C vertical clearance between any live part of OHE and part of any fixed structure to a moving dimension is_____ ( )
a. 400 mm b. 320 mm c. 270 mm d. 220 mm

53) For 25 KV A.C. vertical clearance between any live part of OHE and part of any fixed structure to a stationary dimension is_ ( )
a. 400 mm b. 320 mm c. 270 mm d. 220 mm

54) Longitudinal RE bond is provided for negative rails of_____ ( )
a. within the same TC b. adjacent TCs in same line
c. TC to RE mast d. parallel TCs

55) Transverse RE bond is provided for negative rails of_____ ( )
a. within the same TC b. adjacent TCs in same line
c. TC to RE mast d. parallel TCs

56) Structural RE bond is provided for negative rails of _____ ( )
a. within the same TC b. adjacent TCs in same line
c TC to RE mast d. parallel TCs

57) Inter track RE cross bond is provided for negative rails of _____ ( )
a. within the same TC b. adjacent TCs in same line
c. TC to RE mast d. parallel TCs

58) The distance between any OHE mast and point rod shall not be less than _ ( )
a. 40 mm b. 50 mm c. 10 mm d. None

59) A wire insulator to be provided at every_____of wire length transmission ( )

a. 40 m b. 500 m c. 100 m d. 300 m

60) Factor of safety in new design is____ ( )

a. 1.5 b. 1.2 c. 2.5 d. 3.5

ANSWERS KEY

1	2	3	4	5	6	7	8	9	10
a	c	c	b	c	c	b	a	d	c
11	12	13	14	15	16	17	18	19	20
b	a	c	d	d	a	c	b	c	b
21	22	23	24	25	26	27	28	29	30
c	d	a	c	d	b	a	b	b	a
31	32	33	34	35	36	37	38	39	40
b	b	c	b	a	b	b	a	c	a
41	42	43	44	45	46	47	48	49	50
b	d	b	d	d	c	c	c	a	d
51	52	53	54	55	56	57	58	59	60
b	c	b	a	b	c	d	a	d	a

AUTOMATIC SIGNALLING and IBS

1) Automatic signals interlocked with level crossing gate and point just ahead of the gate is provided with_____ ( )
   a. 'A' marker b. 'G' marker
   c. Illuminated 'A' & 'AG' marker d. Illuminated 'A' marker

2) Semi automatic stop signal is provided with_____ ( )
   a) 'A' marker only b) 'A' marker & illuminated 'A' marker
   c) 'AG' marker only d) 'P' marker

3) Adequate distance in automatic block system on double line is_____ ( )
   a) 180 mts b) 400 mts c) 120 mts d) 300 mts

4) If a semi automatic stop signal is protecting LC gate as well as point then _____ shall be provided on the post. ( )
   a) 'A' marker b) illuminated 'A' marker
   c) illuminated 'AG' marker d) b & c

5) Adequate distance in automatic block system on single line is_____ ( )
   a) 180 mts b) 400 mts c) 120 mts d) 300 mts

6) The normal aspect of automatic stop signal is_____ ( )
   a) caution b) proceed c) attention d) ON

7) For passing an Automatic signal at ON position the train has to stop for _____ minute by day and_____by night. ( )
   a) 1 & 2 b) 2 & 1 c) 5 & 5 d) none

8) Red lamp protection is provided to avoid approaching a_____signal. ( )
   a) manual b) blank c) stop d) semi-automatic

9) If an automatic signal becomes blank for any reason, the signal in rear shall display_____aspect. ( )
   a) Attention b) proceed c) ON d) caution

10) Semi automatic stop signal will work as_____ ( )
   a) automatic stop signal b) manual stop signal c) a and c d) none

11) Semi automatic stop signal is operated by_____ knob/lever ( )
   a) queen b) king c) commander d) none

12) Automatic stop signal can be_____aspect ( )
   a) 2 only b) 3 only c) 4 only d) 3 Aspect or 4 Aspect

13) Aspect of ASS will depend upon_____ ( )
   a) Aspect of signal ahead b) Condition of track circuit ahead
   c) position of train ahead d) all

14) Automatic stop signal is provided with ( )

a) A marker board b) P marker board

c) IB marker board d) AG marker board

15) Minimum Overlap distance beyond automatic stop signal is ( )

a) 180 mt b) 220 mt c) 400 mt d) 120 mt

16) Semi automatic stop signal is provided with_____ ( )

a) Illuminated A marker b) Illuminated AG marker

c) Illuminated S marker d) none

17) 3 aspect ASS will display ____aspect when 1 signaling section & overlap is clear ( )

a) ON b) Caution c) Proceed d) Attention

18) 3 aspect ASS will display_____aspect when 2 signaling section & overlap is clear ( )

a) Proceed b) Attention c) Caution d) ON

19) 4 aspect ASS will display_____aspect when 1 signaling section & overlap is clear ( )

a) Caution b) Attention c) Proceed d) ON

20) 4 aspect ASS will display_____aspect when 2 signaling section & overlap is clear ( )

a) Caution b) Attention c) Proceed d) ON

21) 4 aspect ASS will display_____aspect when 3 signaling section & overlap is clear ( )

a) Caution b) Attention c) Proceed d) ON

22) Direction of traffic must be established for working of trains on_____system ( )

a) RE S/L automatic b) RE D/L automatic

c) Non-RE S/L automatic d) a and c

23) Direction of traffic need not be established for working of trains on____system ( )

a) RE S/L automatic b) RE D/L automatic

c) Non-RE S/L automatic d) a and c

24) Automatic signaling system ( )

a) Reduces the headway between trains b) Increases the section capacity

c) Safety depends upon the alertness of driver d) all

25) Automatic stop signal provided with illuminated “A” and “AG” marker will display illuminated “A” marker when ( )

a) Points are detected b) Closed position of LC is detected

c) a and b d) none

26) Automatic stop signal provided with illuminated “A” and “AG” marker will display illuminated “AG” marker when ( )

a) Points are detected b) LC gate is defective c) a and b d) none

27) Automatic stop signal provided with illuminated “A” & “AG” marker can display( )

a) either “A” or “AG” marker b) both markers at a time

c) question vague d) none

28) Automatic stop signal working either as fully automatic signal or manual signal is provided with_____marker ( )

a) Illuminated "A" b) Illuminated "M" c) Illuminated "A" & "M" d) none

29) Each automatic block signaling section is divided as_____track ( )

a) Overlap only b) berthing only c) overlap and berthing d) none

30) _____is compulsory in automatic signaling ( )

a) cascading b) red lamp protection

c) 3 or 4 aspect signal d) all

31) No. of Controlling relays required for 3 aspect automatic signal are ( )

a) 2 b) 3 c) 4 d) none

32) No. of Controlling relays required for 4 aspect automatic signal are ( )

a) 2 b) 3 c) 4 d) none

33) Controlling relays required for 3 aspect automatic signal are ( )

a) HR b) HHR c) DR d) a and c

34) Controlling relays required for 4 aspect automatic signal are ( )

a) HR b) HHR c) DR d) all

35) Condition of controlling relays when 3 aspect automatic stop signal is displaying caution aspect ( )

a) HR DR b) HR DR c) HR DR d) none

36) Condition of controlling relays when 3 aspect automatic stop signal is displaying proceed aspect ( )

a) HR DR b) HR DR c) HR DR d) none

37) Condition of controlling relays when 4 aspect automatic stop signal is displaying caution aspect ( )

a) HR HHR DR b) HR HHR DR

c) HR HHR DR d) HR HHR DR

38) Condition of controlling relays when 4 aspect automatic stop signal is displaying attention aspect ( )

a) HR HHR DR b) HR HHR DR

c) HR HHR DR d) HR HHR DR

39) Condition of controlling relays when 4 aspect automatic stop signal is displaying proceed aspect ( )

a) HR HHR DR b) HR HHR DR

c) HR HHR DR d) HR HHR DR

40) Condition of controlling relays when 4 aspect automatic stop signal is displaying ON aspect ( )

a) HR HHR DR b) HR HHR DR

c) HR HHR DR d) HR HHR DR

41) Condition of controlling relays when 3 aspect automatic stop signal is displaying ON aspect ( )

a) HR DR b) HR DR c) HR DR d) none

42) When HR is de-energized, automatic stop signal will display ( )

a) ON aspect b) Attention aspect c) Proceed aspect d) none

43) When HR and HHR is energized, automatic stop signal will display ( )

a) ON aspect b) Attention aspect c) Proceed aspect d) none

44) When HR, HHR, and DR is energized, automatic stop signal will display ( )

a) ON aspect b) Attention aspect c) Proceed aspect d) none

45) With HR and HECR 3 aspect automatic stop signal will display ( )

a) ON aspect b) Attention aspect c) Proceed aspect d) none

46) With HR and HECR 3 aspect automatic stop signal will display ( )

a) ON aspect b) Attention aspect c) Proceed aspect d) none

47) With HR DR and DECR 3 aspect automatic stop signal will display ( )

a) ON aspect b) Attention aspect c) Proceed aspect d) none

48) With HR DR and DECR automatic stop signal will display ( )

a) ON aspect b) Attention aspect c) Proceed aspect d) none

49) With HECR DECR 3 aspect automatic stop signal will display ( )

a) ON aspect b) Attention aspect c) Proceed aspect d) none

50) With HECR HHECR DECR 4 aspect automatic stop signal will display ( )

a) ON aspect b) Attention aspect c) Proceed aspect d) none

51) When train passes LSS with LSS knob in Reverse position___indication with buzzer appears. ( )

a) K1 b) K2 c) K3 d) K4

52) To reset the axle counter section of IBS, the receiving end ASM has to press _____ button. ( )

a) PB4 b) PB3 c) PB2 d) PB1

53) __Relay proves that the Axle counter section is free of any axle. ( )

a) ACSR b) ACZR c) ACPR d) LSS NSR

54) _____Indication appears when train passes IBS at OFF position. ( )

a) K1 b) K2 c) K3 d) K4

55) The length of IBS overlap is_____. ( )

a) 400m b) 200m c) 180m d) 120m

56) To acknowledge K1 buzzer_____relay has to pick up. ( )
a) XR b) CRR c) CPBR d) PBPR

57) ACZR picks up through_ relay front contact and maintains through stick path ( )
a) PBPR b) CRR c) ACZNR d) ACZR

58) _____Relay picks up when K4 buzzer is acknowledged. ( )
a) XR b) CRR c) CPBR d) PBPR

59) _____Button is to be pressed at dispatch end for axle counter resetting. ( )
a) PB4 b) PB3 c) PB2 d) PB1

60) _____Button is to be pressed at dispatch end for resetting IB section. ( )
a) PB4 b) PB3 c) PB2 d) PB1

61) _____Indication appears when IB power fails. ( )
a) K1 b) K2 c) K3 d) K4

62) For reducing the induced voltages in cables_____is provided for IB operation( )
a) RE cut b) remote feed c) Double cutting d) filter unit

63) _____Relay picks up when PB3 is pressed. ( )
a) XR b) ACZR c) CPBR d) PBPR

64) Driver of a train has to communicate with_____station on IB phone. ( )
a) Rear b) advance c) both d) none

65) When train passes IBS at ON,_____relay drops. ( )
a) PBPR b) CRR c) ACZNR d) ACZR

66) IB Home signal is provided with_____marker. ( )
a) I b) B c) P d) IB

67) K4 indication appears when ( )
a) IB signal passed at ON b) IB signal passed at OFF
c) LSS passed at ON d) IB signal at blank

68) When IB signal is danger and telephone on IB post is not working, the Driver has to wait for_____minutes. ( )
a) 15 b) 10 c) 5 d) 0

69) LSS is controlled by_____in IBS ( )
a) Block instrument b) Axle counter
c) IB signal d) None of the above

70) IB signal is controlled by the_____in IBS ( )
a) Block instrument b) Axle counter
c) IB signal d) None of the above

71) To reset the axle counter in IBS block section, the sending end ASM presses _____push button ( )
a) PB1 b) PB2 c) PB3 d) none

72) The cable extended for power supply to IB location is ( )
a) 24x1.5 sqmm copper cable b) 2x25 sqmm aluminum cable
c) 30x1.5 sqmm copper cable d) 2x2.5 sqmm copper cable

73) IB signal is substitute of_____station ( )
a) class A b) class B c) class C d) special class

74) IB signal splits block section into_____ ( )
a) Single section b) 2 sections c) Multiple sections d) none

75) Section capacity increases with_____signal ( )
a) Home b) routing home c) IB d) all

76) The IB signalling is provided to avoid the expenditur on_____ ( )
a) additional Block Instruments b) Station Building
c) Operating Staff d) all

77) 'Rear Section' and 'Advance Section' are related with_____ ( )
a) IB Signalling b) Automatic Signalling c) Outlay siding d) All

78) Maximum_____can be dealt on IB signalling ( )
a) Single train b) 2 trains c) 3 trains d) any number of trains

79) Rear section means the section between_____ ( )
a) LSS and IBS including IB overlap b) IB Signal and station home
c) LSS and station home d) can be anything

80) Advance section means the section between_____ ( )
a) IBS and FSS of station in rear b) IBS and FSS of station in advance
c) IBS and distant signal d) IBS and LSS of station in advance

81) IB signal is placed at the point where the section is divided into_____ ( )
a) Single portion b) 2 portions c) 3 portions d) none

82) Incorrect statement related to IB signal_____ ( )
a) Provided on D/L b) section capacity increases
c) can be provided in neutral section d) none

83) The IB Signal shall be so located that the running time of_____ ( )
a) Rear Section will be equal to Advance Section
b) Rear Section will be more than Advance Section
c) Rear Section will be less than Advance Section
d) none

84) _____audible buzzers are stopped by pressing the Acknowledgement button ( )
a) K1 & K2 b) K2 & K3 c) K3 & K4 d) K1 & K4

85) ____audible buzzers are stopped by normalizing the LSS & IB Signal controls ( )
a) K1 & K2 b) K2 & K3 c) K3 & K4 d) K1 & K4

86) IB panel consists of_____indications ( )

a) IB Signal indication b) IB Distant Signal indication

c) IB track indication d) all

87) IB panel consists of_____indications ( )

a) LSS Signal indication b) A/C Clear indication

c) A/C Occupied indication d) all

88) K1 indication appears when_____relay drops ( )

a) NSR b) HSR c) ACZR d) all

89) In IB signaling LCPR picks up_____at station ( )

a) train receiving b) train sending station

c) both the stations d) none

90) Incorrect statement to pick up IBS DR is_____ ( )

a) IB lever reversed b) IB lever Normalized

c) LCPR up d) IB TPR up

91) Correct statement related to IBS HSR_____ ( )

a) Normally up b) A/C section occupied & IBS not taken OFF

c) A/C section occupied & IBS taken OFF d) None

92) ACZR has_____parallel holding paths ( )

a) 2 b) 3 c) 4 d) none

93) In IB signaling LSS NSR drops when _____ ( )

a) Axle counter section fails

b) LSS control is normal & train entered axle counter section

c) LSS control is reverse & train not entered axle counter section

d) LSS control is reverse & train entered axle counter section

94) ACZR holds through_____ ( )

a) LSS NSR HSR IB TPR b) LSS NSR HSR IB TPR

c) LSS NSR HSR IB TPR d) LSS NSR HSR IB TPR

95) ACZR drops when_____ ( )

a) LSS NSR HSR IB TPR b) LSS NSR HSR IB TPR

c) LSS NSR HSR IB TPR d) LSS NSR HSR IB TPR

96) HSR picks up through_____ ( )

a) ACPR IBS DR IBS DECR b) ACPR IBS DR IBS DECR

c) ACPR IBS DR IBS DECR d) ACPR IBS DR IBS DECR

97) LCPR picks up when_____ ( )

a) IB TPR IBS DR IBS knob R b) IB TPR IBS DR IBS knob N

c) IB TPR IBS DR IBS knob N d) IB TPR IBS DR IBS knobR

98) LCPR picks up when_____ ( )

a) IB TPR ,IBS DR ,PR LC contact b) IB TPR ,IBS DR ,PR LC contact

c) IB TPR ,IBS DR ,PR LC contact d) IB TPR ,IBS DR,PR LC contact

99) ASR 1 and ASR 2 picks up through_____ ( )

a) LSS TPR , LCPR ,PRTOL contact b) LSS TPR ,LCPR ,PR TOL contact

c) LSS TPR ,LCPR ,PR TOL contact d) LSS TPR ,LCPR ,PR TOL contact

100) Intermediate Block Signaling system can be provided on ( )

a) single line b) double line c) multiple line d) all

ANSWERS KEY

1	2	3	4	5	6	7	8	9	10
c	b	c	c	c	b	a	b	c	c
11	12	13	14	15	16	17	18	19	20
b	d	d	a	d	a	b	a	a	b
21	22	23	24	25	26	27	28	29	30
c	d	b	d	c	c	a	a	c	d
31	32	33	34	35	36	37	38	39	40
a	b	d	d	b	a	a	b	c	d
41	42	43	44	45	46	47	48	49	50
c	a	b	c	a	d	d	c	a	a
51	52	53	54	55	56	57	58	59	60
b	b	c	c	a	d	c	a	c	d
61	62	63	64	65	66	67	68	69	70
d	a	c	a	d	d	d	c	b	a
71	72	73	74	75	76	77	78	79	80
b	b	c	b	c	d	a	b	a	b
81	82	83	84	85	86	87	88	89	90
b	c	a	d	b	d	d	c	b	b
91	92	93	94	95	96	97	98	99	100
c	b	d	a	d	c	c	c	b	d

SIGNAL INTERLOCKING

1) Signaling plan is based on approved_____plan ( )
   a) Operating b) Engineering c) Mechanical plan d) S & T

2) The Signaling Plan is approved by_____ ( )
   a) CSTE b) CRS c) CSE d) COM

3) All the levers in the frame are serially numbered from_____ ( )
   a) LH to RH b) RH to LH
   c) Middle to RH d) Middle to LH

4) Locking tray of a Catch Handle type lever frame will be in combination or multiples of_____ ( )
   a) 6 & 8 b) 8 &10 c) 5 & 7 d) 7 & 10

5) The locking tray of a Direct type lever frame will be in combination or multiples of_____ ( )
   a) 6 & 8 b) 8 &10 c) 5 & 7 d) 7 & 10

6) Geographical method of numbering is suitable for_____ ( )
   a) Small yards b) big yards c) Small & Big yards d) none

7) Functions in “Group-cum-Geographical Method" are divided into____groups( )
   a) 2 b) 3 c) 4 d) 6

8) Group-I consists of_____ ( )
   a) Points/Lock bar b) Points /LC gate
   c) Signals/slots d) all

9) Group-II consists of_____ ( )
   a) Signals /Lock bar b) Signals /Point
   c) Lock bar /Point /LC gate d) none

10) Spare levers are accommodated_____ ( )
   a) In group-I only b) In group-II only
   c) In group-III only d) between the groups

11) Essentials of interlocking as per SEM is given in_____ ( )
   a) Para 7.82 of part-1, b) Para 8.72 of part-1
   c) Para 7.82 of part-2 d) Para 8.72 of part-2

12) Lock retaining bar is required if distance between the Signal and First facing point is_____ ( )
   a) Less than 120 mt b) More than 120 mt
   c) Less than 180 mt d) More than 180 mt

13) Signal is released by point if____position of point is required for the signal ( )
   a) Normal b) Reverse c) both way d) none

14) Signal locks the point if_____position of point is required for the signal ( )
   a) Normal b) Reverse c) both way d) none

15) Signal locks the point both ways for_____purpose ( )
a) Flexibility b) parallel movement c) Route holding d) none

16) In a station different signalling gears are to be operated in a logical sequence for dealing the trains with ( )
a) safe running b) unsafe running c) late running d) none

17) The shunt signals are to be numbered after main signals in_____ ( )
a) group 1 b) group 2 c) group 3 d) none

18) The main signals are to be numbered after shunt signals in_____ ( )
a) group 1 b) group 2 c) group 3 d) none

19) The signaling plan provides_____information ( )
a) type of signaling b) class of station
c) standards of interlocking d) all

20) Successive_____locking is the means of roué holding ( )
a) point b) lock bar c) slot d) LC gate

21) The interlocking between signal lever and point lever is such that point lever cannot be operated unless ( )
a) signal lever is normalized b) signal lever is reversed
c) signal lever is in middle position d) none

22) Signal lever can be reversed only when ( )
a) point lever is in middle position b) ¾ th position
c) point lever is in full normal or full reverse position d) none

23) which statement is incorrect ( )
a) signal has relation with point
b) point can be operated after signal is reversed
c) point cannot be operated after signal is reversed
d) none

24) conditions to take off signals includes ( )
a) points in the route, overlap and isolation b) conflicting signals not taken off
c) LC gate is closed d) all

25) Incorrect statement related with conditions to take off signals ( )
a) points in the route required b) conflicting signals can be taken off
c) LC gate must be closed d) points in overlap and isolation required

26) Incorrect statement related with conditions to take off signals ( )
a) points in the route required b) conflicting signals cannot be taken off
c) LC gate can be open d) points in overlap and isolation required

27) Incorrect statement related with conditions to take off signals ( )
a) points in the route not required b) conflicting signals cannot be taken off
c) LC gate must be closed d) points in overlap and isolation required

28) Incorrect statement related with conditions to take off signals ( )
a) points in the route required b) conflicting signals cannot be taken off
c) LC gate must be closed d) points in overlap and isolation not required

29) lock retaining bar will ensure ( )
a) route releasing b) route holding c) route checking d) all

30) Lock bar is free when ( )
a) signal is not taken off b) no train on lock bar c) a and b d) none

31) Point will be locked by ( )
a) its own track circuit b) back locks tracks
c) concerned signal d) a and c

32) When cross over point zone track is occupied ( )
a) Only A end point will operate b) Only B end point will operate
c) A end and B end will not operate d) A end and B end will operate

33) If route is locked after train movement, same can be released ( )
a) when back lock tracks fail b) only when back lock tracks pick up
c) route cancellation applied d) b and c

34) When home signal is approach locked, route can be released in_____ways ( )
a) 2 b) 3 c) 4 d) 5

35) When home signal is not approach locked, route can be released in___ways ( )
a) 2 b) 3 c) 4 d) 5

36) Starter route is released through ( )
a) UYR's path b) JSLR/NJPR path
c) TSR/App TPR path d) all

37) Conditions proved in UCR, ASR and HR are reflected in ( )
a) Table of control b) Signalling plan
c) Engineering plan d) cable route plan

38) Circuit testing consists of ( )
a) Negative tests b) Dead/Approach locking tests
c) Back/Route locking tests d) all

39) Wire to wire test is done in_____stage ( )
a) single b) 2 stage c) 3 stage d) final only

40) Wire to wire test is done ( )
a) after all wires are drawn b) before all wires are drawn
c) after 20 % of wires are drawn d) none

41) Wire to wire test is done ( )
a) after all wires are drawn b) before all wires are drawn
c) after soldering drawn d) a and c

42) Bell test is carried out to check whether ( )

a) wiring is done as per wiring sheet b) wire drawn has continuity

c) any wiring faults are accumulated d) all

43) The wireman shall give the following information to the tester after holding the wire ( )

a) name of the relay b) color of the wire

c) no. of wires in contact cavity d) all

44) The wireman after verifying the Relay plug board shall loudly spell out ( )

a) relay name b) rack no c) number of wires d) all

45) Approach locking, back locking and conflicting signals are not taken off is reflected in ( )

a) Table of control b) Signalling plan c) route plan d) none

46) Cross sheet testing means ( )

a) testing of parallel movements b) testing of crossover movements

c) testing of conflicting signals d) all

47) Conflicting signals are of_____types ( )

a) 2 b) 3 c) 4 d) none

48) _____conflicting signals are reflected in TOC ( )

a) Indirectly conflicting b) directly c) a and b d) none

49) Conditional locking includes ( )

a) locking condition b) free condition c) a and b d) none

50) Functional test is to be done ( )

a) when new equipment is commissioned b) indoor equipment is changed

c) track side equipment/cable is changed d) all

ANSWERS KEY

1	2	3	4	5	6	7	8	9	10
b	a	a	b	c	c	b	c	c	D
11	12	13	14	15	16	17	18	19	20
a	d	b	a	c	a	a	c	d	B
21	22	23	24	25	26	27	28	29	30
a	c	b	d	b	c	a	d	b	C
31	32	33	34	35	36	37	38	39	40
a	c	d	c	b	d	a	d	b	A
41	42	43	44	45	46	47	48	49	50
d	d	d	d	a	c	a	b	c	D

EOLB & MOLB

1) Open position of lifting barrier shall be within_____ ( )
   a. $80^0 - 85^0$ b. $80^0 - 90^0$ c. $85^0 - 90^0$ d. $70^0 - 80^0$

2) LXYPR picks up at_____ ( )
   a. relay room b. gate location box
   c. SM room d. ESM room

3) _____motor is used for EOLB ( )
   a. servo motor b. stepper motor
   c. PMDC motor d. synchronous motor

4) When booms rest on the meeting post_____switch makes in MFT EOLB ( )
   a. LS1 b. LS2 c. LS3 d. CWLS

5) _____relay is used for LXNR/LXRR in MFT EOLB ( )
   a. QNA1 b. QN1 c. QBA1 d. QBCA1

6) _____relay is used for BCR / BLFR in MFT EOLB ( )
   a. QNA1 b. QN1 c. QBA1 d. QBCA1

7) _____relay picks up for locking of booms in MFT EOLB. ( )
   a. BLFR b. BCR c. LXR d. GMR

8) _____relay picks up for unlocking of booms in MFT EOLB ( )
   a. BLFR b. BCR c. LXR d. GMR

9) It shall not be possible to lift the booms by more than_____degrees after gate is closed and locked against road traffic ( )
   a. 5 b. 0 c. 10 d. 15

10) LC gate census shall be done once in_____ ( )
   a. 1 year b. 2 year c. 3 year d. 4 year

11) ___Relay extends voltage to pedestal motor to open the gate in MFT-EOLB ( )
   a. LXRR b. LXNR c. ALXR d. BLXR

12) ___Relay extends voltage to pedestal motor to close the gate in MFT-EOLB ( )
   a. LXRR b. LXNR c. ALXR d. BLXR

13) ___relay extends voltage to meeting post motor to lock the boom in MFT EOLB( )
   a. BLFR b. BCR c. LXNR d. LXRR

14) _ relay extends voltage to meeting post motor to unlock the boom in MFT EOLB( )
   a. BLFR b. BCR c. LXNR d. LXRR

15) _____relay picks up at Location when both booms are closed, locked & slot knob reversed in MFT make EOLB. ( )
   a. LXRR b. BCR c. LXNR d. LXCLR

16) CWLS "NO" contact is used to pick up_____relay ( )

a. LXRR b. BCR c. LXNR d. LXCLR

17) _____band is used for closing of gate in MFT make EOLB ( )

a. 0^0-85^0 b. 80^0-85^0 c. 85^0-5^0 d. 0^0-5^0

18) _____band is used for snubbing in MFT make EOLB ( )

a. 0^0-85^0 b. 80^0-85^0 c. 85^0-10^0 d. 0^0-5^0

19) Snubbing resistor value in MFT make EOLB_____ ( )

a. 10Ω /100w b. 5Ω /10w c. 100Ω /10w d. 5Ω /100w

20) _____is used for picking of A/B LXR in MFT make EOLB ( )

a. LS1 b. LS2 c. CWLS d. 0^0-5^0 band

21) When booms are closed & locked at gate lodge____relay picks up in MFT make EOLB ( )

a. LXR b. BCR c. LXNR d. LXCLR

22) Range of operation for MOLB ( )

a. 300 mt b. 180 mt c. 120 mt d. 150 mt

23) Height of the booms from road surface is to be maintained between ( )

a. 0.8 mt to 1 mt b. 1 mt only

c. less than 1 mt only d. 1 mt to 1.5 mt

24) Distance between gate post and CLOT is_____mts ( )

a. 5 b. 6 c. 8 d. 20

25) Distance between gate lodge and CLOT is_____mts ( )

a. 5 b. 6 c. 8 d. 20

26) Distance between height gauge and CLOT is_____mts ( )

a. 5 b. 6 c. 8 d. 20

27) Speed breakers shall be provided at_____mts from CLOT ( )

a. 5 b. 6 c. 8 d. 20

28) Fencing shall be provided up to_____mts on either side of the gate parallel to the track ( )

a. 5 b. 6 c. 8 d. 15

29) Gate signal shall be provided not less than_____mts from Gate ( )

a. 120 b. 180 c. 300 d. 400

30) Gate Signal distance shall be measured from_____ ( )
a. end of the gate lodge b. center of gate
c. pedestal d. edge of check rail

31) Gate hooter sound must be audible up to_____meters ( )
a. 120 b. 180 c. 300 d. 400

32) _____band is used for opening of gate in MFT make EOLB ( )
a. 0^0-85^0 b. 80^0-85^0 c. 85^0-5^0 d. 0^0-5^0

33) _____Relay is used for LXYPR in RE area ( )
a. QN1 b. QNA1 c. QBCA1 d. QSPA1

34) _____relay picks up at R/room when LXCLR is picked up at Gate location in MFT make EOLB ( )
a. LXCR b. LXPR c. LXRR d. LXFR

35) ____will avoid electrical operation during crank handle operation in MFT EOLB( )
a. Cut out switch b. Limit switch c. A boom switch d. B boom switch

36) Max. length of LC gate boom is_____mts ( )
a. 9.75 b. 9.65 c. 9.85 d. 9.9

37) Working voltage of MFT make EOLB is_____ ( )
a. 24V AC b. 24V DC c. 110V DC d. 110V AC

38) Snubbing is effective while_____in MFT make EOLB ( )
a. Opening only b. locking c. closing only d. unlocking

39) _____will avoid reverse force in gear drive mechanism for MFT make EOLB ( )
a. snubbing b. drive shaft c. friction clutch d. worm gear

40) _____is provided in between Motor and Gear mechanism ( )
a. snubbing b. drive shaft c. clutch assembly d. worm gear

41) _____type relay is used for opening & closing of booms in MFT make EOLB ( )
a. QBCA1 b. QBA1 c. QN1 d. QNA1

42) ___Relay picks up when gate is closed in HEIDZ make EOLB ( )
a. RR b. BLR c. LXR d. NSR

43) ___Relay picks up when gate is locked in HEIDZ make EOLB ( )
a. RR b. BLR c. LXR d. NSR

44) ___Relay picks up when gate is closed and locked and slot reverse in HEIDZ make EOLB ( )
a. RR b. BLR c. LXR d. NSR

45) ____is used for closing in HEIDZ make EOLB ( )

a. LS1 b. LS2 c. LS3 d. LS4

46) ____is used for opening in HEIDZ make EOLB ( )

a. LS1 b. LS2 c. LS3 d. LS4

47) ____is used for snubbing in HEIDZ make EOLB ( )

a. LS1 b. LS2 c. LS3 d. LS4

48) ____is used in RR circuit of HEIDZ make EOLB ( )

a. LS1 b. LS2 c. LS3 d. LS4

49) NSR relay picks up when gate is_____in HEIDZ make EOLB ( )

a. Close b. Open c. Lock d. Unlock

50) Solenoid coil resistance is_____ohms in HEIDZ make EOLB ( )

a. 5 b. 25 c. 48 d. 100

ANSWERS KEY

1	2	3	4	5	6	7	8	9	10
a	b	c	d	d	b	b	a	c	C
11	12	13	14	15	16	17	18	19	20
b	a	b	a	d	b	c	c	d	A
21	22	23	24	25	26	27	28	29	30
a	d	a	a	b	c	d	d	b	D
31	32	33	34	35	36	37	38	39	40
c	a	b	a	a	a	b	c	d	C
41	42	43	44	45	46	47	48	49	50
a	a	b	c	a	b	c	d	b	B

ELECTRONIC INTERLOCKING

1) Prime inputs for the EI Interface design are ---------- ( )
   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 ---------- ( )
   a) Communication ports b) Communication cables
   c) Vital & Non vital bit chart d) Software

3) In EI, application software is----------. ( )
   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 ( )
   a) Signaling cable b) Optical Fiber Cable
   c) Quad cable d) Power cable

5) In Electronic interlocking system, executive software is ---------- ( )
   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 detected by an EI ---------- ( )
   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 ---------- ( )
   a) Not mandatory b) Mandatory
   c) It is a part of EI Hardware d) It is a part of VDU

8) By using Object Controllers ---------- ( )
   a) number of inputs can be minimized
   b) main signaling cable can be eliminated due to OFC communication
   c) number of outputs can be minimized
   d) All

9) The ---------- converts High level language to Machine Language ( )
   a) Source code b) Object code
   c) Compiler d) Reverse compiler

10) As per latest guide lines ---------- standby set up is to be used in EI. ( )
   a) Cold standby b) Warm standby
   c) Power backup d) Hot Standby.

11) ---------- cable is required for the VDU connectivity with EI ( )
   a) 2.5 sq.mm signaling cable b) 1.5 Sq mm Signaling cable
   c) power cable d) OFC

12) The vital output card in an EI ---------- ( )
a) Drives INPUT b) Drives OUTPUT relays
c) part of CPU d) 12 V DC

13) The EI application logic is loaded in to ---------- ( )
a) Non Vital I/O card b) CPU card
c) Output card d) CPU and Out put cards.

14) _____earthing arrangement is required for EI ( )
a) Conventional earthing b) Maintenance free earth
c) Perimeter / ring d) all

15) The external Data logger can be connected to EI through---------- ( )
a) Protocol converter b) Flash EPROMs
c) RS 232 converter d) OC

16) To start Application design of EI, the Inputs required are_____ ( )
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.

17) ---------- safety Integrity level to be maintained for Hardware of any EI ( )
a) SIL 1 b) SIL 2 c) SIL 3 d) SIL 4

18) Based on Non Vital I/O bit calculation, ---------- can be calculated. ( )
a) Panel processor cards b) wires count
c) Power supply details d) communication details

19) Self integrity test is the inbuilt feature of---------- ( )
a) EI b) RRI c) Track circuit d) PI

20) The Reverse Compiler converts ---------- ( )
a) The Source code b) Object code to source code
c) High level language to Machine Language d) Compiler

21) ----------is connected through Protocol converter ( )
a) The external Data logger b) Flasher EPROM
c) OFC d) OC

22) The interface between CCIP and the EI is called_____ ( )
a) OCI b) VDUCT c) PP d) NV I/O card

23) SIL 4 safety integrity level is required for ( )
a) VDU Hardware b) MTC c) VDU software d) EI Hardware

24) ---------- contacts are used as Read back contacts ( )
a) Vital in put Relay b) Vital output Relay
c) Non Vital d) Event logger

25) NWKRs, RWKRs are treated as_____to the Electronic Interlocking system ( )
A) Vital in puts B) Vital outputs
C) Non Vital Inputs D) Non Vital outputs

26) HRs, DRs are treated as_____to the Electronic Interlocking system ( )
A) Vital in puts B) Vital outputs
C) Non Vital Inputs D) Non Vital outputs

27) LXCR is treated as_____to the EI ( )
A) Vital inputs B) Vital outputs
C) Non Vital Inputs D) Non Vital outputs

28) Based on the station interlocking circuits_____program is prepared ( )
A) Application B) Executive
C) Station Data D) Communication

29) ----------is used as an operating interface to the EI ( )
A) Object controller B) Maintenance PC
C) VDU/OPC D) Data logger

30) Executive program is loaded in to ---------- ( )
A) Data EPROMs B) Executive EPROMS
C) I/O connecters D) VDU PC

31) MLK-II EI is provided with_____feature ( )
A) 2 out of 2 decision B) 2 out of 3 decision C) CRC D) none

32) MLK-II EI is having redundancy in_____ ( )
A) hardware B) software C) both D) none

33) In MLK-II EI, card file can have maximum____number of slots ( )
A) 10 B) 20 C) 30 D) 40

34) In MLK-II EI,_____PCBs will occupy two slots in card file ( )
A) Power Supply B) CPU C) both A & B D) none

35) In MLK-II EI, CPU card is placed in_____slots of a card file generally ( )
A) 16^{th} & 17^{th} B) 18^{th} & 19^{th} C) 20^{th} D) none

36) In MLK-II EI, Power Supply card is placed in___slots of a card file generally( )
A) 16^{th} & 17^{th} B) 18^{th} & 19^{th} C) 20^{th} D) none

37) In MLK-II EI, each Card File CPU can replace the_____internal circuit relays ( )
A) 2000 B) 3000 C) 4000 D) 5000

38) In MLK-II EI, each Card File CPU can control the_____routes of a station ( )
A) 200 B) 300 C) 400 D) 500

39) In MLK-II EI, normal input supply given to PS PCB is_____volts DC ( )
A) 12 B) 24 C) 60 D) 110

40) In MLK-II EI, the constant output supply from PS PCB is_____ ( )
A) +24v, +12v & +5v B) +12v, –12v & +5v
C) +12v, –12v & +24v D) +12v, –12v & +60v

41) In MLK-II EI, VCOR has_____type of contacts ( )
A) independent B) dependent C) both D) none

42) In MLK-II EI, VCOR has_____contact combinations ( )
A) 6F/6B B) 8F/8B C) 6F/B D) 8F/B

43) In MLK-II EI, supply to VCOR is directly controlled by_____PCB ( )
A) CPU B) PS C) both D) none

44) In MLK-II EI, supply to VCOR is indirectly controlled by_____PCB ( )
A) CPU B) PS C) both D) none

45) In MLK-II EI, supply to VCOR is given when_____signal is received ( )
A) CPU B) CPS C) CRC D) none

46) In MLK-II EI, CPS signal is generated by_____card ( )
A) CPU B) PS C) both D) none

47) In MLK-II EI, CPS signal is received by_____card ( )
A) CPU B) PS C) both D) none

48) In MLK-II EI, CPS signal frequency is_____Hz ( )
A) 50 B) 150 C) 250 D) none

49) In MLK-II EI, VCOR front contacts controls the power supply of____circuits ( )
A) Vital Input B) Vital Output C) NV input D) NV output

50) In MLK-II EI, CPS signal is generated as far as _ is intact & working properly( )
A) hardware B) software C) both D) none

51) In MLK-II EI, if system is malfunctioning then CPS signal is withdrawn by _ ( )
A) CPU PCB B) PS PCB C) both D) none

52) In MLK-II EI, if CPS signal is withdrawn, then supply to VCOR cuts off by _ ( )
A) CPU PCB B) PS PCB C) both D) none

53) In MLK-II EI,_____software is common for all station's CPU cards ( )
A) Executive B) application logic C) both D) none

54) In MLK-II EI,_____software is different for all station's CPU cards ( )
A) Executive B) application logic C) both D) none

55) In MLK-II EI, Executive software version is displayed on _ of CPU front panel( )
A) upper display B) lower display C) both D) none

56) In MLK-II EI, application software version is displayed on _ of CPU front panel( )
A) upper display B) lower display C) both D) none

57) In MLK-II EI, Upper & Lower displays of CPU scrolls the information with _ _ character type displays ( )
A) 4-numeric B) 4-alfa numeric C) 4-alfa D) none

58) In MLK-II EI, CPU PCB has____number of communication serial link ports ( )
A) 3 B) 4 C) 5 D) 6

59) In MLK-II EI, port no.____is provided on CPU front panel ( )
A) 3 B) 4 C) 5 D) 6

60) In MLK-II EI, application logic program can be downloaded or uploaded with( )
A) port no. 3 B) port no. 4 C) port no. 5 D) port no. 6

61) In MLK-II EI, Port-1 & Port-2 of CPU card is campatable with_ ( )
A) RS 232 B) RS 423/232 C) RS 485 D) all

62) In MLK-II EI, Port-4 & Port-5 of CPU card is campatable with_ ( )
A) RS 232 B) RS 423/232 C) RS 485 D) all

63) In MLK-II EI, Port-3 of CPU card is campatable with_____ ( )
A) RS 232 B) RS 423/232 C) RS 485 D) all

64) In MLK-II EI, date & time can be adjusted through_____ ( )
A) toggle switches on CPU PCB front panel B) Maintenance PC
C) Both A & B D) None

65) In MLK-II EI, resetting can be done through_____ ( )
A) toggle switches on CPU PCB front panel B) Maintenance PC
C) Both A & B D) None

66) In MLK-II EI, CPU PCB is stored with_____data for accessing & analyzing ( )
A) user B) event C) error D) all

67) In MLK-II EI, CPU PCB can store user data up to_____information ( )
A) 90,000 B) 5,000 C) 50 D) none

68) In MLK-II EI, CPU PCB can store event data up to_____information ( )
A) 90,000 B) 5,000 C) 50 D) none

69) In MLK-II EI, CPU PCB can store error data up to_____information ( )
A) 90,000 B) 5,000 C) 50 D) none

70) In MLK-II EI, CPS means_____ ( )
A) Cycles per Second B) Conditional Power Supply
C) Checks Pulse of Signal D) none

71) In MLK-II EI, Port no. 5 of CPU PCB is named as_____port ( )
A) Maintenance B) Diagnostic C) debug D) all

72) In MLK-II EI, Port no. 5 of CPU PCB is connected to_____ ( )
A) Laptop B) Maintenance PC C) A or B D) both A & B

73) In MLK-II EI, CPU PCB has 4 numbers of____for storing software ( )
A) RAMs B) Flash EPROMs C) EEPROM D) none

74) In MLK-II EI, Application & Executive software of CPU is stored in_____( )
A) 4 nos. of Flash EPROMs B) EEPROM
C) 4 nos. of Low power Static Ram D) 2 nos. of Fast Static Ram

75) In MLK-II EI, Vital Data Processing in CPU is done by_____ ( )
A) 4 nos. of Flash EPROMs B) EEPROM
C) 4 nos. of Low power Static Ram D) 2 nos. of Fast Static Ram

76) In MLK-II EI, Event / Error Data is stored in CPU by_____ ( )
A) 4 nos. of Flash EPROMs B) EEPROM
C) 4 nos. of Low power Static Ram D) 2 nos. of Fast Static Ram

77) In MLK-II EI, CPU card top pin connector assembly PCB has____for storing site specific configuration data ( )
A) EPROMs B) Flash EPROMs C) EEPROM D) none

78) In MLK-II EI, the site specific configuration is____for all stations ( )
A) same B) different C) both D) none

79) In MLK-II EI, site specific configuration data is___if CPU card is removed ( )
A) deleted B) remains intact C) changed D) none

80) In MLK-II EI, Minimum System Start-Up voltage is____ ( )
A) 12v DC B) 12v AC C) 11.5v DC D) 11.5v AC

81) In MLK-II EI, the processor used in CPU card is____ ( )
A) Motorola 68832 B) Motorola 68332 C) Motorola 68322 D) None

82) In MLK-II EI, maximum _ no. of inputs can be connected to vital Input card ( )
A) 8 B) 16 C) 32 D) 64

83) In MLK-II EI, each vital output card can drive_____relays ( )
A) 8 B) 16 C) 32 D) 64

84) In MLK-II EI, Max.____no. of I/O can be connected to Non-Vital I/O card ( )
A) 8 B) 16 C) 32 D) 64

85) In MLK-II EI, Top & Bottom pin connectors for Non-Vital I/O PCB has____( )
A) 48 & 48 B) 48 & 96 C) 96 & 96 D) none

86) In MLK-II EI, Top & Bottom pin connectors of 48 & 96 is provided for___card( )
A) Power Supply B) Vital Input & Output C) CPU D) All

87) In MLK-II EI, for____Address Select PCB is connected on top pin connector ( )
A) NV I/O cards B) Power Supply card C) CPU card D) All

88) In MLK-II EI, for____Address Select PCB is connected on top pin connector ( )
A) NV I/O cards B) Vital Output card C) Vital Input card D) All

89) In MLK-II EI, on Address Select PCB____nos. of jumpers are provided ( )
A) 4 B) 6 C) 8 D) 12

90) In MLK-II EI,____arrangement is provided to prevent plugging of wrong PCB( )
A) Jumpers B) Keying Plugs C) EEPROM D) none

91) In MLK-II EI, In Keying plug arrangement_____plugs are provided out of _____positions ( )
A) 3, 6 B) 6, 12 C) 5, 16 D) none

92) In MLK-II EI, Keying plug arrangement is provided adjacent to _ connector ( )
A) Top B) Bottom C) Both D) none

93) In MLK-II EI,___pin connector is used for physical wiring ( )
A) Top B) Bottom C) Both D) none

94) In MLK-II EI,____circuits are provided with single cutting arrangement ( )
A) Non-vital Input B) Non-vital Output C) Vital Output D) all

95) In MLK-II EI,____circuits are provided with double cutting arrangement ( )
A) Non-vital Input B) Non-vital Output C) Vital Output D) Vital Input

96) In MLK-II EI,_____circuits are protected with poly switches ( )
A) Non-vital Output B) Vital Output C) Both A & B D) None

97) In MLK-II EI,_____relay ensures fail safe functioning of system ( )
A) PCOR B) MCOR C) VCOR D) None

98) VCOR Relay contacts current carrying capacity is_____Amp ( )
A) 1A B) 3A C) 5A D) 0.5A

99) Normal working current of VCOR is_____ ( )
A) 3 ma B) 3 A C) 30 ma D) 30 A

100) In MLK-II EI,___circuit is provided with high side software controlling switch ( )
A) Non-vital Input B) Non-vital Output C) Vital Output D) Vital Input

101) MEI 633 is of ---------- architecture ( )
a) 2 Out of 2 b) 1 Out of 1 c) 2 Out of 3 d) 2 Out of 4

102) Cycle time in MEI633 is ---------- ( )
a) 222ms b) 111ms c) 444ms d) 333ms

103) Intercommunication between MEI633 and the OCs is ---------- ( )
a) CLA b) RS-232/OFC c) RS 485/OFC d) RS-423

104) Input supply for the Mini IPS provided in Medha EI room is ---------- ( )
a) 24V DC b) 230V AC c) 110V AC d) 110V DC

105) The output supply of Dc-Dc converters in the Mini IPS of MEI 633 is -------( )
a) 24V DC b) 12V DC c) 110V DC d) 60V DC

106) Inter communication between MEI 633 and data logger is ---------- ( )
a) RS-485/OFC b) CLA
c) RS-232/OFC d) RS-423

107) Max No of OCs that can be connected to MEI 633 is ---------- ( )
a) 64 b) 128 c) 16 d) 32

108) Max No of Input cards can be provided in each OC is ------ in MEI 633 ( )
a) 6 b) 4 c) 5 d) 3

109) Max No of output cards can be provided in each OC is ----- in MEI 633 ( )
a) 6 b) 4 c) 5 d) 3

110) Max No of inputs can be connected to each Vital I/P card is -- in MEI 633 ( )
a) 8 b) 16 c) 32 d) 12

111) MEI 633, max. no. of outputs can be connected to each Vital O/P card is --( )
a) 4 b) 16 c) 32 d) 8

112) --------- type of power supply card is provided for CVC/VIC card in MEI 633 ( )
a) B TYPE b) C TYPE c) A TYPE d) D TYPE

113) -------- type of power supply card is provided for CCC card in MEI 633. ( )
a) B TYPE b) C TYPE c) A TYPE d) D TYPE

114) -------- type of power supply cards are provided for OCs in MEI 633. ( )
a) A & B TYPE b) B & C TYPE
c) C & D TYPE d) A & D TYPE

115) --------- type of power supply cards are provided for PP in MEI 633. ( )
a) A & B TYPE b) B & C TYPE
c) C & D TYPE d) A & D TYPE

116) --------- No of Rs485 serial ports are available at CIU in MEI 633 ( )
a) 16 b) 12 c) 8 d) 10

117) --------- No of Rs232 serial ports are available at CIU in MEI 633 ( )
a) 3 b) 8 c) 4 d) 2

118) ERROR messages are displayed on ---------- of CIU in MEI 633 ( )
a) FDP b) FMS c) VIF d) FPD

119) Max No of vital I/Os that can be handled by an CIU of MEI 633 is ----- ( )
a) 4072 b) 2048 c) 1048 d) 3072

120) Max No of Non vital I/Os that can be handled by an CIU of MEI 633 --- ( )
a) 4072 b) 2048 c) 1048 d) 3072

121) In Medha EI, RM means ---------- ( )
a) Random Memory b) Relay Module
c) Ring Modem d) Repetition Maximum

122) In Medha EI, RMs acts like---------- converter ( )
a) Serial to OFC b) serial to parallel
c) Parallel-OFC d) serial-USB

123) In each port of CIU ---------- No of OCs can be connected in MEI 633. ( )
a) 8 b) 6 c) 4 d) 32

124) CIF card is used in ---------- in MEI 633 ( )
a) OC b) PP c) MT d) CIU

125) In MEI 633, The rated voltage of VCOR---------- ( )
a) 12V DC b) 5 V DC c) 60V DC d) 24V DC

126) MEI 633 has ---------- standby arrangement ( )
a) Hot b) Warm c) Cold d) None

127) Max response time for MEI 633 is ---------- ( )
a) < 1 sec b) < 2 sec c) < 3 sec d) < 4 sec

128) Intercommunication between MEI 633 and the PP is ---------- ( )
a) Parallel b) Rs-232 c) OFC d) Rs-423

129) Input supply for the PSB cards provided in Medha EI is ---------- ( )
a) 5V DC b) 24V DC c) 12V DC d) 4.8V DC

130) The output supply of PSB in MEI 633 is ---------- ( )
a) 4.5V DC b) 5.5V DC c) 4.8V DC d) 5.8V DC

131) ---------- communication channel provide between MEI 633 and MTC ( )
a) Rs-423 b) Rs-232 c) CLA d) Rs-485

132) Max No of CIUs that can be inter connected to MEI 633 is ---------- ( )
a) 2 to 4 b) 2 to 6 c) 2 to 5 d) 2 to 3

133) Max No of RS 485 channels provided in each CIU is ---------- ( )
a) 8 b) 12 c) 10 d) 16

134) Max No of RS 232 channels provided in each CIU is ---------- ( )
a) 6 b) 5 c) 4 d) 3

135) Max No of I/Ps connected to each NV Input card of PP ----- in MEI 633 ( )
a) 8 b) 16 c) 64 d) 128

136) Max no of O/Ps can be connected to each NV O/P card of PP -- in MEI 633( )
a) 8 b) 16 c) 128 d) 64

137) 'A' - type of power supply card is provided for_____ in MEI 633. ( )
a) CIU b) OC c) COUNTER BOX d) PP

138) 'C'-type of power supply card is provided for ---------- in MEI 633 ( )
a) CIU b) OC c) COUNTER BOX d) PP

139) 'B'-type of power supply cards are provided for ---------- in MEI 633 ( )
a) CIU b) Mini IPS c) MTC d) Data logger

140) Voltage & Current rating of 'B' type of power supply cards ------ in MEI 633 ( )
a) 4.5V @ 8A b) 4.5V @ 3A c) 4.5V @ 6A d) 4.5V @ 2A

141) Voltage & Current rating of 'C' type of power supply cards ----- in MEI 633 ( )
a) 4.5V @ 8A b) 4.5V @ 3A c) 4.5V @ 6A, 5.8@ 2A d) 4.5V @ 2A

142) Voltage & Current rating of 'A' type of power supply cards ---- in MEI 633 ( )
a) 4.5V @ 8A b) 4.5V @ 3A c) 4.5V @ 6A d) 4.5V @ 2A

143) Counter digits are displayed on ---------- in MEI 633 ( )
a) CIU b) OC c) COUNTER BOX Module d) PP

144) Max No of Routes that can be handled by an CIU of MEI 633 --------- ( )
a) 250 b) 350 c) 450 d) 550

145) ---------- type of SPD is provided in 24V DC supply in MEI 633 ( )
a) A b) B c) C d) D

146) WFM means ---------- in MEI 633 ( )
a) Point function module b) Point frequency module
c) Wayside function module d) Wayside frequency module

147) WFP means ---------- in MEI 633 ( )
a) Warm function processor b) Warm frontend processor
c) Wayside frontend processor d) Wayside function processor

148) In each port of CIU ------- No of PPs / VDUs can be connected in MEI 633 ( )
a) 4 b) 3 c) 2 d) 1

149) ORLD card is used in ---------- in MEI 633 ( )
a) CIU b) OC c) COUNTER BOX d) PP

150) The rated current of VCOR ---------- in MEI 633 ( )
a) 4 b) 3 c) 2 d) 1

151) WESTRACE EI has ------ Architecture ( )
a) 1 out of 2 logic b) 1 out of 1 logic
c) 2 out of 2 logic d) 2 out of 1 logic

152) VLM means ---------- in Westrace EI. ( )
a) Vital link model b) Vital link module
c) Vital logic model d) Vital logic module

153) NCDM means ---------- in Westrace EI. ( )
a) Network centre debug module
b) Network centre diagnosis model
c) Network communication debug module
d) Network communication diagnostic module

154) VLM includes ---------- in Westrace EI. ( )
a) VLC & PFM b) VLC & PSU
c) VLC & OPC d) VLC& VLOM

155) NCDM includes ---------- in Westrace EI. ( )
a) NCDC & PFM b) NCDC& PSU
c) NCDC & OPC d) NCDC & VLOM

156) WESTCAD is used for ---------- in Westrace EI. ( )
a) MT b) VDU c) PP d) CTC

157) MOVOLAW is used as ---------- inWestrace EI. ( )
a) MT b) VDU c) PP d) CTC

158) One WESTRACE consists of Max ---------- Housings in Westrace EI. ( )
a) 1 b) 2 c) 3 d) 4

159) One Housing consists of ---------- No of slots in Westrace EI. ( )
a) 14 b) 16 c) 18 d) 20

160) First Housing can accommodate Max ---------- I/O Modules in Westrace EI. (
) a) 9 b) 7 c) 5 d) 3

161) Other than 1st Housing can accommodate max----------I/O Modules in Westrace EI. ( )
a) 9 b) 7 c) 5 d) 3

162) VLM to be located in ---------- slots in Westrace EI. ( )
a) 1 & 2 b) 2 & 3 c) 3 & 4 d) 4 & 5

163) NCDM to be located in ---------- slots in Westrace EI. ( )
a) 1 b) 2 c) 3 & 4 d) 4

164) In WESTRACE EI, Vital O/P module is named as ----- in Westrace EI. ( )
a) VPOM b) VIOM c) VROM d) VLOM

165) In WESTRACE EI, Vital I/P module is named as ------ in Westrace EI. ( )
a) VPIM b) VRIM c) VLIM d) VIOM

166) In WESTRACE EI, Max No of I/Ps that can be connected to a Vital I/P module is ---------- ( )
a) 8 b) 10 c) 12 d) 16

167) In WESTRACE EI, Max No of O/Ps that can be connected to a Vital O/P module is ---------- ( )
a) 8 b) 10 c) 12 d) 16

168) How many WETRACE EI units can be interconnected? ( )
a) 8 b) 10 c) 12 d) 16

169) NCDM consists of ---------- Serial COM ports in Westrace EI. ( )
a) 1 b) 2 c) 3 d) 4

170) NCDM consists of ---------- Ethernet COM ports in Westrace EI. ( )
a) 1 b) 2 c) 3 d) 4

171) NCDM consists of ---------- OFC ports in Westrace EI. ( )
a) 1 b) 2 c) 3 d) 4

172) IHCL is used for ---------- in Westrace EI. ( )
a) Interconnects between VLC & OPC
b) Interconnects between VLM & NCDM
c) Intercommunication between NCDM to NCDM
d) Intercommunication between VLM to VLM

173) INCL is used for ---------- in Westrace EI. ( )
a) Interconnects between VLC & OPC
b) Interconnects between VLM & NCDM
c) Intercommunication between NCDM to NCDM
d) Intercommunication between VLM to VLM

174) WESTRACE EI can be connected through ---------- port . ( )
a) SERIAL b) ETHERNET c) OFC d) PARALLEL

175) PFM means ---------- in Westrace EI. ( )
a) Power Factor Module b) Power filter module
c) Protection factor module d) Protection filter module

176) OPCR works on ---------- voltage in Westrace EI. ( )
a) 12V DC b) 24V DC c) 50V DC d) 60V DC

177) In WESTRACE EI, the RJ 45 connector is provided in ---------- card ( )
a) VLM b) NCDM c) VPIM d) VROM

178) In WESTRACE EI, OFC ports are provided in ---------- card ( )
a) VLM b) NCDM c) VPIM d) VROM

179) VDU is to be connected to ---------- port in Westrace EI. ( )
a) Ethernet b) OFC c) Parallel d) Serial / Ethernet

180) Moviolaw can be connected to ---------- port ( )
a) Ethernet / serial b) OFC c) Parallel d) Serial

181) In WESTRACE EI, External data logger can be connected to --------- port ( )
a) Serial b) Parallel c) OFC d) Ethernet

182) System Input supply for the WESTRACE EI is -------- ( )
a) 12v & 60v DC b) 24v & 50v DC
c) 24v & 60v DC d) 12v & 60 v DC

183) In WESTRACE EI, Slot No --------- is dedicated for PSU ( )
a) 1 b) 2 c) 15 d) 16

184) In WESTRACE EI, blank slot is filled with ---------- ( )
a) OPC card b) Blanker card c) VPIM card d) VROM card

185) In WESTRACE EI, Slot no 1&15 in the1st Housing filled with ---------- ( )
a) VROM card b) VPIM card c) Blanker card d) VLOM card

186) In WESTRACE EI, VSEV means ---------- ( )
a) Virtual serial emergency voltage b) Vital serial enable voltage
c) Virtual serial enable voltage d) Vital serial emergency voltage

187) In WESTR\ACE EI, VSEV voltage is meant for ---------- ( )
a) OPCR energization b) Hot standby synchronization
c) Warm standby d) Stand alone working

188) In WESTRACE EI, VSEV voltage is ---------- ( )
a) 5v DC b) 12v DC c) 24v DC d) 50v DC

189) In WESTRACE EI, the ---------- is provided as mini mother board for VLM & NCDM ( )
a) UHVBC b) UHVLM c) UHNCDM d) UHPSU

190) In WESTRACE EI, One PSU can be connected to Max ---------- Housings. ( )
a) 4 b) 3 c) 2 d) 1

191) Max ------ No of I/O modules can be accommodated in an WESTRACE ( )
a) 16 b) 26 c) 14 d) 12

192) The output voltage of VROM is ---------- in Westrace EI. ( )
a) 5v DC b) 12v DC c) 24v DC d) 50v DC

193) ---------- voltage relays used as Vital O/P relays in the WESTRACE EI ( )
a) Q Series 50v b) Q Series 12v c) K-50 60v d) Q series 24v

194) ---------- voltage relays used as Vital I/P relays in the WESTRACE EI ( )
a) Q Series 50v b) Q Series 12v c) K-50 60v d) Q series 24v

195) Input range of PSU in WESTRACE EI is ---------- ( )
a) 10-18v DC b) 15-25V DC c) 18-30V DC d) 16.5-26.5V DC

196) PCGE is used for ---------- generation in Westrace EI. ( )
a) User data log files b) Application logic files
c) Station Layout files for VDU d) Maintenance tool files

197) The interlocking circuits in the WESTRACE EI is called as ---------- ( )
a) Rings b) Rungs c) Rongs d) Rangs

198) ---------- logic is used for writing WESTRACE Application program ( )
a) Ladder b) Gate c) Maxwell d) Boolean

199) In WESTRACE EI, PFM is used as ---------- ( )
a. SPD b. LPD c. MOV d. ELD

200) CAT 5 cable is used for -------- communication in WESTRACE EI. ( )
a. Serial b. OFC c. Parallel d. Ethernet

ANSWERS KEY

1	2	3	4	5	6	7	8	9	10
a	c	b	b	B	d	b	b	c	D
11	12	13	14	15	16	17	18	19	20
d	b	b	c	A	a	d	a	a	B
21	22	23	24	25	26	27	28	29	30
a	c	d	b	A	b	a	a	c	B
31	32	33	34	35	36	37	38	39	40
C	D	B	C	B	A	C	B	A	B
41	42	43	44	45	46	47	48	49	50
B	C	B	A	B	A	B	C	B	C
51	52	53	54	55	56	57	58	59	60
A	B	A	B	A	B	B	C	C	C
61	62	63	64	65	66	67	68	69	70
C	A	B	C	C	D	A	B	C	B
71	72	73	74	75	76	77	78	79	80
D	C	B	A	D	C	C	B	B	C
81	82	83	84	85	86	87	88	89	90
B	B	B	D	C	D	A	D	B	B
91	92	93	94	95	96	97	98	99	100
B	B	A	D	D	C	C	B	C	C
101	102	103	104	105	106	107	108	109	110
a	d	c	d	A	c	d	c	d	A
111	112	113	114	115	116	117	118	119	120
d	a	a	b	A	b	a	d	b	D
121	122	123	124	125	126	127	128	129	130
c	a	c	d	D	a	c	c	b	D
131	132	133	134	135	136	137	138	139	140
b	a	b	d	C	d	d	b	a	B
141	142	143	144	145	146	147	148	149	150
c	a	c	c	D	c	d	a	b	B
151	152	153	154	155	156	157	158	159	160
b	d	d	c	C	b	a	d	b	C
161	162	163	164	165	166	167	168	169	170
b	b	d	c	A	c	a	d	c	A
171	172	173	174	175	176	177	178	179	180
b	d	c	a	D	c	b	b	d	A
181	182	183	184	185	186	187	188	189	190
a	b	d	b	C	b	b	c	a	C
191	192	193	194	195	196	197	198	199	200
b	d	a	d	C	c	b	a	a	D

DATA LOGGER

1) In EFFTRONICS Data logger, capacity of each Digital input card is___inputs ( )
   a) 16 b) 32 c) 64 d) 512

2) In Efftronics Data logger, all Digital inputs are scanned at the rate of____ ( )
   a) 16 m.sec b) 32 m.sec c) less than 1 sec d) 1 min.

3) In Efftronics Data loggers, all the Analog inputs are scanned at the rate of ( )
   a) less than 3 m.sec b) less than 2 m.sec
   c) less than 1 sec d) less than 1 min.

4) Max. Digital input capacity of each DSU in Efftronics Data logger system is___( )
   a) 64 b) 512 c) 1024 d) 4096

5) Max. Digital input capacity of Efftronics Data logger system is_____ ( )
   a) 64 b) 512 c) 1024 d) 4096

6) Max. Analog input capacity of Efftronics Data logger system is_____ ( )
   a) 24 b) 48 c) 64 d) 96

7) In Efftronics Data loggers, additional DSU is required only when the system is required to be connected with more than_____no. of relays ( )
   a) 64 b) 512 c) 1024 d) 4096

8) In Efftronics Data logger, each DSU is provided with maximum_____no. of Digital input cards. ( )
   a) 4 b) 8 c) 12 d) 16

9) In Efftronics Data logger, each ASU is provided with_____no. of Analog input cards. ( )
   a) 4 b) 2 c)6 d) 8

10) In Efftronics Data logger, each Analog input card can be connected with _____no. of Analog inputs. ( )
   a) 4 b) 2 c)6 d) 8

11) In Efftronics data logger, the total Analog input capacity of each ASU is ( )
   a) 4 b) 8 c) 16 d) 32

12) In Efftronics data logger, each digital input will carry_____current ( )
   a) 10 mA b) 5 mA c) 15 mA d) 20 mA

13) FEP means_____ ( )
   a) Feed end program b) Feed end processor
   c) Front end processor d) none

14) The Central Monitoring Unit is capable of_____ ( )
   a) collects the data from the FEP b) stores data
   c) processes for report generation and analysis d) All above

15) CPU Module has___ports for serial communication in Efftronics data logger ( )
a) 4 b) 8 c) 16 d) 32

16) In Efftronics data logger,_____voltage is taken for digital / PFC contacts ( )
a) +ve 24 VDC EXT b) -ve 24 VDC EXT
c) DL GND d) Any one of the above

17) _____Microprocessor used in Efftronics data logger ( )
a) 68332 b) 68000 c) 6800 d) 66000

18) In Efftronics data logger, the analog AC voltages shall be_____ ( )
a) Given directly to DL
b) Converted to DC voltage and fed to DL
c) connected to 1:1 transformer and fed to DL
d) all

19) In Efftronics data logger if CPU module is running normally, on front side of display the following_____will be in "ON" position ( )
a) Power LED b) Run LED c) Health LED d) all

20) Rating of DC-DC converter for up to 1024 inputs data logger_____ ( )
a) 5A b) 10A c) 15A d) 32A

21) Rating of DC-DC converter for 1025 to 2048 inputs data logger_____ ( )
a) 5A b) 10A c) 15A d) 32A

22) Rating of DC-DC converter for 2049 to 4096 inputs data logger_____ ( )
a) 5A b) 10A c) 15A d) 32A

23) In Efftronics data logger networking_____software is used ( )
a) MDNL b) NMDL c) MTNL d) LMDN

24) Signal bobbing fault logic belongs to_____related from RDSO 2011 logics ( )
a) Safety b) Maintenance c) Operational d) none

25) Track bobbing fault logic belongs to_____related from RDSO 2011 logics ( )
a) Safety b) Maintenance c) Operational d) none

26) Point bobbing logic belongs to_____related from RDSO 2011 logics ( )
a) Safety b) Maintenance c) Operational d) none

27) Point failure logic belongs to_____related from RDSO 2011 logics ( )
a) Safety b) Maintenance c) Operational d) none

28) Sluggish operation of point logic belongs to __ related from RDSO 2011 logics ( )
a) Safety b) Maintenance c) Operational d) none

29) Track circuit failure fault logic belongs to_____related from RDSO 2011 logics ( )
a) Safety b) Maintenance c) Operational d) none

30) Signal blanking fault logic belongs to_____related from RDSO 2011 logics ( )
a) Safety b) Maintenance c) Operational d) none

31) Signal flying back to danger fault logic belongs to_____related from RDSO 2011 logics ( )
a) Safety b) Maintenance c) Operational d) none

32) Point loose packing fault logic belongs to _ related from RDSO 2011 logics ( )
a) Safety b) Maintenance c) Operational d) none

33) Point burst fault logic belongs to_____related from RDSO 2011 logics ( )
a) Safety b) Maintenance c) Operational d) none

34) Clearing of signal without route locking fault logic belongs to_____related from RDSO 2011 logics ( )
a) Safety b) Maintenance c) Operational d) none

35) Passing of danger signal fault logic belongs to_____related from RDSO 2011 logics ( )
a) Safety b) Maintenance c) Operational d) none

36) Train passing blank signal fault logic belongs to_____related from RDSO 2011 logics ( )
a) Safety b) Maintenance c) Operational d) none

37) Late start of train fault logic belongs to_____related from RDSO 2011 logics ( )
a) Safety b) Maintenance c) Operational d) none

38) Late closure of LC gate fault logic belongs to_____related from RDSO 2011 logics ( )
a) Safety b) Maintenance c) Operational d) none

39) Premature operation of Double line block to TOL fault logic belongs to _____ related from RDSO 2011 logics ( )
a) Safety b) Maintenance c) Operational d) none

40) In Efftronics data logger_____is possible. ( )
a) On Line simulation b) OFF Line simulation
c) Both a & b d) none

41) Data logger in various stations can be interconnected in a network by using ( )
a) Quad cable b) Microwave
c) OFC d) All the above

42) The DIP switches to set the unique Identification number to each data logger is provided in the_____card In Efftronics data logger ( )
a) DSU b) ASU c) CPU d) Front panel

43) Data logger acts like a “Black box” which can ( )

a) scan the events

b) store the events

c) Process the data for generating various user-friendly reports.

d) All the above

44) Data loggers can be connected in the network which help in monitoring ( )

a) PI b) RRI c) EI d) All

45) _____number of digital inputs shall be connected to Efftronics RTU ( )

a) 16 b) 48 c) 24 d) 64

46) _____number of Analog inputs shall be connected to Efftronics RTU ( )

a) 16 b) 64 c) 84 d) 96

47) The CMU is having the_____software to retrieve data from all networked data logger ( )

a) Graphical User Interface (GUI) b) Database

c) Spreadsheet d) None

48) Data logger is suitable for working on_____areas ( )

a) Non-RE area b) RE area c) DC electrified d) All

49) The working voltage of data logger is ( )

a) 230 V AC b) 110 V AC c) 110 V DC d) 24 V DC

50) In Efftronics data logger has the facility to log minimum_____events with First-In First-Out (FIFO) logic ( )

a) 6 lakhs b) 8 lakhs c) 10 lakhs d) 12 lakhs

ANSWERS KEY

1	2	3	4	5	6	7	8	9	10
C	a	c	b	D	d	b	b	b	D
11	12	13	14	15	16	17	18	19	20
C	a	c	d	C	c	b	b	d	A
21	22	23	24	25	26	27	28	29	30
B	c	b	b	b	b	b	b	b	B
31	32	33	34	35	36	37	38	39	40
B	b	a	a	a	a	c	c	c	C
41	42	43	44	45	46	47	48	49	50
D	c	d	d	d	a	a	d	d	C

STORES, TENDERS & CONTRACTS

1) AAC means_____ ( )
   a) Anticipated Annual Consumption b) Actual Annual Consumption
   c) Allowed Annual consumption d) None

2) DMTR should be verified and signed by store in charge SSE ( )
   a) Once in week b) Once in fortnight
   c) Once in month d) None of the above

3) Periodicity of Stock verification of Imprest stores ( )
   a) 1 year b) 3 years
   c) 2 years d) 4 years

4) Multimeter comes under_____category of stores ( )
   a) Dead stock b) T&P
   c) Imprest d) Consumable

5) Advice note for returned stores is written in the form ( )
   a) S1605 b) S1539 c) S1622 d) None of the above

6) Adjustment Memo Form no ( )
   a) S1532 b) S1605 c) E-1461 d) S1302

7) Requisition for collection of material for store depot to be submitted on Form no ( )
   a) S1302 b) S1622
   c) S1313 d) None of the above

8) A stock verification report is prepared on Form no ( )
   a) S 1622 b) S1260
   c) S 1302 d) S1605.

9) In a PL No., the first two digits indicate_____ ( )
   a) Main Group b) Sub Group
   c) S.No of the item d) Check digit

10) In a P.L No, the subgroup to which an item belong to is represented by ( )
   a) First two digits b) 3rd & 4th digits
   c) 5th & 6th digits d) 2nd & 3rd digits

11) Principal head of stores department in a Zonal Railway is ( )
   a) Chief Material Manager
   b) Controller of Stores
   c) Principal Chief Material Manager
   d) Chief Controller of Stores & Purchases

12) Which one of the system of codification is followed in Indian Railways for codification of stores items ( )

a) Fully significant coding system b) Semi significant coding system
c) Non significant coding system d) Color codification coding system

13) In Indian Railways, "A" category item represents what percentage of total consumption value ( )
a) 50% b) 60% c) 70% d) 90%

14) In "ABC" analysis, "A" category item represents ( )
a) Low consumption value item b) Important item
c) High annual consumption value item d) high cost item

15) In V- E- D analysis, V stands for ( )
a) Vague items b) Vital items
c) Very important items d) Very costly items

16) Buffer stock limit depend on_____ ( )
a) ABC classification of the item
b) VDE classification of the item
c) Combination of ABC & VED classification of the item
d) Stock & Non Stock classification of the item

17) Buffer stock is provided_____ ( )
a) To meet unforeseen requirement
b) To supply items to other users
c) To make good, short fall due to theft, deterioration etc
d) To have items out of stock

18) An item was not issued to any user for the past 24 months, but it is likely to be issued in the near. This item will be classified as ( )
a) Dead surplus b) Custody stores
c) Movable surplus d) imprest stores

19) An item was not issued to any user for the past 24 months, and is not likely to be utilized on any railway in next 2 years. ( )
a) Dead surplus b) Custody stores
c) Movable surplus d) imprest stores

20) PAC means ( )
a) Proprietary Article certificate b) Party Assurance certificate
b) Private Article certificate d) None of the above

21) Proprietary article certificate is issued for an item required to be purchased from ( )
a) Single firm only b) RDSO approved firms only
c) Approved firm only d) None of the above

22) Inactive items are those stock items, stock of which (c)

a) Is unserviceable
b) More than 3 months old
c) Not been issued to any user for the last 12 months
d) Is more than the requirement for the next 24 months

23) Similar nature of work will be issued by ( )

a) DRM b) PCSTE c) PFA d) None of the above

24) No eligibility criteria is required for tenders up to Value of ( )

a) Upto 20 lakhs b) Upto 40 lakhs c) Upto 100 lakhs d) Upto50 lakhs

25) Value of Earnest Money Deposit to be paid by the tenderer along with tender document up to 1crore tender ( )

a) 2% of tender value b) 3% of tender value
c) 4% of tender Value d) 5% of tender value

26) Performance guarantee to be paid by the Tenderer after awarding the work ( )

a) 10%of contract value b) 20% of contract Value
c) 5% of contract value d) 2% of contract Value

27) _____% of Security Deposit have to be collected from contractor through on going bills ( )

a) 10%of contract value b) 20% of contract Value
c) 25% of contract value d) 5% of contract Value

28) Normal notice period for calling open tenders ( )

a) 30 days b) 21 days
c) 14 days d) 45 days

29) Powers of Sr DSTE (JAG) for calling quotations duly dispensing tender without finance concurrence for safety works ( )

a) 5 Lakhs b) 2 Lakhs
c) 10 Lakhs d) 8 Lakhs

30) In how many days the tenderer has to pay PG without penal interest after issuing Letter of acceptance ( )

a) 21 days b) 30 days
c) 45 days d) 60 days

31) SSE who recorded the measurements in the Measurement Book is responsible for_____% check ( )

a) 25 % b) 100% c) 50% d) 75%

32) RDSO inspection is required for the following material ( )

a) Relay Racks b) Fuses & Fuse block c) Hylam Sheet d) None

33) Variation of quantities for execution is permitted up to_____% at same rates( )

a) Up to 125% b) Up to 125%to 140%

c) Up to 140 to 150% d) Beyond 150%

34) Variation of quantities for execution is permitted up to_____% at same rates( )

a) Up to 125% b) Up to 125%to 140%

c) Up to 140 to 150% d) Beyond 150%

35) Introduction of new NS item of value_____without finance occurrence( )

a) 2 Lakhs or 5% contract value whichever is less

b) 3 lakhs or 10%contract value whichever is less

c) 5 lakhs or 5%contract value whichever is less

d) 5 lakhs or 10%contract value whichever is less

36) Execution of schedule items less than 75% requires approval of_____( )

a) SAG officer b) JAG officer c) SS officer d) JS officer

37)Non performing contract can be terminated after issuing_____and_____notice ( )

a) 21 days & 48 Hrs b) 7 Days & 48 Hrs

c) 15 days & 24 Hrs d) None of the above

38) Security deposit (SD) will be released only after ( )

a) Work completion

b) Final bill

c) Maintenance period

d) None of the above

39) Performance Guarantee (PG) will be released after ( )

a) Work completion

b) Final bill

c) Maintenance period

d) None of the above

ANSWERS KEY

1	2	3	4	5	6	7	8	9	10
A	a	c	b	b	c	a	b	a	b
11	12	13	14	15	16	17	18	19	20
C	b	c	c	b	c	a	c	a	a
21	22	23	24	25	26	27	28	29	30
A	c	b	d	a	c	d	b	b	a
31	32	33	34	35	36	37	38	39	40
B	b	a	a	c	a	b	c	b	

RAJBASHA

1) What is the Official Language of Union of India? ( )
   a) English b) Urdu
   c) Telugu d) Hindi in Devanagari Script

2) As per Article 343(1) of the constitution when Hindi became the official language of the Union of India ( )
   a) 26.01.1963 b) 26.01.1964 c) 26.01.1965 d) 26.01.1966

3) When the Constitution was adopted, how many languages were included initially in the Eighth Schedule ( )
   a) 11 b) 22 c) 15 d) 16

4) When was Official Language Act 1963 passed ( )
   a) 10.05.1963 b) 10.04.1963 c) 10.065.1963 d) 11.05.1963

5) When did the section 3(3) of the Official Language Act take effect ( )
   a) 25 .01.1963 b) 26.01.1963 c) 26.01.1965 d) 14.01.1965

6) When was the official Language Act, 1963 was amended ( )
   a) 1965 b) 1966 c) 1967 d) 1968

7) When was Official Languages Rules passed ( )
   a) 1963 b) 1964 c) 1973 d) 1976

8) When was Official Languages Rules amended ( )
   a) 1987 b) 1988 c) 1963 d) 1965

9) Into how many Regions Indian states have been classified, according to official Languages Rules ( )
   a) 2 b) 3 c) 4 d) 5

10) What are all the 3 Regions as classified under Official Languages Rules ( )
   a) A & B b) B & C c) A & C d) A, B & C

11) When “Hindi Day” is celebrated every year? ( )
   a) 14th sep b) 2nd oct c) 14th oct d) 2nd sep

12) States:(i) Uttar Pradesh (ii) Uttaranchal (iii) Bihar (iv) Jharkhand (v) Haryana (vi) Himachal Pradesh (vii) Madhya Pradesh (viii) Chhattisgarh (ix) Rajasthan, Union Territory: (i) Andaman & Nicobar Island, Group NCT: (i) Delhi…falls under Region ( )
   a) A & B b) B & C c) A d) B

13) States: (i) Maharashtra (ii) Gujarat (iii) Punjab
Union Territory: (i) Chandigarh (ii) Daman and Diu (iii) Dadar and Nagar Haveli …
falls under Region ( )
a) A & B b) B & C c) A d) B

14) States: (i) Karnataka (ii) Tamilnadu (iii) Kerala (iv) Andhra Pradesh (v) Telangana (vi) Odisha (vii) West Bengal (viii) Goa (ix) Jammu and Kashmir (x) Assam (xi) Nagaland (xii) Meghalaya (xiii) Arunachal Pradesh (xiv) Sikkim (xv) Tripura (xvi) Mizoram (xvii) Manipur,
Union Territory: (i) Pondicherry (ii) Lakshadweep…falls under Region ( )
a) B b) C c) A & B d) B & C

15) Which Ministry takes important decisions pertaining to Official Language ( )
a) Railways b) Home
c) Human Resource d) Culture

16) In which year the post of Hindi Assistant was created in Railway Board in compliance of President's order ( )
a) 1947 b) 1950 c) 1952 d) 1953

17) Who was the Railway Minister when the Hindi Translation of Railway Budget was prepared in the year 1956 ( )
a) Shri Lal Bahadur Shastri b) Shri Jawaharlal Nehru
c) Smt Indira Gandhi d) Shri Gulzarilal Nanda

18) Who is the Chairman of Central Hindi Samiti (Committee) ( )
a) President b) Home minister
c) External affairs minister d) Prime Minister

19) The Central Hindi Samiti (Committee) comes under which Ministry ( )
a) External affairs b) Railways c) Home d) Culture

20) After Independence, initially which Ministry was entrusted the duty of training Central Government Staff in Hindi ( )
a) external affairs b) Education c) home d) Culture

21) How many members are there in the Parliamentary Committee on Official Language ( )
a) 10 b) 20 c) 30 d) 35

22) How many Lok Sabha members are there in the Parliamentary Committee on Official Language ( )

a) 10 b) 20 c) 30 d) 32

23) How many Rajya Sabha members are there in the Parliamentary Committee on Official Language ( )

a) 5 b) 7 c) 8 d) 10

24) At present, how many Sub-Committees are there in the Parliamentary Committee on Official Language ( )

a) 3 b) 7 c) 8 d) 10

25) Which Sub-Committee of Parliamentary Committee on Official Language inspects the offices of Railway Ministry ( )

a) 1st b) 2nd c) 3rd d) none

26) What is the periodicity of the meetings of Official Language Implementation Committee is once in ( )

a) 1 b) 2 c) 3 d) 6

27) Which Ministry prepares Annual Programs on Official Language ( )

a) Railways b) Home c) Defense d) Broad casting

28) The Question Papers of departmental examination must be provided in which language ( )

a) Hindi b) Regional c) no such norms d) Hindi & English

29) How many Hindi courses are prescribed for Central Govt. employees ( )

a) Prabodh b) Praveen c) Pragya and Parangat d) All

30) Which is the elementary Hindi course prescribed for Central Govt. employees( )

a) Pragya b) Praveen c) Prabodh d) Parangat

31) Which is the final Hindi course prescribed for Central Govt. employees ( )

a) Pragya b) Praveen c) Prabodh d) Parangat

32) What are all the training facilities available to a Central Govt. Employee to get trained in these Hindi courses ( )

a) All b) Regular c) Intensive d) Correspondence & Private

33) What is the duration of each Hindi course? (Except Intensive Training) ( )

a) 2 months b) 3 months c) 5 months d) 6 months

34) How many times Hindi examinations (except Intensive Training) are conducted in a year ( )

a) 1 b) 2 c) 3 d) 4

35) What are all the months in which Hindi examinations are usually conducted ( )

a) April & September b) May & October

c) May & November d) June & December

36) In how many working days Prabodh course is conducted under Intensive Training ( )

a) 20 b) 25 c) 30 d) 35

37) In how many Working days Praveen course is conducted under Intensive Training ( )

a) 20 b) 25 c) 30 d) 35

38) In how many working days Pragya course is conducted under Intensive Training ( )

a) 7 b) 10 c) 15 d) 20

39) When will an employee become eligible for Cash Award after passing Hindi Examinations ( )

a) get above 35% in written b) get above 45% in written

c) get above 55% in written d) get above 60% in written

40) What is the amount of Cash Award for Passing Hindi Typing with 90% or more but less than 95% of marks ( )

a) Rs 400 b)) Rs 600 c) Rs 800 d) Rs 1200

41) What are all the incentives given for passing Hindi Examinations ( )

a) Cash Award b) Lumpsum Award & Personal

c) a & b d) None

42) What is the amount of Cash Award for Passing Prabodh with 55% or more but less than 60% of marks ( )

a) Rs 400 b) Rs 450 c) Rs 500 d) Rs 550

43) What is the amount of Cash Award for Passing Prabodh with 60% or more but less than 70% of marks ( )

a) Rs 750 b) Rs 800 c) Rs 850 d) Rs 900

44) What is the amount of Cash Award for Passing Prabodh with 70% or more marks( )

a) Rs 1200 b) Rs 1400 c) Rs 1600 d) Rs 1800

45) What is the amount of Cash Award for Passing Praveen with 55% or more but less than 60% of marks ( )

a) Rs 200 b) Rs 400 c) Rs 600 d) Rs 800

46) What is the amount of Cash Award for Passing Praveen with 60% or more but less than 70% of marks ( )

a) Rs 1200 b) Rs 1300 c) Rs 1500 d) Rs 1700

47) What is the amount of Cash Award for Passing Praveen with 70% or more marks ( )

a) Rs 1200 b) Rs 1400 c) Rs 1600 d) Rs 1800

48) What is the amount of Cash Award for Passing Pragya with 55% or more but less than 60% of marks ( )

a) Rs 400 b) Rs 600 c) Rs 800 d) Rs 1200

49) What is the amount of Cash Award for Passing Pragya with 60% or more but less than 70% of marks ( )

a) Rs 1400 b) Rs 1600 c) Rs 1800 d) Rs 2400

50) What is the amount of Cash Award for Passing Pragya with 70% or more marks( )

a) Rs 2400 b) Rs 1800 c) Rs 1600 d) Rs 1200

ANSWERS KEY

1	2	3	4	5	6	7	8	9	10
d	c	b	a	c	c	d	a	b	d
11	12	13	14	15	16	17	18	19	20
a	c	d	b	b	c	a	d	c	b
21	22	23	24	25	26	27	28	29	30
c	b	d	a	b	c	b	d	d	c
31	32	33	34	35	36	37	38	39	40
a	a	d	b	c	b	a	c	c	c
41	42	43	44	45	46	47	48	49	50
c	a	b	c	d	a	d	c	b	a

1.	In closed Track Circuit, feed end contains A) Battery only B) Regulating resistance only C) Battery charger only D) Battery, regulating resistance and Battery charger
2.	In DC track circuit, a resistance called Regulating Resistance is connected in--------with feed end A) Series B) parallel C) series-parallel D) not connected
3.	Regulating resistance does not serve the following purpose A) It adjust the relay end voltage B) It protects the feed end equipment C) It causes voltage drop D)It protects the relay
4.	A series resistance of 0 -15 Ohms with ----------ohms tapping is used in Non-RE A)1,2,3,4 B)1, 2, 4, 8 C)2,3,4,5 D)3,4,5,6
5.	A series resistance of 0 -30 Ohms with ----------ohms tapping is used in RE area A)1,2,3,4 C)2,3,4,5 D)3,4,5,6 D)2, 4, 8, 16
6.	Minimum percentage release of track relays should be A)50% B)60% C)68% D)78%
7.	Ballast resistance is---------- proportional to the length of Track circuit A)directly B)inversely C)not proportional D)equal
8.	Minimum Ballast resistance per km length of track circuit in Station yards should be A)2ohms B)4ohms C)6 ohms D)1ohm
9.	Minimum Ballast resistance per km length of track circuit in Block section should be A)2ohms B)4ohms C)6 ohms D)1ohm
10.	Minimum Permissible Resistance of a Concrete Sleeper In Non - RE and AC RE area A)500 ohms B)800 ohms 600 0hms D)1000 ohms
11.	With PSC sleepers, availability of insulated GFN) liners up to a level of------- shall be ensured A)50% B)100% C)97% D)90%
12.	Maximum permissible rail resistance per kilometre for Track circuit length up to 700mts A)0.5 ohms B)1.5 ohms C) 1 ohm D) 2 ohms
13.	Maximum permissible rail resistance per kilometre for Track circuit length more than 700mts A)1.5 ohms B)0.5 ohms D) 2 ohms C) 1 ohm
14.	Train shunt Resistance for DC track circuits is specified as A)o.15 ohms B)2ohms C) 0.5 ohms D)1 ohm
15.	Train shunt Resistance for AC track circuits is specified as A) o.15 ohms B) 2 ohms C) 0.5 ohms D)1 ohm
16.	Increase in Relay voltage is due to one or more of the following factors A)Increase in ballast resistance B)) decrease in Feed end voltage C)Increase in Feed end resistance D)Increase in Rail resistance
17.	The highest value of shunting resistance that can cause the track relay to drop is referred to as A)Train shunt resistance B)'Drop Shunt resistance C)Regulating resistance D)Pick up shunt
18.	Train Shunt test shall be taken at A) Relay end only B) Turn outs only C)Feed end only D) Relay end , turn outs/crossings
19.	The highest resistance which, when applied across the track, can open the track relay front contacts is known as its A)Ballast Resistance B)Regulating resistance C)Rail resistance D)Train shunt resistance
20.	Negative rails of adjoining track circuits are provided with a cross connection-bonding

	strip in between, known as (A) Longitudinal bonds (B) Cross bonds (C) 'Transverse Bond' (D) Structure bonds
21.	The highest value of shunting resistance that can cause the Track relay to drop is referred as (A) Train shunt Resistance (B) Drop Shunt Resistance (C) Pick up shunt resistance (D)Rail resistance
22.	The least resistance value at which the track relay picks up is called as (A)Pick up shunt value (B) Drop shunt value (C) Train shunt resistance value D) Regulating resistance value
23.	1. Minimum length of DC track circuit is 2 rail length track for train speed up to ---------- A)100kmph B)110 kmph C)130 kmph D)160kmph
24.	Minimum length of DC track circuit is 2 rail length track for train speed up to ---------- A)100kmph B)110 kmph C)130 kmph D)160kmph
25.	Minimum length of DC track circuit is 3 rail length track for train speed up to --------- A)100kmph B)110 kmph C)130 kmph D)160kmph
26.	RE areas, traction return current flow through the negative rail to A) OHE mast B) Sub-station (SP) Earth C) Sleepers D) Catenary
27.	In multiple line sections traction return rails in track circuits are cross connected with bonding straps (cross bonds) at an interval of about A)50 mtrs B)100 mtrs , C) 150 mtrs D) 200 mtrs
28.	A 'B' Type choke---------- shall be connected in series with track feed to the un-insulated rail (-ve Rail) A) R=15Ω and Z=30Ω at 50 Hz B) R=120 Ω and Z=3 Ω at 50 Hz C) R=3 Ω and Z=120 Ω at 50 Hz D) R=3 Ω and Z=100 Ω at 50 Hz
29.	Track relay used in D.C. Track circuit RE area is A) QT2 B) QNA1 C)QSPA1 D)QTA2
30.	Maximum length of Track Circuit in RE-area with QBAT Relay shall be ----------metres A)750 B)350 C)450 D)670
31.	Cut section Track circuits is generally adopted when it is not possible to work at a long track circuit due to poor A)Rail resistance B) Ballast resistance C) Regulating resistance D)Relay resistance
32.	The total stray current as measured, shall not exceed ---------- if the length of the track circuit is more than 100metres A) 10 ma B) 100ma C)1 amp D) 1 ma
33.	Measurement of stray voltage: Rail earth voltage as measured across the Resistance 'R' shall not exceed ---------- A) 10 milli volts B)50 mill volts C) 100 millivolts D) 10 volts
34.	Nylon Insulated Rail joints are available in -------sizes A) 90R only) 52 kg only C) 60 kg only D) 90R, 52 kg & 60kg
35.	The Ballast clearance from the underside of rail must not be less than ---------- (A) 20mm (B) 30mm (C) 40mm (D) 50mm
36.	To fix a pair of bonds at each rail joint ----------mm holes are drilled on the rails (A) 6 (B) 7 (C) 7.2 (D) 7.5
37.	Glued joints are to be replaced once in ---------years

	(A) 3years (B) 5years (C) 6years (D) 10 years
38.	Glued joints are to be replaced after _____ GMT (Gross Million Tonnes) of Movement of Traffic (A) 100 GMT (B) 250 GMT (C) 150 GMT (D) 200 GMT
39.	The dead section shall A) accommodate a four wheeler B) accommodate a eight wheeler C) not accommodate a four wheeler D) not accommodate a eight wheeler
40.	Block Joint protecting Fouling shall not be less than---------- Mtrs from Fouling mark A)2mtrs B) 3mtrs C)5mtrs D)6mtrs
41.	A track circuit shall extend beyond ----------on both straight road and diversion portions A) SRJ B) Starter C) Fouling mark D) Crossing
42.	In RE area in addition to four end position block joints on main line , _____ block joints are exclusively provided on cross overs and _____ block joints in between, to separate the track circuits A)4 & 4 B) 4 & 3 C) 3 & 4 D)4 & 2
43.	All track circuit tail cables should be meggared once in A) 3 months B) 6months C) a year D) 2 years
44.	For Balancing the Traction Return currents _____ are used A) Impedance bonds B) Tuning unit C)Transverse bonds D) Structure bonds
45.	Audio Frequency Track Circuit (AFTC) works with A) Frequency modulation B) Amplitude modulation C) Phase modulation D) phase width modulation
46.	The communication from Transmitter to Tuning unit is A) Signal Cable B) OFC C) Radio D) Quad cable
47.	Length of track circuit in ABB AFTC in Low power mode is ---------- metres A) 50 - 250 B) 100-250 C) 30 D) 200 - 650
48.	Normal power (ABB) Track circuit feeds about ____ Watt power in the track A) 20 W B) 40 W C) 10 D) 5 W
49.	For FTGS 917 a frequency spacing equal to or greater than _____ kHz must be observed A) 0.5 KHz B)2 KHz C) 1 KHz D) 1.5 KHz
50.	Audio frequency track circuits can be classified into ---------- major groups A) 5 B) 2 C) 3 D) 4
51.	Maximum_____ transmitters of different frequencies can be connected to the same Power supply unit in ABB AFTC A) 2 B) 1 C) 3 D) 4
52.	Siemens AFTC works with a modulated frequency of +/- A)17HZ B)64Hz C)11Hz D)100Hz
53.	The light units are specifically designed to avoid _____ effects in sunlight a) phantom b) double indication c) both a& b d) over lighting
54.	Night aspect and day aspect are _____ in color light signal a) Different

	b) Same c) Changes with climate d) Difficult to predict
55.	Aspects can be displayed at driver's _____ a) eye level b) below eye level c) above eye level d) both b& c
56.	Sighting Apertures are provided on the _____ of the signal units on terminal box (two numbers) a) Left side b) No side c) All sides d) Right side
57.	Diameter of signal base in color light signals is _____ a) 140 mm b) 150 mm c) 160 mm d) 170 mm
58.	For 2-aspect signal, _____ no. of control relay is required. a) 3 b) 5 c) 7 d) 1
59.	Energization of HR relay connects "OFF" Aspect _____ indication. a) Green b) Red c) Pink d) Yellow
60.	In potential drop method, the indications connected across the resistor in ____ a) Series b) Parallel c) Perpendicular d) Hexagonal
61.	DECR is connected _____ side of signal transformer a) Secondary

	b) Top c) Bottom d) Primary
62.	Glowing of signaling lamps are the main tools for giving proper communication to driver through the indication in _____ fashion. a) Verbal b) Audible c) Nonverbal d) Both a & b
63.	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) SL 18 b) SL-31 c) SL-40 d) SL-20.
64.	The schedule of replacement of signal lamp is _____ for OFF aspects. a) 100 days b) 90 days c) 60 days d) 50 day
65.	In Triple pole lamps, there are two filaments of _____ wattage. a) Different b) High and low c) Very High and very low d) Same or equal
66.	MECR picks up when _____ filament lits. a) Auxiliary b) Supporting c) Main d) Either a or b
67.	1. Main filament Proving Relay is represented as a) GXPR

	b) HECR c) RECR d) DECR
68.	In MACLS system, the driver of a train is warned of approaching a stop signal by _____ signal. a) Calling On b) Permissive c) Shunt d) Route
69.	Distant signal is located at an adequate distance in _____ of the stop signal. a) Rear b) Advance c) Top d) Bottom
70.	A general rule (GR) 3.07(6) stipulates that "Wherever necessary more than one _____ signal may be provided a) Distant b) Advance starters c) FSS d) LSS
71.	In double distant territory the inner signal is called _____ a) inner distant signal b) FSS c) Distant d) LSS
72.	Interlocked _____ gates which are also provided with second distant signals a) level crossing b) ROB c) RUB d) Both b & C
73.	In Double Distant Territory green on distant and Yellow on inner distant indicates a) May stop at main line starter b) May stop at home c) run through d) stop at distant
74.	The color of emitted light depend upon _____ & _____used in LED a) wavelength & materials b) frequency & company

	c) resistance & condenser d) ohms & hertz
75.	LED lamps is _____ and do not need external lenses or periodic focusing. a) Un focused b) Over focused c) Out of focused d) Pre-focused
76.	The visibility of each main aspect of LED signal unit ___ in clear day light a) 400m b) 500m c) 600m d) 800m
77.	The minimum illumination of LED signal units measured at a distance of 1.5 metres in axial direction is _____ lux for RED aspect. a) 40 b) 50 c) 60 d) 70
78.	LED Signal aspect unit comprises of a cluster of _____ in series and parallel combinations. a) Condenser b) Resistance c) LEDs d) BY 126 diode
79.	The visibility of YELLOW aspect of LED signal unit _____ in clear day light a) 400m b) 500m c) 600m d) 800m
80.	In _____Block Working is a system of train working in which movement of the trains is controlled by the automatic stop signals. a) Absolute b) Automatic c) One train only d) Pilot guard
81.	The movement of trains into Automatic Block Working is controlled by ____ signals. a) Shunt

	b) Calling-On c) Both a & b d) Stop
82.	The Automatic Signaling arrangement facilitates to _____the Line capacity a) Reduce b) Decrease c) Hamper d) Increase
83.	The track divided into sections in Automatic Block Working are called the _____ a) Automatic Signaling Sections b) Absolute Signaling Sections c) One train only Signaling Sections d) Pilot guard Signaling Sections
84.	Numbers of signaling sections are required to be clear to get caution aspect in Automatic Block Working with 4 aspect signaling. a) 1 + over lap b) 2 + over lap c) 3 + over lap d) 4 + over lap
85.	In a station, different signaling gears are to be operated in a logical sequence for receiving or dispatching of trains for ensuring their ---------- a) Safe running b) Un safe running c) late running d) b and c
86.	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) locking lever, locked lever b) locked lever, locking lever c) normal lever , Reverse lever d) b and c
87.	Engineering scale plan is issued by _____ a) Engg. Dept b) S & T Dept c) Operating Dept d) Commercial Dept
88.	A signalling plan is providing _____ information

	a) Type of signalling b) The class of station c) The standard of interlocking d) a, b, & c
89.	In "Direct locking" type, the lever frame will be in a combination or multiples of _____ levers per bay a) 5 and 7 b) 8 and 10 c) 4 and 8 d) 12
90.	A single end point with rodding transmission can be operated up to a distance of _____ Meters a) 275 mts b) 460 mts c) 600 mts d) 1000 mts
91.	Spare levers are provided in the lever frame for the purpose of _____ a) Future expansion of yard b) Easy operation of levers c) As general practice d) b and c
92.	It shall not be possible to take ' OFF' at the same time, any two fixed signals which can, lead to any_____ a) conflicting movements b) Parallel movements c) Forward movement d) b and c
93.	Successive _____ locking is one of the arrangements of route holding a) Lock Bar b) Points c) Slots d) b and c
94.	The Interlocking between the signal and the facing points and the Lock bars, results the points cannot be unlocked and altered unless the _____ a) Signal lever is normalized b) Point lever is normalized c) Lock lever is normalized d) Slot lever is normalized
95.	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

	a) Point b) Signal c) Lock Bar d) LC Gate
96.	LC Gate releases _____ in the route a) Lock Bar b) Point c) Signal d) LC Gate
97.	For preparation of Locking Table _____ two methods can be adopted a) Square sheet method b) Route method c) Route holding method d) a and b
98.	The locking between the conflicting functions pertaining to different routes is redundant through the _____ a) Point levers b) lock bar lever c) Gate lever d) slot lever
99.	The interlocking relationships between various functions can be achieved either electrically or mechanically, for achieving it mechanically an interlocking _____ is used a) Lever frame b) Relay c) Power supply d) b and c
100.	Inherently every special locking is having _____ locking relations (where n = No. of levers in the group). a) n (n-2) b) n (n-1) c) n (n-3) d) n (n-5)
	The permissible variation of bus bar RE voltage is within _____ (a) +10% to –10% (b) +10% to –5% (c) +5% to –10% (d) +5% to –5%

101.	Neutral section is provided to avoid _____ of two different phases (a) staggering (b) switching (c) bridging (d) anchoring
102.	In the vicinity of high voltage conductors, a minimum electrical clearance is required to be provided to safeguard against (a) flashing (b) arcing (c) flashing/arcing (d) Conducting
103.	The distance between the signal and the mast in front of it must be _____ more than 30 metres. (a) Less than 10 metres. (b) more than 10 metres.
104.	It is not desirable to locate a signal closer than _____ from the mast behind it. (a) 50 metres. (b) 40 metres. (c) 20 metres. (d) 10 metres.
105.	The screen shall be provided on the side adjacent to the catenary and for a signal post between two wired tracks _____ (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) it's a option
106.	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. (a) 500 meters. (b) 600 meters. (c) 650 meters. (d) 1000 meters.
107.	Traction return currents pass through _____ (a) Catenary

	(b) Separate cable (c) Rails (d) Direct Earth
108.	To protect the Operating and S&T staff from the effects of the voltages the rod runs and wires are (a) Provided with insulations. (b) Provided with metal paint. (c) provided with warning (d) provided with normal arrangement
109.	Providing rod and wire insulator, it must be ensured that (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
110.	If the rod transmission is more than _____ meters, additional insulators shall be provided on each rod at every 300 meters (a) 200 (b) 400 (c) 300 (d) 250
111.	The insulations shall be staggered so that the distance between the insulated joints of the two neighboring rods shall not be less than _____ mm (a) 305 (b) 310 (c) 300 (d) 200
112.	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. (a) To avoid theft. (b) Is not exposed to sun and rain directly. (c) For ease of maintenance. (d) For better conduction.

113.	An insulator shall be provided in each wire _____ the gear of operation (a) Near. (b) At Starting to. (c) Middle to. (d) Any place to
114.	A minimum distance of _____ mm shall be maintained between the wire and the nearest edge of the rail or mast (a) 20 (b) 40 (c) 30 (d) 34
115.	To afford safety to the operating and maintenance personnel against electric shock. (a) Provide safety precaution (b) Provide insulated gears (c) Provide proper earthing to metal gears and safety precaution (d) Avoid staff operating the gears
116.	Equipment against build up of unduly high, voltages this can cause dielectric (_____) breakdown (a) dielectric (Insulation) breakdown (b) dielectric (conductor) breakdown (c) dielectric (Earthing) breakdown dielectric (metallic body) breakdown
117.	The lever frame and other metallic frames of the cabin _____ (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
118.	Metallic sheath and armouring of all underground cables (a) to be earthing both ends (b) not to be earthed (c) Earthing is option

	(d) to be earthing any one ends
119.	In case of signals falling within 2 meters from the live parts of the OHE, the protection screen shall be connected (a) to the +ve Rails (b) to the -ve Rails (c) to the Both Rails (d) to earth
120.	In the vicinity of 25KV AC OHE, _____ permitted to be used as they are subjected to induction (a) aerial lines are (b) No aerial lines are (c) No underground cable are (d) No MW comm. allowed
121.	Paper insulated lead sheathed and armoured cables were earlier used but have since been discontinued in view of (a) special jointing are requirements (b) special terminating requirements (c) special jointing and terminating requirements (d) Not to RE standards
122.	The use of screened cables was discontinued owing to practical reasons involving _____ (a) realisable earthing effect (b) realisable cost effect (c) realisable screening effect (d) realisable induction effect
123.	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. a. 3.00 m b. 2.00 m c. 2.00 m d. 1.00 m
124.	By laying the cables through a concrete pipes In the vicinity of the switching station earting the distance can be reduced to _____ a. 1.00 m b. 2.00 m c. 4.00 m d d. .5.00 m

125.	During track crossings The cables should cross the track _____ a. Parallel to the track b. at right angles c. at angle of 45º d. ZIG Zag to the track
126.	The cables should cross the track under _____ a. points and crossings b. bridges c. plain track where no points and crossings d. any place
127.	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 a. River Sand b. Sea Sand c. Coal d. Metal stone
128.	The block circuits shall he transferred to _____ in RE area (a) underground cables (b) areal lines (c) MW (d) Wan Network
129.	A _____ is provided for each pair of block quad a. Circuit Breaker b. Earthing c. transformer d. Condenser
130.	Protective devices shall be provided _____ for protection of the instruments as well as the staff operating them 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

131.	Natural currents are found to be flowing in the soil in most parts of the world especially in _____ a. Black Soils b. rocky Soils c. Hills area d. sea shores
132.	For measurement of stray voltage the resistance 'R' shall be equal to the resistance of the a. Earth pit b. Track Relays c. Rails d. Ballast
133.	The total stray current as measured, shall not exceed 10 milliamps if the length of the track circuit is a. less than 100 metres b. More than 100 metres c. less than 100 Khmers d. More than 100 K.metres
134.	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. a. battery b. Charger c. +ve Rail d. Track Relay
135.	When a conductor carries current, there is a _____ around the conductor a. EMF b. Static field c. magnetic field d. Static field, magnetic field and EMF
136.	LMLA battery is to be charged in ---------- a) constant voltage mode b) Constant current mode c) increasing current mode d) increasing voltage mode
137.	Correction of the capacity is to be done during the capacity test whenever Temperature varies from a) 240 C b) 250 C c) 270 C d) 280 C

138.	The range of input voltage for the battery charger is ----------V AC a) 130-230 b) 160- 300 c) 160-270 d) 180-220
139.	The battery charger gives start DG alarm when cell voltage falls to ------ a) 1.80V b) 1.95V c) 1.90V d) 2.00V
140.	The no load current of the charger shall not be more than------ of rated current a) 10 % b) 15 % c) 7 % d) 12 %
141.	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.
142.	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
143.	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
144.	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
145.	The AC input voltage range of IPS is a) 200 to 350V b) 120-200V c) 150-270V d)220-250V
146.	For Major Yards Home and CO-ON signals having _____ A) Common slot B) Separate slots C) slot for Home signal only D) Slot for CO-ON signal only
147.	The relays used to prove the sequential occupation & clearance of track circuits & release of the route after passage of train _____ A) UYR B) UCR C) UHR D) UGR
148.	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

149.	After clearing the signal if train passed the signal, OFF aspect automatically goes to ON aspect and signal will not re clear even signal lever in reverse position. This is achieved by _____ Relay A) TRSR B) TLSR C) TSR D) TPZR
150.	After taking OFF signal if train cleared the route, signals assumes to ON aspect and signal will not re clear even signal lever in reverse position. This is achieved by _____ Relay A) TRSR B) TLSR C) TSR D) TPZR
151.	In TSR circuit knob contact bye-passed or bridged with _____contacts S A) TSR front B) TSR back C) Both TSR front & back D) Neither front Nor back
152.	Cancellation time for Advance starter is _____ A) 0 sec B) 60 sec C) 120 sec D) 180 sec
153.	Identify the False statement 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.
154.	Identify False statement _____

	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
155.	Crank handle IN circuit (CHLR) _____ contacts of economizer push buttons used. A) NC B) NO C) Both NO & NC D) Neither NO Nor NC
156.	Crank handle provided for_____ 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
157.	Calling on signal is used to _____ 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
158.	NPR Relay picks up ensures_____ A) Siding point at outdoor set to Normal B) Siding point KEY is IN C) siding point knob in Normal D) All the above
159.	Track red Indication appears _____ A) When track is free B) When track is occupied C) When track is failed D) B & C
160.	_____type of Track indications are provided on PI & RRI type panel A) spot light B) strip C) luminous D) B & C
161.	_____type of point indications are provided in the cabins above the respective Lever

	A) spot light B) strip C) luminous D) B & C
162.	On panel white Track circuit indications appears when _____ 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
163.	_____type of Track indications are provided on illumination diagram above the lever frame in cabins A) spot light B) strip C) luminous D) B & C
164.	Conflicting signal-to-signal locking is proved in at least _____ stages A) One B) Two C) Three D) Four
165.	Types of relay interlocking are_____ A) PI & Non-Route setting B) RRI & Route setting C) Route setting & Non-Route D) Entry & Exist
166.	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
167.	Route setting Type Interlocking is also called as_____ A) RRI B) Entry & Exist C) Both A &B D)PI
168.	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
169.	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
170.	Advantages of Electrical Interlocking is A) Easy Installation and Maintenance B) Quick and Efficient Operation C) No Overhauling Procedures D) All the above
171.	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
172.	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
173.	Color Light Signalling is_____ A) Compulsory in PI B) Compulsory in RRI C) Optional in PI D) B&C
174.	Sectional Route Release is_____ A) Compulsory in PI B) Compulsory in RRI C) Optional in PI D) B&C (ANS: D)
175.	LC Gate Knobs used in PI having_____ positions A) single B)two C)Three D)Four
176.	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

177.	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
178.	Signal Knobs used in RRI having_____ positions A) single B) two C) Three D) Four
179.	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
180.	UCR is the _____ A) Route Locking Relay B) Route Checking Relay C) Route checking & Route locking Relay D) Route Free Relay
181.	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
182.	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
183.	In RRI Point knob kept in _____position for auto operation A) Normal B) center C) Reverse D) Normal or Reverse
184.	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
185.	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
186.	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
187.	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
188.	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
189.	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
190.	Home Signal Controlled by _____ track circuits. A) Route B) Berthing C) Overlap D) All the above

191.	In the CO-ON Signal Control circuit _____ points are proved A) Route B) isolation C) Overlap D) A&B
192.	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
193.	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
194.	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
195.	In panel interlocking, the CO signal cancellation time is _____ A) 60 sec B) 120 sec C) 180 sec D) 240 sec
196.	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
197.	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
198.	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
199.	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
200.	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
201.	Pickup contact of TSR Proved in _____circuit A) UCR B) ASR C) HR D) WLR
202.	Shunt signal Knob Used in PI having _____ A) single position B) Two positions C) Three positions D) four positions
203.	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

204.	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
205.	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
206.	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
207.	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
208.	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
209.	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
210.	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
211.	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
212.	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
213.	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
214.	In sequential route release circuit ASR _____ contacts are proved A) Front B) Back C) Both Front and back D) Neither Front Nor Back
215.	Pickup of all UYRs ensure_____ A) Sequential arrival of train B) Directional movement C) Route released D) Both A&B
216.	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
217.	In GNR circuit, SMR _____ contacts proved A) front B) Back C) Both front and back D) Neither front Nor back
218.	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
219.	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
220.	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
221.	Track Locking is proved in _____circuit A) NWLR & RWLR B) NCR/RCR C) NLR/RLR D) Both B&C

222.	With the help of one front contact maximum _____ No of repeater relays can be energized A) Two B) Three C) Four D) Six
223.	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
224.	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
225.	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
226.	In ---------- circuits, SMR contact is not proved. A) GNR B) EGGNR C) Both GNR & EGGNR D) GNR & UNR
227.	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
228.	If a button is struck on the panel, ---------- relay drops to give buzzer.

	A) NCR B) RCR C) NNCR D) NLR
229.	During automatic point operation, when NWKR picks up, ---------- relays drop. A) NLR B) NWLR C) Both NLR & NWLR D) RLR
230.	Prime inputs for the EI Interface design are ---------- a) SIP, FPD and RCC b) card files c) Software d) cables
231.	The calculation of EI card file /OC/Housing is mainly depends on ---------- a) Communication ports b) Communication cables c) Vital & Non vital bit chart d) Software
232.	In EI, application software is----------. a) Common to all stations b) Station specific c) Similar to Executive software d) remotely loaded
233.	In case of Distributed Interlocking system, _____ cable is required to be used a) Object Controllers b) Optical Fiber Cable c) Aluminum cable d) No cable required
234.	In Electronic interlocking system, executive software is ---------- a) Station specific. b) Common to all EI's of same model of same OEM. c) Similar to Application software d) Separately not required.
235.	When any unsafe failures are recognized by an EI ---------- 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.

236.	External Data logger provision to EI is ---------- a) Not mandatory b) Mandatory c) It is a part of EI Hardware d) It is a part of VDU
237.	All Electronic Interlocking Systems have a) self-diagnostic feature b) No diagnosis process c) Inbuilt object controllers d) Housing system
238.	By using Object Controllers ---------- 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
239.	Based on ---------- calculation, number of I/O cards can be calculated. a) Connectors b) wires c) card files d) Vital & Non Vital I/O bit
240.	_____ works with communication cables a) TC b) RRI c) EI d) PI
241.	As per latest guide lines ---------- standby set up is to be used in EI. a) Cold standby b) Warm standby c) power backup d) Hot Standby.
242.	The vital out card in an EI ---------- a) Drives INPUT b) Delivers output to drive a OUTPUT relays c) part of CPU d) 12 V DC
243.	The external Data logger can be connected to EI through---------- a) Protocol converter b) Flash EPROMs c) OFC d) OC
244.	To start Application design of EI, the Inputs required are _____ 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.
245.	Example for software redundant EI system is ---------- a) MEI 633 b) MLK II c) VHLC d) K5BMC
246.	Based on Non Vital I/O bit calculation, ---------- can be calculated. a) Panel processor cards b) wires count b) power supply detailes d) communication details
247.	Self intigrity test is the inbuilt feature of---------- a) EI b) RRI c) Track circuit d) PI
248.	The RS 232 serial communication cable is used as a) Copper cable b) 1.5 Sq mm Signaling cable c) power cable d) VDU connectivity cable with EI
249.	In Hot Standby arrangement ----------. a)Cold standby b) only one system ON c) power backup d) Both systems power ON.
250.	The CPU card is loaded with a) Non Vital data only b) Application logic & Executive logic c) Output relay status only d) operating parameters alone
251.	Surge protection arrangement is must for a) RRI b) Track circuit c) PI d) EI
252.	The interface between CCIP and the EI is called _____ a) OCI b) VDUCT c) PP d) NV I/O card
253.	---------- contacts are used as Read back contacts a) Vital in put Relay b) Vital output Relay c) Non Vital d) Event logger

254.	In Microlok II, each card file has ---------- slots. a) 16 b) 20 c) 14 d) 10
255.	The ---------- card makes System Integrity checks and System health status a) SYNC card b) ECB card c) OUT 16 d) CPU card
256.	In MLK-II EI, _____supply is connected to the system for O/P relay driving a) 16 v DC b) 12 v DC c) 50 v DC d) 24 v DC.
257.	The external Data logger can be connected to MLK-II through---------- a) Protocol converter b) Flash EPROMs c) OFC d) OC
258.	In Microlok-II, the 48 Pin Connector assembly is used for _____ A) Vital Input boards only B) Vital Output boards only C) Vital Input and Output boards D) Non-vital I/O boards
259.	In Microlok-II, each card file should be provided with _____ A) Panel processor B) OC C) VCOR D) CPU card, Power supply card, I/O cards
260.	In Microlok-II, the 96 Pin connector assembly is used for _____ A) Vital Input boards only B) Vital Output boards only C) Vital Input and Output boards D) Non-vital I/O boards
261.	VCOR Relay has _____ contacts. A) 8F/B B) 4F/B C) 6F/B D) 2F/B
262.	VCOR Relay contact current rating is____ Amp A) 1A B) 3A C) 5A D) 50mA
263.	In Microlok-II system, CPU card is provided with _____ no. of ports. A) 4 serial and 1 parallel B) 5 serial C) 4 parallel and 1 serial

	D) 5 parallel.
264.	Non-vital Inputs are A) Control Panel Push Buttons & Key contacts B) Track Circuits TPRs. Point Detection C) VCOR indication D) None
265.	In Microlok-II system, each Non-vital input- output card can be connected with maximum _____ no. of inputs and _____ no. of outputs respectively. A) 16 Inputs & 16 Outputs B) 8 Inputs & 8 Outputs C) 16 Inputs & 32 Outputs D) 32 Inputs & 32 Outputs
266.	In MLK-II Card File, the PS Card is normally placed in the slot no. ____ A) 18&19 B) 15&16 C) 16&17 D) 20
267.	In Microlok-II, MTC can to connect to Port No._____ of CPU card. A) 1 B) 3 C) 4 D) 5
268.	VCOR relay has a) 6F/B dependent contact b) 6F/6B independent contact c) 6F. 6B contact d) 3F.3B
269.	VCOR Relay rated current a) 3 ma b) 3 A c) 30 ma d) 30 A
270.	Slow to pick" is defined as a)"SET = 1 SEC" b) "Clear = 1 SEC" c) "SETUP = 1 SEC" d) "DELAY=1SEC"
271.	Slow to Release" is defined as a)"SET = 1 SEC" b) "Clear = 1 SEC" c) "SETUP = 1 SEC" d) "DELAY=1SEC"
272.	Microprocessor used in Microlok-II is a) Motorola 68332 b) Intel 8086 c) Intel 68332 d) Motorola 8086
273.	In the Card File the Power Supply PCB is placed in

	a) Slot No. 18 & 19 b) Slot No. 16 & 17 c) Slot No. 15 & 16 d) In any slot.
274.	In Microlok-II system ---------- are used for vital interface. A) RS-485 serial ports B) RS-232 serial ports C) 96 Pin connector D) Keying plugs
275.	In Microlok-II system ---------- are used for Non-Vital data interface. A) RS-485 serial ports B) RS-232 serial ports C) 96 Pin connector D) Keying plugs
276.	In Microlok-II ---------- is provided with FLASH ROMs / EEPROMs for storing the executive and application software. A) Vital I/O cards B) IN 16 C) SOFTWARE D) CPU Card
277.	In MLK-II, Error codes are displayed in---------- A) Power Supply Card B) CPU card C) VCOR D) CPU card, Power supply card, I/O cards
278.	In MLK-II, fast static RAMs are used for storing _____ (a) Application program (b) Application program &Executive program (c) Event logger data (d) Installation Address
279.	Application program in the MLK-II EI is written in ---------- A) 'C' language B) Boolean equations B) UNIX D) assembly language
280.	1 to 8 LEDs in the CPU card are meant for ---------- messages a) communication b) user defined error c) VCOR indication d) point indication.
281.	EE PROM is provided in ----------connector A) SYNC card B) ECB card C) CPU card D) 96 pin
282.	VCOR is required for---------- 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
283.	MEI 633 is of ---------- architecture a) 2 Out of 2 b) 1 Out of 1 c) 2 Out of 3 d) 2 Out of 4

284.	Cycle time in MEI633 is ---------- a) 222ms b) 111ms c) 444ms d) 333ms
285.	Intercommunication between MEI633 and the OCs is ---------- a) CLA b) RS-232/OFC c) RS 485/OFC d) RS-423
286.	Input supply for the Mini IPS provided in Medha EI room is ---------- a) 24V DC b) 230V AC c) 110V AC d) 110V DC
287.	The output supply of Dc-Dc converters in the Mini IPS of MEI 633 is --------- a) 24V DC b) 12V DC c) 110V DC d) 60V DC
288.	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
289.	Contactor relays are used for feeding a) Low current Circuits b) High current Circuits c) Medium current Circuits d) No current Circuits
290.	In Metal to Carbon contact relays, the Metal contact element is made of a) Bronze b) Steel c) Silver d) Gold
291.	WLR stands for

	a) Point lock relay b) Point lever relay c) Point rotation relay d) Point left side relay
292.	TRSR stands for a) Train Sending Relay b) Train stick relay c) Train right stick relay d) Track right stick relay
293.	UCR stands for a) Route controlling relay b) Route register relay c) Route checking relay d) Route relay Interlocking
294.	ASR stands for a) Advance starter control relay b) Approach stick relay c) Advance search relay d) Approach search relay
295.	WRR stands for a) Point reverse operation relay b) Point normal operation relay c) Point right operation relay d) Point left operation relay
296.	Timer Relay is used for (a) Time delay (b) Time slot (c) Time registration (d) reading Data Logger clock
297.	AC Track circuits are used in a) AC Traction Area b) DC Traction Area c) Non-RE Area

	d) LC Gate Area
298.	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
299.	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.
300.	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.
301.	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
302.	Q series relays have a) different plug board b) common plug board c) no plug board d) only partial plug boards
303.	All the contacts of Q series relay are a) Dependent contacts b) 3position contacts

	c) Series contacts d) independent contacts
304.	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
305.	In DC Nuetral Plug-in type QN1 Relays, the contact springs are made of a) Phosphor bronze b) Manganese c) Silver d) Nickel
306.	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
307.	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
308.	Periodical overhauling of Shelf Type Track Relays a) 20 years b) 10 years c) 5 years d) 8 years
309.	Maximum pickup voltage of QN1 relay is a) 9 V b) 19.8V c) 19.2V d) 12V

310.	Minimum drop away voltage of QN1 relay is a) 3.0V b) 3.6V c) 4.2V d) 10V
311.	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
312.	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
313.	9 ohms QT2 relay is used for -------- track circuits (a) Short (b) long (c) medium (d) none
314.	The AC immunity of QTA2 relay is (a) 60V AC (b) 30V AC (c) 50V AC (d) 40 V AC
315.	The contact configuration of QTA2 is (a) 2F/1B (b) 4F/2B (c) 2F/2B (d) 4F/4B
316.	---------- is used as the second repeater of QTA2 in RE area (a) QN1 (b) QNA1 (c) QSPA1 (d) QTA2
317.	The maximum length of Track circuit permitted with QTA2 is (a) 250mt (b) 450 mts (c) 720 mts (d) 200 mts
318.	Pickup voltage of QTA2 relay with 9 ohms coil is (a) 1.2V (b) 1.3V (c) 1.4V (d) 1.5V
319.	The AC immunity of QBAT relay is (a) 150V AC (b) 80V AC (c) 50V AC (d) 30V AC
320.	The maximum length of Track circuit permitted with QBAT is (a) 720mt (b) 450mts (c) 250mts (d) 200mts
321.	The maximum permitted excitation of QBAT relay is up to --------- of P.U voltage (a) 235% (b) 230% (c) 300% (d) 200%

322.	Pick up current of QBAT (a) 140- 175 ma (b) 130-160m (c) 140-170ma (d) 132- 174 ma
323.	Pick up current of QTA2 of 20 ohms (a) 80-90 ma (b) 90-100ma (c) 100-110ma (d) 110-120ma
324.	Pick up current of QTA2 of 9ohms (a) 80-90 ma (b) 90-100ma (c) 120-140ma (d) 110-120ma
325.	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
326.	Pick up voltage of QT2 relay of 9 ohms (a) 4v (b) 3v (c) 1.5v (d) 2v
327.	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
328.	SGE lever lock and circuit controller is used in _____lever frame installation. a) Rod run b) Double wire c) single wire d) electrical wire
329.	_____ 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
330.	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
331.	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
332.	Siemens General Electric Lever Lock and Circuit Controller has two coils each of __Ohms resistance a) 5 b) 6 c) 7 d) 6.25
333.	Two coils are connected in_____ the lock coil operates on 12 VDC. a) Parallel b) Series c) Both a & b d) Perpendicular
334.	2 coil connected in _____ the lever lock operates on 110 VAC a) Parallel b) Series c) Both a & b d) Perpendicular
335.	IRS type Lever Lock and Circuit Controller has only one coil of _____ Ohms resistance a) 4 b) 6 c) 8 d) 4.5
336.	IRS type Lever Lock and Circuit Controller can be connected to _____ a) 110V AC b) 12V DC c) 230V

	d) Both a or b
337.	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''
338.	_____indication should be provided in the cabin to indicate the receipt of slot. a) Smell b) Audible c) Visual d) Taste
339.	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''
340.	Where track circuits are provided, the concerned slot circuits should prove clearance of a) BPAC b) SSDAC c) MSDAC d) Track circuit.
341.	Suitable _____ protections should be provided against any contact fault or cross feed voltage. a) Cross b) Over lap c) Loop d) Isolation
342.	An outer signal should be replaced to ''ON'' when the slot for _____ is withdrawn. a) FSS b) LSS

	c) Homes Signal d) Shunt Signal
343.	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''
344.	These are ___ different methods used to achieve inter-cabin control or slotted signal. a) 2 b) 3 c) 4 d) 5
345.	_____is provided to lock the SM's control slides both in normal and reverse positions to prevent unauthorized operation a) Cabin man slide b) Gate man slide c) Station Master slide d) Points man slide
346.	A _____ indicator is required for every slotted signal a) Point b) Track c) Slot d) Gate
347.	Specification of EOLB with hand generator RDSO/SPN/_____ a) 180/2000 b) 180/2015 c) 180/2010 d) 180/2005
348.	Level crossing gates are classified as _____class

	a) Special, A, b) B, C c) C & D d) Both a,b & c
349.	Electric lifting barrier provides _____to avoid physical strain on gate man. a) Easy operation b) Difficult operation c) Tuff operation d) Feather touch operation
350.	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
351.	In EOLB Both barriers have to be cranked _____as they are not mechanically linked. a) Combinedly b) together c) at a time d) Separately
352.	The time of operation in EOLB is only_____. a) 20 sec b) 10 sec c) 30 sec d) 40 sec
353.	Maximum length of a barrier in EOLB is _____feet a) 52 b) 62 c) 32 d) 42
354.	Maximum length of a barrier in EOLB is _____meter

	a) 9.76 b) 10.76 c) 11.76 d) 12.76
355.	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
356.	Feasibility of remote operation in conjunction with _____ a) Pen camera b) close circuit TV c) mobile camera d) spy camera
357.	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.
358.	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
359.	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
360.	Red color boom light is fixed in the centre of boom facing towards ____

	a) Road b) Rail c) Driver d) Guard
361.	The height of the boom from road level shall not be more than ____mm a) 2000 b) 3000 c) 4000 d) 1000
362.	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
363.	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
364.	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
365.	The lowered or closed position of the lifting barrier shall be within ____from the horizontal a) 10degrees b) 20degrees c) 15degrees d) 25degrees
366.	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
367.	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
368.	Insertion of _____shall disconnect the power supply to the motor a) Crank handle b) Gate man key c) Hand d) Both b & c
369.	Power rating of EOLB is _____ watts for DC model a) 120 b) 220 c) 320 d) 420
370.	Power rating of EOLB is _____ watts for AC model a) 350 b) 450 c) 550 d) 250
371.	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
372.	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
373.	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
374.	EOLB operates with _____ voltage a) 24 VDC b) 110 VDC c) 110 VAC d) All a, b & c
375.	The RPM of DC Permanent Magnet motor Motor is _____ a) 1300 b) 1400 c) 1500 d) 1600
376.	_____operation of EOLB which improved the service condition of gate man. a) mindless b) Effortless c) senseless d) manner less
377.	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

378.	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
379.	_____ provides overload protection to motor in EOLB a) Friction clutch b) Limit switch c) Crank handle d) Both b & c
380.	The friction clutch and the motor are connected by a _____ a) Normal Belt. b) Italian Belt. c) Timing Belt. d) Leather Belt.
381.	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
382.	_____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
383.	If OPEN/ CLOSE push button is release, the Barriers _____ in that position. a) proceed b) run over c) Stop d) collapse
384.	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
385.	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
386.	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
387.	Rotation of crank handle in _____direction for closing of boom in EOLB a) Anti clockwise b) clockwise c) positive d) negative
388.	Rotation of crank handle in _____ direction for opening of boom in EOLB a) Anti clockwise b) clockwise c) positive d) negative
389.	Electrical Point Detector(EPD) : 3.25mm Obstruction test is done at what distance from the toe of the switch a) 120mm b) 150mm c) 170mm d) 160mm
390.	Electrical Point Detector(EPD) : when 3.25mm Obstruction test is done a) the bridge contact should not make b) the bridge contact should make

	c) the shunt contact remains open d) the points get locked
391.	Advantage of power operation of point a) Quick operation b) Longer distance c) throw, lock & dectection at the same operation d) a,b&c
392.	purpose of Frictiotn in case of Electric point machine a) limits thorow b) over load protection for Motor c) ensures lock d) slips end after detection makes
393.	time consumed for operation in case of Electric point machine a) 3-5 sec b) 6-9 sec c) 0-2 sec d) 7-10 sec
394.	The stroke of a low stroke point machine is a) 140mm b) 143mm c) 200mm d) 220mm
395.	Point is set and lock in normal contacts make. a) RD&NC b) RC&ND c) ND&RD d) NC&RC
396.	Point is set and lock in reverse contacts make. a) RD&NC b) RC&ND c) ND&RD d) NC&RC
397.	SAE30 gear oil is to be poured once in. a) 3months b) 6months c) 7months d) 9months
398.	RPM of the point motor is. a) 1400 b) 1500 c) 1600 d) 1700

399.	Insulation resistance of point motor should be more than. a) 10 mega ohms b) 15 mega ohms c) 20 mega ohms d) 30 mega ohms
400.	AC immunity of the point motor is a) 130VAC b) 160VAC c) 170VAC d)180VAC
401.	The leading stretcher bar is to be fixed at ____mm from toe a) 220mm b) 250mm c) 470mm d) 290mm
402.	The point motor is fixed on which sleeper a) 4^{th} & 5^{th} sleeper b) 5^{th} & 6^{th} sleeper c) 3^{th} & 4^{th} sleeper d) 1^{th} & 2^{th} sleeper
403.	The IRS point machine is provided with which locking a) IN & OUT Locking b) OUT & IN Locking c) ROTATORY Locking d) Reverse & Forward Locking
404.	IRS point machine: number of teeth available in the main gear rim a) 92 Nos b) 82 Nos c) 72 Nos d) 52 Nos
405.	During obstruction test of machine operated point with 5mm test piece a) Point shall not lock b) friction clutch shall slip c) Detection contacts shall not make d) a,b & c
406.	Difference between normal working current and obstruction current shall not be more than a) 0.5 Amps b) 5 Amps c) 2.5 Amps d) 10 Amps
407.	power supply to point machine is control at _____ level a) Circuit

	b) Battery c) machine d) a & c both
408.	Crank handle contacts are provided to simultaneous _____ and _____ operation a) power b) manual c) hydraulic d) A & B
409.	Obstruction current shall not be more than _____ of normal working current a) 2 times b) 0.5 times c) 100 times d) 4 times
410.	IRS point machine: number of teeth available to the motor pinion a) 12 Nos b) 18 Nos c)17 Nos d) 15 Nos
411.	IRS point machine: spring loaded friction clutch consist a) slip ring b) compression spring assembly c) A & B d) drive disc
412.	SSD of the point for clamp type point machine is. a) Switch setting device b) Spring setting device c) Shunt switch device d) Switch spring device
413.	Due to the 160 mm opening of thick web switch at toe the clearance at junction of rail head is a) 50mm. b) 60mm. c) 70mm, d) 80mm.
414.	A clamp lock that clamps together the closed switch against the a) stock rail b) Tongue rail c) SRJ d) Fish plate
415.	Which is not the part of IRS clamp type machine a) Stopper b) Insulating plates

	c) rubber pad d) drive lug
416.	What is rated voltage of IRS clamp type point machine a) 110V DC b) 24 V DC c) 110V AC d) 60 V DC
417.	What is the rated current of IRS clamp type point machine a) 4.0A to 8.0A b) 5.3A to 8.5A c) 3.3A to 8.0A d) 2.3A to 8.0A
418.	What is the operating time of IRS Clamp type Point machine a) 4 to 5 Second b) 4 to 10 Second c) 1 to 2 Second d) 10 to 12 Second
419.	What is the power of DC series motor of IRS clamp point machine a) 240 Watts b) 200 Watts c) 330 Watts d) 440 Watts
420.	What type of gear oil is used for lubrication a) SGE 30 b) SAE 40 c) SAE 95 d) SAE 30
421.	Spring Setting Device(SSD) is provided in between sleepers a) 13 & 14 b) 15 & 16 c) 11 & 12 d) 17 & 18
422.	How many grease gun stroke should be used in each nipple provided to lubricate the bearings a) 5 b) 3 c) 7 d) 9
423.	Authority to proceed is given to _____ to enter the block section with his train a)Guard b)Driver c)SM d) ESM
424.	Block overlap in MACLS is

	a)400m b) 120m c) 180M d) 160
425.	Certificate of Competency for operating block instrument is valid for___years a)1 y b) 2y c) 3y d)4 y
426.	Bell code for train entering into block section is a)1 Bell beat b) 2 Bell beats c) 3 Bell beats d) 4 Bell beats
427.	Bell code for Attention a)1 Bell Beats b) 2 Bell Beats c) 3 Bell Beats d) 4Bell Beats
428.	Bell code for Line clear is a)1 Bell Beats b) 2 Bell beats c) 3 Bell beats d) 4 Bell beats
429.	Bell code for block section is Clear a)1 Bell beats b) 2 Bell beats c) 3 Bell beats d) 4 Bell beats
430.	Bell code for Cancellation of Line Clear is a) 1Bell beats b) 2 Bell Beats c) 5 Bell Beats d) 4 Bell Beats
431.	Bell code Testing of Block Instrument a)16 Bell beats b) 12 Bell beats c) 3 Bell Beats d) 4 Bell beats
432.	1. Train Signal Register shall be kept by the ____ under his custody a) SM b) SSE (SIGNAL) c) PWI d) Signal maintainer
433.	Block Back is facility of a) single line b) double line c)both a and b d) neither a nor b
434.	Block Back and Block Forward both are facilities of a) single line b) double line c) both a and b d) new Line
435.	Block section is controlled by

	a) rear Station SM b) advance station SM c) By both or a and b d) none
436.	The distance sufficient to ensure safety is a) minimum breaking distance b) block over lap c)adequate distance d)none
437.	permission to enter the block section is a) line clear b)cancellation c) line close d) train on line
438.	An equipment used for safe running of trains between two adjacent block stations is a) Point Machine b) b) Block Instrument c) c) RRI d) d) EI
439.	Bell code for TOL is a) 1Bell beat b) 2 Bell beats c) 3 Bell Beats d) 4 Bell beats
440.	Block section's jurisdiction a) LSS to FSS and its overlap b) FSS to LSS and its overlap c) Only LSS and its overlap d) Only LSS to FSS
441.	Absolute block working allows a) Only one train in block b) Only two trains in block c) Multiple trains in block d) No trains in block
442.	Private Number is given by a) sending SM b) receiving SM c) Both a and b d) neither a nor b
443.	The distance sufficient to ensure safety a) Forward distance

	b) Backward distance c) Both a and b d) Adequate distance
444.	It is the authority given to Loco Pilot of the train , under the system of working. To enter the block section with his train a) Authority to proceed b) Authority to Stop c) Authority not to Proceed d) Authority to stop and wait
445.	Under Absolute Block working system ,block stations are classified as a) Only A b) Only A and B c) Only Band D d) All A,B and C
446.	Resistance of polarized relay is a) 90Ω b) 77Ω c) 25Ω d) 100Ω
447.	minimum operating current of Block bell of Neale's token ball instrument is a) 80mA b) 20mA c) 150 mA d) 100mA
448.	Resistance of Bell coil of Neale's token ball instrument is a) 25Ω b) 40Ω c) 77Ω d) 100Ω
449.	Working current of galvo in Neale's token ball instrument is a)100mA b) 15-25mA c) 60mA d) 40mA
450.	TCF and TGT coils of neales token ball instrument have minimum working voltage a) 24v b) 4.5v c) 60v d) 75 v
451.	TGT and TCF coils of neales token ball instrument have operating current a) 20mA b) 60mA c) 160mA

	d)40mA
452.	Bottom handle of neales token ball instrument is turned towards TGT when _____ Coil is energised a) TGT b) TCF c) Line clear coil d) TOL
453.	Bottom handle of neales token ball instrument is turned towards TCF when _____ Coil is energised a) TGT b) TCF c) Line clear coil d) TOL Bottom handle of neales token ball instrument is turned towards TCF to NORMAL when _____ Coil is energised a) TGT b) TCF c) Line clear coil d) TOL
454.	Bottom handle of neales token ball instrument is turned towards TGT to NORMAL when _____ Coil is energised a) TGT b) TCF c) Line clear coil d) TOL
455.	current rating of polarised relay is a) 77mA b) 66mA c) 25mA d) 45mA
456.	In polarised relay the position of the armature when the relay is energies with coil terminal R2 connected to positive and R1 connected to negative terminal of the battery it is called a) Normal position b) Reverse position c) Forward position d) Backward position
457.	In Polarised relay the armature contact clearance between fixed contacts shall not be less than a) 2.5 mm b) 3.5mm c) 1.5mm d) 10mm

458.	polarised relay is a) 2 positioned relay b) 3 positioned relay c) 4 positioned relay d) 1 positioned relay
459.	Arm contact a) normal contact b) reverse contact c) Front and back contacts d) pick up and drop contacts
460.	A steel rod with an electroplated knob passing through the middle of the bottom handle Is a) Tappet rod/Bell plunger b) Token selector c) Inter stroke interrupter d) Spring clutch assembly
461.	The polarity of the current depends on the position of the a) Token selector b) Tappet rod c) Commutator d) Safety catch
462.	which one of the following prevents declutching of commutator shaft from spring clutch shaft a) jerking contact b) safety catch c) Token selector d) top handle
463.	which one of the following determines that from which race token shall be selected to issue out of instrument a) Safety catch b) Top handle c) Bottom handle d) Token selector
464.	A normal polarity instrument can be converted to reverse polarity by reversing the connection of the following a) Only line battery b) Only polarised relay c) Both a and b d) Needle indicator, polarised relay and line battery
465.	TCF lock coil to be enegised to operate bottom handle from a) only Normal to TCF b) only TCF to Normal

	c) only TGT to normal d) All a,b and c
466.	TGT lock coil to be energised to operate bottom handle from a) Normal to TCF b) TCF to Normal c) Normal to TGT d) TGT to Normal
467.	Normal REST contact is provided in a) NON- RE Neales token ball instrument b) RE Neales token ball instrument c) Both a and b d) neither a nor b
468.	what is purpose of Modifications in RE area a) To prevent induction b) To allow induction c) To reduce induction d) To increase induction
469.	Double line Block instrument is a)Co- operative b) Non co-operative c) both a and b d) neither a nor b
470.	All operations of DLBI is performed by a) Sending SM b) b) Receiving SM c) c) Both a and b d) d) neither a nor b
471.	DLBI has three handle Positions a) LINE CLOSE ,TOL,LINE CLEAR b) LINE CLOSE, TGT, TCF c) LINE CLOSE,TGT,LINE CLEAR d) LINE CLOSE ,TCF,LINE CLEAR
472.	Line Current of DLBI is a) 45 mA b) b) 25mA c) c) 60 mA d)35mA
473.	Line supply DLBI is a) 25v plus Line drop b) 45v plus Line drop c) 12v plus Line drop d) 75v plus Line drop

474.	Super imposition of circuits is called a) Newton ckt b) lenz ckt c) Phantom ckt d) RE ckt
475.	BXR is a) Bell relay b) line relay c) indication relay d) stick relay
476.	DLBI Block Bell Relay coil resistence is a) 20 Ω b) 30 Ω c) 40 Ω d) 60 Ω
477.	IN DLBI commutator handle gets locked when it is a) Turns from LINE CLEAR to TRAIN ON LINE b) Turns from LINE CLOSE to LINE CLEAR c) Turns from LINE CLOSE to TRAIN ON LINE d) Turns from TRAIN ON LINE TO LINE CLOSE
478.	The Resistance of door lock coil is _____ in SGE DLBI a) 40 ohms b) 50 ohms c) 80 ohms d) 160 ohms
479.	DL Block Instrument is a)TOKEN INSTRUMENT b) TOKEN LESS c) PUSH BUTTON TYPE d) HANDLE LESS
480.	Over hauling period of DLBI is a)10 y b) 3 y b) 5 y d) 7 y
481.	DL Block Instrument can be used in a) RE Only b) Non RE only c) Both a and b d) NEITHER a NOR b
482.	Block Releasing relay or sequential proving relays in DLBI a) SR1,SR2 b) ZR1,ZR2,ZR3 c) LCPR, LSS DR

	d) 1R,2R,3R
483.	Number of conductors required for Non RE Double Line indication circuit is a) 2 conductors with separate earthing b) 3 conductors with separate earthing c) 4 conductors with separate earthing d) 1 conductor with separate earthing
484.	Number of conductors required for RE DLBI is a) 2 conductors b) 4 conductors c) 1conductor d) 6 conductors
485.	Number of conductors required for Bell circuit of DLBI is a) 3 conductors and earthing b) 2 conductors and earthing c) 4 conductors and earthing d) 1 conductor and earthing
486.	In absolute Block working system signals are interlocked with a) Point machine b) Block instrument c) Lock bar d) Track circuit
487.	1) Train arrival buzzer is activated when ____ relay energised a) SR1 b) ZR1 c) ZR2 d) ZR3
488.	2) LCPR in DLBI is a) Fast to pick up b) Slow to pick up c) Slow to release d) Fast to release
489.	Armature is apart of ___ DLBI a) Door lock mechanism b) Block Bell unit c) Top indicator d) Bottom indicator
490.	In DLBI Self station operation is shown in a) Bottom indicator b) Top indicator c) Middle indicator d) Side indicator

491.	In DLBI commutator segments are a) 3 in number b) 2 in number c) 4 in number d) 5 in number
492.	Output of Block bell equipment in Double Line Block Instrument is a) 100v ac ,150hz b) 60vac ,150hz c) 75v ac,150hz d) 30v ac,150hz
493.	Top indicator refers to a) Self station operation b) Other end station's operation c) Both a and b d) Neither a nor b
494.	Different types of Double Line Block Instruments are a) Push Button, neales token Instrument, FM block b) Neales tablet token block, push Button, FM Block c) SGE, MODIFIED SGE, IRS d) FM instrument, PTJ, Token Ball instrument
495.	In Double line SGE Block instrument Bell unit and polarised Relay is provided a) Inside the block instrument b) Outside the block instrument c) Both a and b d) Neither a nor b
496.	Line voltage of Non RE Double line block instrument is a) 44v b) 25v c)12v d) 60v
497.	In Double Line Block instrument top indicator is also called as a) TCF Indicator b) TGT indicator c) TOL indicator d) TCF and TON indicators
498.	In Double Line Block instrument Bottom indicator is also called as a) TCF Indicator b) TGT indicator c) TOL indicator d) TCF and TON indicators
499.	Which of the following is the Contact arrangement of Double line SGE make a) Brass segments arrangement on ebonite butterfly shaped plate b) 6 way circuit controller type or pin type

	c) 9 way drum type with slotted segments d) Push button type
500.	Which of the following is the Contact arrangement of Double LINE PTJ make a) Brass segments arrangement on ebonite butterfly shaped plate b) 6 way circuit controller type or pin type c) 9 way drum type with slotted segments d) Push button type
501.	Which of the following is the Contact arrangement of SGE make a) Brass segments arrangement on ebonite butterfly shaped plate b) 6 way circuit controller type or pin type c) 9 way drum type with slotted segments d) Push button type
502.	Which of the following is Door lock mechanism used in Double line SGE Block instrument a) Mechanical stick b) Electrical stick c) Electronic stick d) Both a and c
503.	Which of the following is Door lock mechanism used in Double line PTJ Block instrument a) Mechanical stick b) Electrical stick c) Electronic stick d) Both a and c
504.	what is purpose of Modifications in RE area a) To prevent induction b) To allow induction c) To reduce induction d) To increase induction
505.	To cancel line clear in push button instruments ----- buttons are to be pressed a) BCB & Cancel Button b) BCB & TGB c) BCB & LCB d) BCB & SHK Button
506.	Colour of BCB button is ------ in push button instrument a) Black b) White c) Green d) Red
507.	Colour of TGB button is ------ in push button instrument a) Black b) White c) Green d) Red
508.	Colour of Shunt key button is ------ in push button instrument

	a) Blue b) White c) Green d) Red
509.	Colour of slip/catch siding key button is ------ in push button instrument a) Blue b) White c) Green d) Red
510.	Colour of TGT Indication is ------ in push button instrument a) Black b) White c) Green d) Red
511.	Colour of Line close Indication is ------ in push button instrument a) Black b) White c) Green d) Red
512.	One of the following is not energized from external battery in push button instrument a) SNR b) ASTR c) TAR d) TCKR
513.	One of the following is false related to SNR, in push button instrument a) Proves the normal position of all the signal controls concerned b) Picks up by pressing BCB along with TGB/LCB c) Picking up of this relay indirectly proves that shunt & slip/catch siding keys are IN position d) Normally pick up relay
514.	One of the following is false related to SNR, in push button block instrument a) Pick up condition of FVT& LVT proved in this relay circuit b) Though feed to this relay is available, it does not pick up due to no drain circuit feature c) It drops on releasing LSS control d) Picks up with line battery
515.	One of the following is false related to TAR, in push button block instrument a) It is a magnetic latch relay b) Picks up through the external battery c) De latches to normal through local battery d) Used for registering the TOL status
516.	One of the following is false related to ASTR, in push button block instrument

	a) Repeater for FVT b) Picks up when TGB is pressed c) Dropping of ASTR initiates auto TOL code d) Picks up through local battery
517.	One of the following is not a line relay, in push button instrument a) LR b) TCKR c) CRR (N) d) CRR (R)
518.	One of the following is a polarized relay, in push button instrument a) CRR b) TCKR c) SHKR d) SCKR
519.	CRR is of ----- type relay, in push button instrument a) QN1 b) QB3 c) QNA1 d) QBA1
520.	One of the following is false related to RCKR, in push button instrument a) Code reception checking relay b) Senses progress of the coding circuit at the receiving end c) When picked up opens the line circuit d) Is a line relay
521.	One of the following is false related to RDR, in push button instrument a) Receiving delivery relay b) Stores first – ve of any code c) Remains energized till code reception is complete d) Is an external relay
522.	One of the following is false related to CTR, in push button instrument a) Its front contacts connect line battery to line b) Its back contact connect CRR(N)/CRR(R) to line c) Its energisation receives the code d) It's a code transmitting relay
523.	One of the following is false related to LCCPR, in push button block instrument a) Line closed code reception relay b) Picks up when line closed code is received from line c) When picks up, enables the TGTR or TCFR to release d) Picks up when TOL code is received from line
524.	One of the following is not a coding relay, in push button instrument a) 1CR b) CR2

	c) 2CR d) 3CR
525.	One of the following is not a latch relay in push button instrument a) ASTR b) TGTR c) TCFR d) TAR
526.	Bell coil circuit consists of the contact combination of the following relays a) Front contact of CRR(N) and back contact of LPR b) Front contact of LPR and back contact of CRR (N) c) Front contact of CRR(N) Front contact of LPR and d) Back contact of CRR(N) back contact of LPR and
527.	One of the following is false related to PTR/NTR, in push button instrument a) Stick feed applied to these relays over TCKR back contact b) Connect positive / negative of line battery on line respectively c) They are conflicting to each other d) These relays stick through TCKR front contact
528.	One of the following is false related to TOLAR, in push button block instrument a) This is not a latch relay b) TOL acknowledgement relay c) Releases when the second pulse of the TOL code is received at receiving station d) Picks up during reception of the second pulse of TGT code at sending station
529.	One of the following is not a conflicting relay pair, in push button instrument a) NTR & PTR b) N2R & P2R c) CRR (N) & CRR (R) d) TCKR & RCKR
530.	One of the following is not a local relay, in push button instrument a) RCKR b) RDR c) CTR d) CRR (N)
531.	One of the following is not a local relay, in push button instrument a) CTPR b) LCCPR c) LR d) CRR (R)
532.	One of the following is not a local relay, in push button instrument a) PTR b) NTR c) LPR d) TCKR

533.	One of the following is false regarding CTPR, in push button instrument a) Repeater of CTR b) Drops immediately as CTR drops c) Repeats the CTR while the instrument is transmitting the code d) Remains energized till the complete answer back code is received
534.	One of the following is false regarding P2R & N2R, in push button instrument a) Second +ve & Second - ve pulse receiving relays b) Store the polarity of the second pulse of a code that is received c) These are conflicting relays d) Energizes from line battery
535.	One of the following is false regarding CAR, in push button instrument a) Picks up for cancellation of line clear b) Picks up when BCB & cancel buttons are pressed c) Pushes the counter by one digit d) Picks up by external battery
536.	SHKR relay front contact is not directly proved in one of the following relays In push button instruments a) RDR b) CTR c) TCFR d) TGTR
537.	One of the following is false regarding SCKR, in push button instrument a) Slip/catch siding key relay b) Low voltage monitoring relay c) SHKR front contact is proved in this relay d) It is a line relay
538.	One of the following is false regarding SCKR, in push button instrument a) Connected to key transmitter of slip/catch siding control where necessary b) Low voltage monitoring relay c) Drops when voltage on load falls to 21v d) SHKR back contact is proved in this relay
539.	One of the following is false regarding TGTR, in push button instrument a) QL1 Relay b)Has operating & releasing coils c) Reverse contacts are proved in the LSS control circuits d) Picks up on successful reception of line closed code
540.	One of the following is false regarding TCFR, in push button instrument a) Magnetic latch relay b) Picks up when TCF code is received c) Releases on reception of line closed code d) it is a line relay

541.	One of the following is false regarding LPR, in push button instrument a) Repeater of LR with a difference b) LPR releases to reset all coding relays c) Its back contact connects local battery supply to the bell coil d) It is an external relay
542.	One of the following is not a button relay a) TGTR b) BCBR c) TGBR d) LCBR
543.	------ Timer is used in push button instrument a) Electronic b) Mechanical c) Thermal d) Electro mechanical
544.	------- type of relays is not used in push button instruments a) QN1 b) QL1 c) QB3 d) QNA1
545.	LPR is having ------ number of pick up paths, through LR front & TCKR front in push button instrument a) Two b) One c) Three d) Four
546.	One of the following is not a code registering relay in push button instrument a) RDR b) P2R c) N2R d) CTR
547.	One of the following is a code terminating relay, in push button instrument a) RCKR b) TCKR c) SHKR d) SCKR
548.	Line current in push button instrument is ------- ma a) 60 to 70 b) 25 c) 110 d) 200

549.	To set the push button instrument to TGT ----- buttons are to be pressed a) BCB & TGB b) BCB & LCB c) BCB & SHK d) BCB & SCK
550.	To set the push button instrument to Line close ----- buttons are to be pressed a) BCB & TGB b) BCB & LCB c) BCB & SHK d) BCB & SCK
551.	Pressing of BCB & TGB in push button instrument sends -- code to the other end a) TCF b) TGT c) TOL d) Line closed
552.	Pressing of BCB & LCB in push button instrument sends -- code to the other end a) TCF b) TGT c) TOL d) Line closed
553.	After the receiving end push button instrument set to TCF, ----- code is automatically transmitted Back to the sending end instrument a) TGT b) TCF c) TOL d) Line closed
554.	One of the following is false in connection with SHK button in push button instrument a) Colored blue b) To be pressed to remove the shunt key in Line close position c) To be pressed to remove the shunt key in TGT-TOL d) To be pressed to remove the shunt key in TCF position
555.	The train dispatching end push button instrument, after setting to line close, generates ----- code and transmits back to receiving end a) TGT b) TCF c) TOL d) Line closed
556.	One of the following is false in connection with panel lamp button in push button instrument (PLB) a) Colored yellow b) Pressed to verify the condition of the instrument c) In new push button instruments this button is dispensed d) By pressing PLB, we can verify FREE & TOL indications

557.	SNRK is an indication to the SM to verify ----- in the push button instrument a) All the relevant controls are normal b) All the relevant controls are reverse c) All the relevant controls are neutral d) All the irrelevant controls are normal
558.	One of the following regarding TOLK is false in push button instrument a) Red indication b) When lit indicates train has entered in to the block section c) Remains lit till the section is closed d) When lit indicates train has not entered in to the block section
559.	One of the following regarding FREE indication is false in push button instrument a) Green indication b) Indicates that the prescribed time delay has lapsed c) Takes 120 seconds to appear d) Takes 60 seconds to appear
560.	One of the following regarding counters is false in push button instrument a) Registers number of times cancellation has been initiated b) Jumps by one digit when the cancel & BCB are pressed c) Jumps by one digit at the train sending end d) Jumps by one digit at the train receiving end
561.	One of the following regarding SM's key is false in push button instrument a) Prevents unauthorized operation, when SM's key is out b) Not possible to set the instrument to TGT, when SM's key is out c) Possible to transmit TOL code, when SM's key is out d) Possible to send bell code, when SM's key is out
562.	One of the following regarding SM's key is false in push button instrument a) Not possible to send bell code, when SM's key is out b) Not possible to set the instrument to Line close, when SM's key is out c) Possible to receive TOL code, when SM's key is out d) Not Possible to receive bell code, when SM's key is out
563.	One of the following regarding SM's key is false in push button instrument a) Possible to transmit TGT code, when SM's key is out b) Possible to transmit & receive line closed code, when SM's key is out c) Possible to receive TCF code, when SM's key is out d) Phone communication is not possible, when SM's key is out
564.	One of the following statements is false regarding push button instrument a) Consists of a set of push buttons b) Operates on DC pulse codes c) Consists of relay circuits d) Bell code consists of three DC pulses

565.	One of the following statements is false regarding push button instrument a) First pulse of operational code is always negative b) Bell code is always positive c) While receiving bell code only CRR(N) energizes while other relays are deenergised d) Bell code and first operational code is same
566.	To cancel TGT condition before the train entry into the block section the following buttons are to be pressed at both stations concurrently in push button instrument a) BCB & b) BCB & TGB c) BCB & SHK d) BCB & SCK
567.	One of the following codes is not transmitted when LCB or TGB is pressed along with BCB at transmitting station in push button instruments a) TOL b) b) TCF c) c) TGT d) d) Line close
568.	One of the following statements is false regarding push button instrument a) TOL buzzer operates intermittently at the receiving station b) TOL buzzer operates intermittently at the sending station c) TOL buzzer operates continuously at the receiving station d) TOL buzzer operates continuously at the sending station
569.	TOL code can be temporarily suppressed by the sending station by keeping the Button pressed in push button instrument a) TGB b) b) BCB c) c) LCB d) d) PLB
570.	One of the following categorization of relays is not there in push button instruments a) External b) Line c) Local d) Internal
571.	Cancel button is to pressed along with ------ button in push button instrument a) BCB b) TGB c) LCB d) PLB
572.	To stop the TAR buzzer ----- is to be normalized, in push button instrument a) LSS control b) FSS control

	c) Starter control d) Shunt signal control
573.	TOL buzzer can be acknowledged by the --- button, in push button instrument a) BCB b) TGB c) LCB d) PLB
574.	Push button instrument is not suspended for one of the following failures a) When attention cannot be obtained direct on the block instrument b) When signals on the bell are received indistinctly or fail altogether c) If LSS fails to return to ON position as a train passes it d) If block phone fails
575.	One of the following is not a reason for outgoing bell code failure, in push button instrument a) Disconnection of line battery at sending end b) Disconnection in 250 ohm resistance in unit no. iv at sending end c) Disconnection of local battery at receiving end d) Line battery low at receiving end
576.	One of the following is not a reason for code generation failure , in push button instrument a) SHKR not picked up b) SCKR not picked up c) SNR not picked up d) SM's key is out at the other end instrument
577.	The verification of Rear Section is done by in IB Signalling System. (a) ACPR (b) ACZR (c) NSR (d) HSR
578.	In IBS System, the Signal Post Telephone is connected to (a) Advance Section (b) Rear Section (c) Receiving Station (d)LC Gate.
579.	The augmentation of Axle Counter on a Block Section enhance (a) First Vehicle (b) Last Vehicle (c) Partial Train (d) Arrival Train.
580.	The introduction of Single Section Digital Axle Counters rendered (a) Block Interface (b) UFSBI (c) Mini panel (d) Evaluator.
581.	The introduction of UFSBI in Absolute Block Working enabled (a) Quad (b) Media diversity (c) Only Radio (d)None
582.	The introduction of Single Section Digital Axle Counters rendered (a) Block Interface (b) UFSBI (c) Mini panel (d) Evaluator.

583.	Address configuration jumpers are provided in UFSBI (a) CPU Card (b)Input Card & Output Card (d) CC Card Card (d)Mother Board
584.	The Task assigned to output Card in UFSBI is (a) Safety Relays (b) to perform CRC(c) to disable Block (d) give buzzer.
585.	Shunt Key is handed over to the Loco-Pilot during Block Back Shunt (a) on Single Section (b) on Double Section (c) IBS(d) Siding.
586.	NSR in IBS System is used to (a) avoid Starter failure (b) avoid IBS failure (c) Home failure (d) None.
587.	SPAD in IBS System is indicated by (a) K-1 (b) K-2 (c) K-3 (d)K-4
588.	PB-1 is used along with Co-operation Indication in IBS for (a)Resetting AC failure (b) IBS Track failure (c) SPAD (d) LSS failure.
589.	PB-3 in IBS is used for (a) Cancellation (b) Co-operation (c) Independent Operation (d) None.
590.	PB-2 in IBS is used for (a) AC resetting (b) SPAD (c) Signal Blank (d) TOL Ack.
591.	HSR in IBS is used to (a) register SPAD (b) to retain ACZR (c) to avoid Signal Blank (d) None.
592.	In IBS system, IBS TPR front contact in ACZR circuit is masked by (a) NSR (b) ACZNPR (c)ACZR (d)HSR front contact.
593.	SPAD resetting can be done by using the following Button on co-operation (a) PB-2 (b) PB-1 (c) Ack Button (d)PB-3.
594.	Signal blank is indicated by the following Indication lamp in IBS (a) K-2 (b) K-1(c) K-3 (d) K-4.
595.	K-3 is associated with (a) LSS Knob (b) IBS Knob (c) Home Knob (d) Starter Knob.
596.	K-2 is associated with (a) LSS Knob (b) IBS Knob (c) Home Knob (d) Starter Knob.
597.	In IBS, the Button used for resetting Axle Counter with co-operation (a) PB-1 (b) PB-2 (c) PB-3 (d) Ack Button.
598.	ZR-3 front contacts are used for extending co-operation in IBS system IBS with (a)NSR (b) HSR (c) CRR (d) ACZR.
599.	The following Relay is used to avoid LSS failure in IBS system (a)HSR (b) NSR (c) ACZR (d) IBS TPR.
600.	The Rear Section is controlled by the following relay in IBS System

	a) ACPR (b) IBSTPR (c) LSS TPR (d) FVTPR.
601.	IBS System exists only in (a) Single Line (b) Double Line (c) Twin Single line (d) Quadruple Line.
602.	The frequency of Train Traffic can be improved if we adopt (a) IBS System (b)Absolute Block (c)Axle Counter (d)IPS System.
603.	In SGE DLBI, the Block Handle Co-ordination is checked by (a) PR relay (b) LCPR (c)ZR-3 (d) ASR-1
604.	The IBS passing at Danger is registered by (a)HSR (b) NSR (c) ACZR (d) ACPR
605.	In case of IBS failure, the Loco-Pilot should follow Rule No. (a)GR 3.76 (b) GR 3.75 (c) GR3.85 (d) GR 4.75
606.	The Block Overlap for Rear Section in IBS System is not less than (a) 500m (b) 400m (c) 600m (d) 200m
607.	IBS System in RE Area requires (a) Single Cutting (b) RE Cutting (c) operator at `C' class Station (d) None.
608.	The IBS Panel can be embedded with (a) LC Gate Panel (b) SM's Panel (c) Block Panel (d) None.
609.	Block Proving Axle Counters are added to conventional Block Instruments for (a) ensuring LV (b) ensuring LC Gate ©Distant Signal (d) None
610.	ACPR proves the status of the Block Section in case of (a) Digital Axle Counter (b) Analog Axle Counter (c) MSDAC (d) SSDAC.
611.	VPR proves the status of the Block Section in case of (a) Analog Axle Counter (b) Digital Axle Counter (c) MSDAC (d) SSDAC
612.	The augmentation of Axle Counter in conventional Block working ensures (a) Partial Train (b) Complete Train (c) only Engine (d) only Brake Van.
613.	VPR front contacts are proved in (a) Line Clear Circuit (b) Advance Starter Circuit (c) Block Clearance Circuit (d) all these three circuits.
614.	The advantage of Digital Axle Counter is (a) VPR is picked up at both the Ends (b) Central operation (c) End operation (d) None.
615.	In PTJ Push Button block Instrument, if BPAC is added the VPR PU contact is to be inserted in (a) PBPR circuit(b) SNR circuit (c) TRSR circuit (d) NR circuit.

616.	In PTJ DLBI, if BPAC is added, the VPR PU contact is inserted in (a) Line Clear Indication circuit (b) Bell circuit (c) SNR circuit (d) None.
617.	In FM Block Instrument, if BPAC is added, VPR PU contact is inserted in (a) HSR circuit (b)BLR circuit (c)NR circuit (d) PBPR circuit.
618.	Radio Interface is required for Block operating Signals where (a) the Line of Sight is not good (b) the Terrain is rocky (c) Cable laying possible (d) None.
619.	If an interface is connected for OFC compatibility, then the Block operating signals can be sent through (a) Quad cable (b) OFC (c) Radio (d) None.
620.	If BPAC s are introduced in Block Sections, we can (a) dispense with End to End electromechanical operations (b) introduce Block Panel with Relay cabinet © Relay Cabinet (c) media diversity (d) all the three
621.	SM's Alarm Panels are employed for (a) Preventive Maintenance and system failure (b) Train Operations (c) self restoration (d) None.
622.	In UFSBI Block operation, Block Shunt movement is indicated by (a) TCF display (b) TGT display (c) TOL display (d) Line Occupied display.
623.	SNK and SNOEK are possible only in (a) Conventional Block Operations (b) UFSBI system (c) Auto Signalling (d) None of these.
624.	During Block Section Shunt movement in UFSBI System (a) TOL Indication is given (b) Line occupied Indication is given (c) No Indication (d)Line Closed Indication.
625.	The TGTR used in UFSBI rack is of (a) neutral Relay (b) Latched Relay (c) AC Immunised Relay (d) None.
626.	The TCFR used in UFSBI rack is of (a) Latched Relay (b) neutral Relay (c) AC Immunised Relay (d) None.
627.	In UFSBI Block operation, the TOL Buzzer is givn at (a) Sending End (b) Receiving End (c) both the Ends (d) None.
628.	In UFSBI Block operation, the Section Clearance Buzzer is given at (a) Sending End (b) Receiving End (c) both the Ends (d) None.
629.	The number of input cards in UFSBI are (a) 8 (b) 6 (c) 7 (d) 9
630.	The number of Output cards in UFSBI are (a) 8 (b) 6 (c) 2 (d) 9

631.	The number of CPU Cards in UFSBI are (a) 6 (b) 4 (c) 3 (d) 5
632.	The CRC check is done in (a) Input card (b) Output card (c) CPU card (d) CC card.
633.	AZTR in UFSBI System is used as (a) Bell relay (b) Axle Counter proving Relay (c) Acknowledgement Relay (d) Shunt Key Relay
634.	The number of acknowledgement Buttons on Double Line UFSBI Block Operating Panel is (a) 3 (b) 2 (c) 4 (d) 1.
635.	Shunt Key is used as tangibility Authority in UFSBI system for (a) Block Forward (b) Block Back (c) Push Back (d)None
636.	Shunt Key release Key is employed in (a) Single Line Block Panel (b) Double Line Block Panel (c) Auto Section (d) Absolute Section.
637.	Line Clear Blocking Key is provided in (a) Double Line Block Panel (b) Single line Block Panel (c) Station Operating Panel (d) Power Panel
638.	During shunt movement in the Block Section, the Indication displayed on Block Panel is (a) TOL (b) Line occupied (c) Line Closed (d) None.
639.	In UFSBI Panel, the 5V DC supply is used for (a) Relay drive (b) Digital Logic circuits (c) Button circuits (d) Buzzer circuits.
640.	In UFSBI Panel, the CC Card is connected to (a) Input card (b) Button Relays (c) Output cards (d)Reset Unit.
641.	In UFSBI Panel the top Arrow illumination indicates (a) TCF (b) TGT (c) TOL (d) Line Closed.
642.	In UFSBI Panel the Bottom Arrow illumination indicates (a) TCF (b) TGT (c) TOL (d) Line Closed.
643.	In UFSBI Panel the SM's Key is required for (a) only Outgoing commands (b) Incoming commands (c) both I/O commands (d) None.
644.	What is essential for efficient Radio communication (a) Line of symmetry (b) Line of Sight (c) Line of Intersection. (d) None.
645.	UFSBI equipment can also be used in (a) IBS System (b) IPS System (c) Electrically operated LC Gate system

	(d) None.
646.	The Battery Bank used for UFSBI System is of (a)30V (b) 24V (c) 40V (d) 90V
647.	In UFSBI, the TTL to RS232 Protocol is done in (a) CPU Cards (b) CC Card (c) Output Card (d) None.
648.	UFSBI equipment can drive (a)Track Relays (b)Safety Signalling Relays (c) Line Relays (d) None.
649.	UFSBI is capable of driving (a)16 Input - 16 Output (b) 18 Input-18 Output (c) 6 Input- 6 Output (d) None.
650.	IUFSBI, Modem is connected to (a)Output Card (b) Input Card (c) Other End Modem (d) None.
651.	Radio Interface is required for (a) OFC Transmission (b) Signalling Cable Transmission(c) Radio wave Transmission (d) None of these.
652.	UFSBI Equipment requires (a) Opto-coupler for OFC Transmission (b) Radio Interface for OFC connection (c) OFC direct connection (d) None
653.	The total number of Relays in Efftronics make Block Interface is (a) 24 (b) 11 (c) 14 (d) 36.
654.	In SSBPAC (D) Block Working, the SM's operational time is (a) increased (b) reduced (c) retained as it is as in conventional Instruments (d) None.
655.	Axle counter system requires A) IRJ B) Wooden/PSC C) ESJ D) None
656.	An universal axle counter system can cover a very long section up to A) 20 Kms B) 10 Kms C) 5 Kms D) 15Kms
657.	For 'wheel detection' track device uses accordingly their type A) 'Amplitude Modulation' B) Phase Reversal Modulation' technique C) Both D) None
658.	data processing is done at the centralised place then the connection between 'Trackside Equipment' and 'Central Evaluator' is made using A) Quad B) OFC C) Signaling Cable D) A & B
659.	Resetting type of axle counter system in case of failure A) Hard Reset B) Conditional Hard Reset C) preparatory reset D) B &C

660.	One detection point Single section in A) Block section lines / siding B) IB C) Point Zone D)terminal
661.	Axle counter performance affected by A) EMI/EMC parameters B) Change of weather C) Flooding D) cable
662.	In Digital Axle counter, minimum distance between two Transduces (DP) to be maintained is A) 3 meters B) 2 meters C) 9 meters D) 5 meter
663.	Axle counters is a substitute for A) track circuits B) Block C) CLS D) AFTC
664.	Initially Single entry/exit RDSO Mark-I model was introduced in A) Srilankan Railway B) Indian Railways C) Konkan Railways D) Northern Railways
665.	"UNIVERSAL AXLE COUNTER" is universal system up to two entry / exit points of one section of A) straight road B) Points zone portion C) Both D) None of these
666.	"UNIVERSAL AXLE COUNTER" is universal system up to four entry / exit points of one section of A) straight road B) Points zone portion C) A or B D) None of these
667.	An axle counter system can cover a very long section up to A) 15 Kms B) 12 Kms C) 5 Kms D) 45 Kms
668.	Axle counter requires A) Insulation joint B) Fish plate C) Glued joints D) No insulation joint
669.	Transmitter coils are always fixed to A) outer side of the rail B) Inside of the rail C) any side of the rail D) A or B
670.	Track device uses technique for wheel detection A) Amplitude Modulation B) Phase Reversal Modulation C) A or B D) both A & B
671.	Amplitude Modulation B) Phase Reversal Modulation C) A or B D) both A & B
672.	In case of Digital Axle Counters which Modulation technique is favored A) Amplitude Modulation B) Phase Reversal Modulation C) A or B D) both A & B

673.	In Analog Axle Counters all the required logics are achieved through A) software B) hardware only C) none of these D) A and B
674.	In Digital Axle Counters all the required logics are achieved through A) software B) hardware only C) none of these D) A and B
675.	For resetting the Axle counter system which reset shall not be provided A) piloting B) conditional C) Direct Hard reset D) A and B
676.	Trolley Suppression circuit is not required for which modulation technique A) Amplitude Modulation B) Phase Reversal Modulation C)both A & B D) none of these
677.	Transmitter coils are energized by A) Common oscillator B) Separate oscillator C) A&B D) A or B
678.	The separation between two track devices of different axle counter system should be minimum of A) 3 meters B) 2 meters C) 9 meters D) 5 meter
679.	When a wheel passes between Tx and Rx coils, disturbs A) frequency B) magnetic flux C) both a & b D) none of the
680.	In UAC, input voltage to EJB and EV is A) 24 V.DC B) 48 V.DC C) 60 V.DC D) 90V.DC
681.	TX1 and TX2 coils are connected in _____ Analog axle counter A) series B) in Parallel and series C) in Parallel D) none
682.	Rectified Voltage in CEL SSDAC A) 2.2 V.DC B) 12 V.Dc C) 8 V.Dc D) 9 V.Dc
683.	UAC can work for train speed upto A) 250kmph B) 350kmph C) 300kmph D) 200kmph
684.	In UAC, Transmitter signal (coil) frequency is _____ A) 21 kHz B) 23 kHz C) 31 kHz D) 5KHz
685.	Preparatory reset can be used in case of the _____sections provided with axle counters. A) Main line B) Section between Advance starter and IBS C) Block Instrument and BPAC D) all of these.
686.	In UAC, DC-DC converter output voltages are ____, _____ & _____ A) +5 V, +12V, +12V(ISO) B) +5 V, -12V, +12V(ISO) C) +5 V, +10V, +10V(ISO) D) +5 V, -10V, +10V(ISO)
687.	In Universal Axle counters, the minimum input channel voltage coming from EJB required at Evaluator CTB is _____ mv AC.

	A) 1000	B) 150	C) 175	D) 1500
688.	In UAC, Oscillator card output voltage & frequency is _____ A) 60 VAC & 5KHz	B) 30 VAC & 5KHz	C) 60VAC & 5Hz	D) 30VAC & 5Hz
689.	In UAC Receiver coil output voltage is _____ A) 0.7 to 1.0 V AC	B) 60 VAC	C) 1.0 to 1.2 V DC	D) 105 to 110mv AC
690.	In UAC Transmitter coil current is _____ A) 100 milli Amps Ans. C	B) 3 to 5 micro Amps	C) 420 milli Amps	D) 420 micro Amps
691.	In UAC Receiver card out put voltage is _____ A) 1.2 to 1.5 V AC	B) 60 VAC	C) 1.2 to 1.5 V DC	D) 105 to 110mv AC
692.	In UAC, Dip voltage measured at the Receiver output coil shall be not more than ------ of its normal value. A) 90%	B) 10%	C) 15%	D) 85%
693.	Minimum spacing between sleepers for fixing Tx / Rx is _____ A) 550 mm	B) 200mm	C) 800mm	D) 400mm
694.	Minimum length of Track circuit required for trolley protection on either side of a detection point in single Line section is _____ mtrs A) 5 Rail lengths	B) 3 Rail lengths	C) 8 Rail lengths	D) 9 Rail lengths
695.	Relays used for EVR & SUPR are of _____ neutral line relays A) QS3 type & 12V DC C) QN1 type & 12V DC		B) QS3 type & 24V DC D) QNA1 type & 12V DC	
696.	For connecting the output of electronic junction box to evaluator, the following cables are to be used depending upon the distance between the two and whether to be used in R.E. or non R.E. Area. A) 4 quad axle counter cable as per specification No. TC-30 for RE & TC-31 for Non-RE B) PET quad of main telecom cable as per specification No.TC-14/75 C) Polythene jelly filled telephone cable as per specification No.TC-41 /90. D) All of these			
697.	SSDAC used with block working, type of reset used is _____ A) Direct Hard Reset C) Preparatory Reset		B) Conditional Hard Reset D) Any one these can be used	
698.	In SSDAC of CEL make, card no 5 is _____ A) Modem Card. C) Micro controller Logic Board		B) Event Logger Card. D) Relay Driver Card.	

699.	In SSDAC of CEL make, _____ no. of conductors required for connecting two SSDAC units. A) 2 B) 4 C) 8 D) 10
700.	In SSDAC of CEL make, card no1 is _____ A) scc1 B) Event Logger Card. C) Micro controller Logic Board D) Relay Driver Card.
701.	Baud rate of modem card in SSDAC of CEL is _____ A) 56KBPS B) 3000BPS C) 300 BPS D) 9600BPS Ans. C
702.	In SSDAC of CEL make, card no 2 is _____ A) Modem Card. B) SCC2 C) Micro controller Logic Board D) Relay Driver Card.
703.	In SSDAC of CEL make, the function of the Micro-controller Logic Board card is A) Wheel detection B) Train direction is checking and Wheel counting. C)Receives the remote wheel count and computes the status of the section for clear or occupied. D) All of these
704.	In SSDAC of CEL make, card no 3 is _____ A) MLB 1 B) Event Logger Card. C) Micro controller Logic Board D) Relay Driver Card.
705.	In SSDAC of CEL make, Input voltage of the DC-DC converter Card is A) 12V DC B) 110V AC C) 24V DC D) 110V DC
706.	In SSDAC of CEL make, card no 4 is _____ A) Modem Card. B) Event Logger Card. C) Micro controller Logic Board D) MLB 2
707.	In SSDAC of CEL make, output voltages of the DC-DC converter Card is A) 5V DC & 12V DC B) 5V DC & 24V DC C) Both A & B D) None of these
708.	In SSDAC of CEL make, card no 6 is _____ A) Modem Card. B) Event Logger Card. C) Micro controller Logic Board D) Relay Driver Card.
709.	. In SSDAC of CEL make, card no 7 is _____ A) Modem Card. B) Event Logger Card. C) Micro controller Logic Board D) Relay Driver Card.
710.	In SSDAC of CEL make, card no 8 is _____ A) Modem Card. B) Event Logger Card.

	C) DC-DC conv D) Relay Driver Card.
711.	The Indian Railways comprises the world's _____largest rail network under a single management. a) FIRST b) Second c) Third d) fourth
712.	The Indian Railways network transports about _____million passengers a) 18 b) 16 c) 17 d) 15
713.	_____ is the slogan of Indian Railways a) safety b) safety first c) safety culture d) safety operation
714.	Indian Railways have been periodically getting its safety preparedness reviewed by expert committees a) judges b) chief judges c) chief judges of supreme court d) chief judges of high court
715.	Railway Accident Committee started in ____ a)1962 b) 1983 c) 1964 d) 1965
716.	Railway Accident Inquiry Committee started in _____ a) 1968 b) 1987 c) 1934

	d) 1967
717.	Railway Accident Inquiry Committee started in _____ a) 1975 b) 1978 c) 1977 d) 1956
718.	Railway Safety review Committee started in _____ a) 1989 b) 1990 c) 1998 d) 1975
719.	Automatic clearance of Block Section has been provided through use of _____ a) AFTC b) DCTC c) AXLE COUNTER d) TPWS
720.	1. Failures of 'Railway Equipment' are also treated as technical and potential _____ a) Failures b) Accidents c) Asset failures d) assets safely
721.	2. All types of collisions comes under the Category of ___ a. Train accidents b. Yard accidents c. Equipment failures d. Indicative accidents
722.	3. Cases of fire and blasts comes under the Category of _____ a) Train accidents b) Yard accidents c) Equipment failures d) Indicative accidents
723.	4. LC gate accidents comes under the Category of _____

	a) Train accidents b) Yard accidents c) Equipment failures d) Indicative accidents
724.	5. All types of derailments comes under the Category of_____ a) Train accidents b) Yard accidents c) Equipment failures d) Indicative accidents
725.	6. Collision on obstruction or passing over obstruction but safe_____ a) Train accidents b) Yard accidents c) Equipment failures d) Indicative accidents
726.	7. Averted collisions cases comes under the Category of_____ a) Train accidents b) Yard accidents c) Equipment failures d) Indicative accidents
727.	8. Signal passing at danger (SPAD cases) comes under the Category of_____ a) Train accidents b) Yard accidents c) Equipment failures d) Indicative accidents
728.	C&W, Loco failures comes under the Category of_____ a) Train accidents b) Yard accidents c) Equipment failures d) Indicative accidents
729.	Engg. department failures comes under the Category of_____ a) Train accidents b) Yard accidents c) Equipment failures

	d) Indicative accidents
730.	Electric department failures comes under the Category of_____ a) Train accidents b) Yard accidents c) Equipment failures d) Indicative accidents
731.	S&T department failures comes under the Category of _____ a) Train accidents b) Yard accidents c) Equipment failures d) Indicative accidents
732.	Death of passenger or railway worker comes under the Category of____ a) Consequential Train Accidents b) Yard accidents c) Equipment failures d) Indicative accidents
733.	Compulsory retirement Item number of major penalty is a) VII b) VIII c) IX d) VI
734.	Removal from Service Item number of major penalty a) VIII b) VII c) IX d) VI
735.	Dismissal from Service Item number of major penalty a) IX b) VII c) IX d) VI

736.	Under block failure conditions, Trains were to be worked on paper line clear (PLC) by exchanging _____number through VHF sets a) PN b) AN c) CN d) DN
737.	Relay room must be opened only after entering in the _____ Relay room key register a) SS b) SM c) SMR d) TI
738.	A written advice is to be sent by the _____ to the ESM regarding signal failure a) Station Manager b) Station Master c) Traffic inspector d) signal inspector
739.	Validation work of data logger done by a) JE only b) SSE only c) JE/SSE d) ASTE
740.	After any replacement or any change in AFTC track circuit, gain adjustment and checking of _____ is essential and compulsory. a) ASR b) TSR c) UCR d) TLSR
741.	Signal technician and JE/SSE are the backbone of _____ a) Commercial b) S&T c) operating d) mechanical

742.	Signal staff shall be created as per _____ to avoid overburden of work. a) yard stick b) Operating staff c) track circuit modified d) Installation defect
743.	Comprehensive _____ for modern signaling equipments a) BMC b) CMC c) PMC d) GMC
744.	Change over Relay wiring can be done with _____%testing without resorting to disconnections. a) 25 b) 50 c) 100 d) 10
745.	Injuries are classified as a) Grievous' and 'Simple b) Grievous' c) Simple d) Emasculation.
746.	Injures as defined in Section _____ of Indian Penal Code a) 320 b) 120 c) 220 d) 420
747.	Any hurt which endangers life, or which causes the sufferer to be, during the period of twenty days, in severe bodily pain or unable to follow his ordinary pursuits. a) Permanent privation b) Emasculation. c) GRIEVOUS INJURIES d) SIMPLE INJURIES

748.	Hospitalization up to 30 days a) Permanent privation b) Emasculation. c) GRIEVOUS INJURIES d) SIMPLE INJURIES
749.	Injuries for a period of _____ hours after the occurrence of the accident. a) 12 b) 24 c) 36 d) 48
750.	For the purpose of this section 124 “passenger” includes a _____ servant on duty a) railway b) Injured c) Compartment d) administration
751.	No compensation shall be payable under this section by the railway administration if the passenger dies or suffers injury due to: a) Suicide b) Self – inflicted injury c) Any natural cause or disease d) All the above
752.	The accidental falling of any passenger from a train carrying passengers_____ a) inflicted injury b) “Untoward incident” c) accidental falling d) commission of robbery
753.	No ex-gratia is admissible to the_____ a) trespassers b) person electrocuted c) road users at unmanned level crossing

	d) All the above
754.	Ex-gratia is also payable to the_____ a) rail servants killed b) injured by the moving train while performing their duty c) injured passenger during accident. d) All the above
755.	The Ex-gratia payment should be sanctioned /arranged preferably on the spot by an officer not less than a senior scale nominated by the _____ a) GM b) AGM c) CRS d) CSO
756.	_____ equipped telephone should be made available to passengers to communicate with their relatives a) ISD b) STD c) LOCAL d) All the above
757.	_____ can hire a few cellular phones in case of passenger train accidents a) SS b) SM c) TI d) DSO
758.	Data logger is a ---------- based system a) microprocessor b) micro controller c) digital d) analog
759.	Data logger can be used to log the data of a) PI installation only b) EI only installation only c) RRI installation only

	d) PI/EI/RRI installations
760.	In data logger data means a) Relay inputs b) Analog voltages c) Serial inputs of EI d) All the other three
761.	For data logger ------ contact of a relay is used a) front b) back c) front and back d) any potential free
762.	Data loggers are used at stations /stations /yards, whereas in case of Auto section & IBH mini data logger known as ----- used a) FEP b) RTU c) FAS d) CMU
763.	All the data logger interfaces relay contacts through a) modem card b) digital input card c) analog input card d) communication card
764.	In data logger 4 wirelesses modems shall be used if the serial communication a) is more than 8 km b) less than 3km c) more than 3km d) 2km
765.	Data logger is having a microprocessor ---------- a) M68000 b) M6832 c) M6890 d) M6846

766.	Data logger can store up to -------- lakh packets a) 100 b) 10 c) 15 d) 20
767.	Data logger scans relay inputs once in every ----- milli seconds a) 15 b) 12 c) 16 d) 18
768.	Data logger scans analog inputs in ------- a) less than 2 sec b) 5 seconds c) less than 1 sec d) 2 seconds
769.	The data logger time clock with internal battery backup will give a data retention up to a) 13 years b) 12 years c) 14 years d) 10 years
770.	The CPU board in Efftronics make data logger has -------- number of dip switches a) 1 b) 2 c) 3 d) 4
771.	The dip switches on CPU board are used to configure -------- a) Digital input capacity b) Analog input capacity c) Data logger ID d) both a & c
772.	Efftronics make data logger ID number starts from ---------- a) 63

	b) 65 b) 64 d) 66
773.	The data logger ID can be configured using a ---------- a) 8 way dip switch b) 10 way dip switch c) 4 way dip switch d) 12 way dip switch
774.	The button on the CPU board front panel is used to ----- a) reset the modem b) shut down power c) refresh the display on CPU d) reset the CPU
775.	Maximum ---------- relay inputs can be connected to one digital input card a) 45 b) 48 c) 128 d) 64
776.	Digital input cards are connected to mother board through ------- connectors a) quad cable b) tail cable c) Flat ribbon Cable d) multi core indoor cable
777.	Protocol converter is needed to connect data logger with a) EI system b) IPS c) RTU d) RRI
778.	The LED matrix on CPU board has ---------- number of LEDs a) 580 b) 512 c) 564

	d) 412
779.	If power supply is disconnected a) data logger continues to work b) logged data is retained in memory c) data logger will not receive data but sends data d) only analog data is logged
780.	The seven segment LCD on CPU board displays a) current time of data logger b) analog input status c) modem link status d) digital input capacity of data logger
781.	Rating of DC-DC converter shall be 5A upto ------- digital inputs of data logger a) 512 b) 1024 c) 256 d) 2048
782.	Data logger modem is connected with ---- number of wires a) 2 wires b) 6 wires c) 4 wires d) 8 wires
783.	The type of Microprocessor used in Data logger is a) M68000 b) M678500 c) M6800 d) M695300
784.	Each analog scanner card interfaces ----- analog inputs a) 12 b) 10 c) 16 d) 8

785.	One analog scanner unit consists of --- number of analog scanner cards a) 4 b) 2 c) 6 d) 5
786.	Data logger is configured with a minimum of ---- analog inputs a) 10 b) 12 c) 18 d) 32
787.	Data logger is configured with a minimum of ------- digital inputs a) 556 b) 275 c) 512 d) 1024
788.	The analog scanner card which supports -------- channels has a micro controller in it a) 1 to 8 b) 17 to 32 c) 8 to 16 d) 33 to 40
789.	The data logger digital input capacity can be expandable up to ----- inputs a) 4048 b) 4096 c) 4036 d) 4012
790.	The data logger analog input capacity can be expandable up to ----- inputs a) 16 b) 48 c) 75 d) 96

791.	The data logger event Packet has ------ number of bytes a) 12 b) 14 c) 13 d) 10
792.	One analog event Packet is generated whenever the analog channel value changes beyond ---------- % of nominal value a) 15 b) 12 c) 5 d) 10
793.	The communication buffer can hold ---------- packets in its memory a) 128 b) 100 c) 120 d) 180
794.	The working voltage of data logger is ------ Volts DC a) 48 b) 12 c) 24 d) 110
795.	The data transmission speed between data logger and another data logger is ----- a) 57.6 kbps b) 64kbps c) 115kbps d) 56 kbps
796.	Up to 1024 digital inputs the rating of DC-DC converter can be a) 10A b) 8A c) 5A d) 15A

797.	The data from networked data loggers first goes to ------- a) Front End Processor b) Server c) Central Monitoring Unit d) LAN switch
798.	TPWS equipment is of ETCS --------- level equipment a) 0 level b) level 1 c) level 2 d) level 3
799.	------- number of relay front contacts can be wired as inputs to LEU a) 5 b) 8 c) 10 d) 4
800.	FS mode is achieved by TPWS when system switched on in level 0 and a) Loco pilot wants b) when loco passes the first group of balises c) loco pilot switches on FS mode d) system is isolated
801.	When SPAD occurs -------- are applied a) Emergency brakes b) no brakes c) service brakes d) both service & emergency brakes
802.	Whenever speed of train is +5 kmph above permitted speed ------ are applied a) Emergency brakes b) no brakes c) service brakes d) both service & emergency brakes
803.	When the train approaches very near to stop signal at danger the driver should follow ---- a) 50kmph b) release speed c) 40kmph d) any speed

804.	The infill balise is placed --------- meters in front of the signal a) 100 b) 200 c) 400 d) 500
805.	In ETCS level 1, the line side signals are -------- a) removed b) not mandatory c) required d) in IR only removed
806.	In SR project --------- are applied, if switchable balise is missed a) No brakes b) service brakes c) emergency brakes d) service and emergency brakes
807.	If TPWS becomes faulty, the train can be worked as a) by calling S&T b) system can be isolated by loco pilot c) by calling electrical department d) at speed less than 20kmph
808.	In Auto section, the loco pilot can pass a signal at danger in ----- mode a) Standby b) Trip c) Onsite d) staff responsible
809.	When a signal is passed at danger ----- mode is set a) Trip b) Shunt c) Onsite d) staff responsible
810.	The release speed is set by -------

	a) loco pilot b) automatically by system when the train approaches a stop signal at danger c) guard d) control centre
811.	DMI stands for -------- a) Driver Machine interface b) Developed mechanical interface c) Double machine interface d) driver modernized interface
812.	The MA is transmitted in TPWS by ------ a) Radio block b) switchable balise c) fixed balise d) infil and switchable balise
813.	TPWS is similar to a) OBC b) TCAS c) ACD d) TWAS
814.	On board system of TPWS consists a) OBC b) BTM & SDMI c) wheel sensors d) All the other three
815.	Track side system of TPWS consists a) LEU b) Balise c) both a & b d) Radio block centre

816.	BTM generates ---------signal for transmission to track side a) 24MHZ b) 28MHZ c) 25MHZ d) 27MHZ
817.	On board antenna is provided a) near the driver b) in the LT room of cab c) On the top of the cab d) Under the cab
818.	The input data to be fed to OBC through DMI is a) length of train b) wheel diameter c) deceleration factor d) All the other three
819.	The on board computer takes input from a) BTM b) Speed sensor c) all the other three d) DMI
820.	DMI is having a ----- for various controls & data entry a) set of buttons b) set of switches c) touch screen d) All the rest
821.	The PIND module inside LEU is a a) Power supply module b) Input module c) output module d) processor module
822.	The PFSK module inside LEU is a a) Power supply module

	b) Input module c) output module d) processor module
823.	The LEU module works on ---------- volts DC a) 24 b) 48 c) 60 d) 110
824.	The TPWS has a total of------- type of packets for track to train transmission a) 30 b) 38 c) 40 d) 45
825.	Fixed balise is connected to---------- a) LEU b) BTM c) Antenna d) none TCAS includes the functions of a) TPWS b) ACD c) AWS d) TPWS & ACD
826.	The on board system of TCAS consists a) Radio antenna b) GPS antenna c) both a & b d) BTM antenna
827.	Stationary TCAS unit is provided at a) Stations

	b) IBS c) Mid section LC gates d) At all the locations mentioned in a, b & c
828.	RFID tags are fitted ------- a) In the cab b) under the cab c) on the track d) in track side location
829.	RFID tags provide a) site specific static information b) Site specific dynamic information c) Both static and dynamic information d) Movement authority
830.	----- number of frequencies are used for radio transmission in TCAS a) 3 b) 2 c) 4 d) 6
831.	Stationary TCAS unit transmits data on ------ frequency a) f1 b) f2 c) f3 d) f1 & f2
832.	Stationary TCAS unit receives data on ------ frequency a) f1 b) f2 c) f3 d) f1 & f2
833.	Locomotive TCAS unit receives data normally on ------ frequency a) f1

	b) f2 c) f3 d) f1 & f2
834.	The required communication range in TCAS is up to ------- a) 2.5km b) 3km c) 3.5 km d) 4.5km
835.	In TCAS on track side ------ are provided a) RFID tags b) fixed balises c) switchable balises d) both RFID tags and balises
836.	TCAS is developed to meet the requirements of -------- standard a) SIL 1 b) SIL 2 c) SIL 3 d) SIL 4
837.	In AWS the opto coupler unit needs ------ supply a) 12V DC b) no supply c) 24V DC d) 110V DC
838.	The cable connecting the opto coupler unit with track magnet has ------- number of cores a) 12 b) 10 c) 6 d) 8
839.	The opto coupler unit establishes ------ loops in track magnet for each signal aspect a) 2

	b) 3 c) 6 d) 4
840.	The auxiliary output cable of opto coupler consists a) 4 cores b) 5 cores c) 6 cores d) 3 cores
841.	In AWS ------ frequency is used to detect the presence of track magnet on track side a) 60 khz b) 200 khz c) 100 khz d) 50 khz
842.	In AWS ------ frequency is used to transfer data from track magnet to on board a) 60 khz b) 200 khz c) 100 khz d) 50 khz
843.	The frequency range used in AWS is ---------- a) 2800 - 7600 hz b) 2000 - 4000hz c) 4000 - 6000hz d) 5000 - 7000khz
844.	The 50KHZ & 100KHZ frequencies are generated in a) Opto coupler unit b) track magnet c) Engine magnet d) On board computer
845.	The track magnet is located at ----- distance from the right hand side rail a) 231 mm b) 431 mm

	c) 251 mm d) 351 mm
846.	The permitted air gap between track magnet and engine magnet is ----- a) 200mm – 250mm b) 175 – 225mm c) 110mm – 200 mm d) 200 – 300mm
847.	AWS is suitable to work in sections with speed up to ----- KMPH a) 200 b) 150 c) 175 d) 250
848.	The loco pilot has to acknowledge a buzzer alarm in --- seconds a) 10 seconds b) 2 seconds c) 4 seconds d) 6 seconds
849.	In ETCS Level 0 --------- is monitored a) Only speed supervision b) line signal aspects c) SPAD cases d) both a & b
850.	In ETCS Level 1 line signals ---------- a) Are not compulsory b) are compulsory c) can be removed d) only main line signals are needed
851.	Moving block system is possible in ETCS ---------- a) Level III

	b) Level II c) Level III & Level II d) Level I & II
852.	ERTMS uses ---------- for communication a) GPS b) GSM c) GSM (R) d) Internet
853.	The LEU of ETCS Level I is provided --------- a) on signal unit b) nearer to signal c) on board d) under the cab
854.	In ECTS the STM of Onboard equipment stands for a) site transmission module b) signal transmission module c) single transmission module d) specific transmission module
855.	In ACD -------- is used for communication between locomotives a) GPS b) Radio frequency c) GSM (R) d) GPS & GSM
856.	The main purpose of ACD is -------- a) To prevent collisions b) To prevent derailments c) To increase section speed d) To pre warn loco pilots
857.	Normal power supply for signalling installation shall be. a) 415V b) 230V AC c) 110V AC d) 110V DC
858.	In non-railway electrified area power supply shall be drawn form. a) Up AT b) Dn AT c) Stn. Feeder d) Solar panel

859.	In Railway electrified area on single line section one of the following sources are not used. a) DG b) local supply c) single AT d) Dn AT
860.	In Railway electrified area Primary supply for signalling installation shall be. (a) a) Main AT b) Generator c) local supply d) Generator 1
861.	The grade of Power cable shall be. a) 1200V b) 440V c) 230V d) 1100V
862.	Size of power cable drawn from 10KVA transformer to CLS panel. a) 2x25 sq mm at conductor b) 2x 70 sqmm at conductor c) 2x150 sq mm conductor d) 2x300 sqmm conductor
863.	Capacity of the equipment under maximum load condition require at. a) 1.3 times b) 1.4 times c) 1.2 times d) 1.5 times
864.	AC supply for signal transformer shall be derived from a voltage regulate conforming to the specification. a) IRS S-64/89 b) IRS S-74/89 c) IRS S-74/85 d) IRS -74/90
865.	In battery room acid proof tiles to be fixed on ground and to wall height up to. a) 1.4M b) 1.5M c) 1.6M d) 1.7M
866.	Power supply to each circuit should be protected through HRC fuse of capacity. a) 1.2 times b) 1.3 times c) 1.4 times d) 1.5 times of the rated requirement
867.	Power distribution board shall be made of hylam sheet thickness. a) 3mm b) 6mm c) 12mm d) 15mm
868.	In Lead acid cell (LMLA type) the grade of dilute sulphuric acid used in. a) IS:264 b) IS:266 c) IS:268 d) IS:269
869.	The demineralised water to be added in Lead Acid cells conforming to a) IS:1049 b) IS:1069 c) IS:266 d) IS:268
870.	In non re area battery required for track circuit length for more than 100mts in plug in type 9ohms relay is a) 2V b) 4V c) 6V d) 8V

871.	RE area battery required for TC length of 450mts for plug in type 9 ohms relay a) 4V b) 6V c) 2V d) 8V
872.	In RE area battery required for TC length of up to 750mts to plug in type 9ohms relay is a) 4V b) 2V c) 8V d) 6V
873.	Specification for battery charger used for charging LMLA cells is a) 586-2000 b) 574-2000 c) 576-2000 d) 584-2000
874.	Recommended capacity of charger used for battery capacity 120AH is. a) 10A b) 20A c) 30A d) 50A
875.	Specification for track feed battery charger is a) S-89/93 b) S-76/93 c) S86/2000 d) S74/2000
876.	Battery to be isolated from the load of output voltage goes a) 1.7V/cell b) 1.8V/cell c) 1.9V/cell d) 2V/cell
877.	Specification for integrated power supply (IPS) is a) RDSO/SPN/165/2012 b) RDSO/SPN/187/2012 c) RDSO/SPN/99/2012 d) RDSO/SPN/182/2012
878.	Lightning protection for AC inputs lines given is a) A type b) B type c) C type d) D type
879.	The Satisfactory working voltage of IPS input supply is a) 150-200V b) 150-175V c) 150-230V d) 150-275V
880.	The Voltage drop in 230V AC feeding from Stn. To LC gate shall be a) 7-8 V per Km b) 9-12 V per Km c) 13-14 V per Km d) 15-18 V per Km
881.	Power requirement for devices used for Analog Axle counter i.e Evaluator, junction Box & resetting Box is a) 21.6 - 28.8V Dc b) 19.2 - 24V Dc c) 24 - 26V Dc d) 28.8 - 30V Dc
882.	For Universal Axle Counter for track circuiting in the yard, the junction box consumes a current of a) <100ma b) <150ma c) <250ma d) <350ma

883.	For Universal Axle Counter for track circuiting in the yard, with a evaluator of ¾ device consumes a current of a) 1A b) 2A c) 3A d) 4A
884.	Relay racks shall have space to accommodate relays for future alteration. a) 10% b) 15% c) 20% d) 25%
885.	For LED light signals the ECR shall only be used is. a) ON ECR b) OFF ECR c) Route ECR d) LED ECR
886.	Where electronic timers are used they shall be of a) single b) double c) triple d) Quadruple
887.	Wiring of relay rack & various equipment shall be in accordance with the IRS specification. a) S-23 b) S-76 c) S-74 d) S-92
888.	Power supply extended from power distribution board to relay room shall be a) 3/20 wire b) 25mm c) 10sq mm d) 7/20 wire
889.	Power distribution with in relay room from rack to rack is done by using a) 16/0.2 mm b) 3/20 wire c) 10Sq.mm d) 25 Sq.mm
890.	Specification for 16/0.2mm single core, multi strand, flexible annealed tinned copper wire is a) IS674 b) IS684 c) IS694 d) IS794
891.	Total capacity of a rack with Max. Q-Style relays are. a) 38relays b) 48relays c) 58relays d) 64relays
892.	Total capacity of a rack with Max. K-50 relays are. a) 48relays b) 50relays c) 60relays d) 32relays
893.	Total capacity of a rack with Max.TMA type relays are. a) 80 relays b) 70 relays c) 90 relays d) 120 relays
894.	Fabrication of relay rack shall be as a) 65x65x5 mm b) 55x55x5 mm c) 45x45x5 mm d) 35x35x5 mm
895.	The clearance between two rows of relays on a rack is a) 55 mm b) 65 mm c) 75 mm d) 85 mm
896.	The clearance of relay rack from wall is a) 90 cm b) 90 mm c) 80 cm d) 70 cm

897.	Clearance of last row of relays from floor level on the relay racks shall be at least. a) 300mm b) 400mm c) 500mm d) 600mm
898.	Clearance of ARA terminals from floor level on the relay rack shall be. a) 300mm b) 500mm c) 600mm d) 400mm
899.	Location box available in S&T installation are. a) Full L.B b) half L.B c) Quarter L.B d) All the three
900.	Minimum depth of the foundation signal location box below the ground level shall be a) 50 mm b) 100 mm c) 150 mm d) 200 mm
901.	Bitumen to be applied are the bottom of location box to avoid a) Ants b) Rodents c) snakes d) Corrosion
902.	Foundation bolts used for erection of half/full location box a) 8x300 mm b) 12x300 mm c) 16x200 mm d) 16x300 mm
903.	RDSO specification for outdoor signaling cable is a) IRS S-63/89 b) IRS S-74/89 c) IRS S-53/89 d) IRS S-83/89
904.	Percentage of spare conductors provided in each main cable upto the farthest point zone a) 5% b) 10% c) 20% d) 30%
905.	Percentage of spare conductors provided in each main cable from the outermost to outermost signals a) 5% b) 10% c) 20% d) 30%
906.	Spare conductors to be kept spare if we use 3 conductor or less. a) 1 b) 2 c) 3 d) not required
907.	IRS specification for screened cable shall be a) IRS S-35 b) IRS S-23 c) IS-1554 d) IRS S-74
908.	Cable route plan prepared by S&T shall be approved by a) OHR b) Engineering c) Electrical d) Engineering and electrical
909.	In RE area when the cable is laid at a depth greater than 0.5m a minimum distance of cable from the OHR structure is a) 0.5m b) 1m c) 1.5m d) 3m

910.	Where there are OHR structures along the cable route the cable trenches shall be a) 2.5mm b) 5mm c) 4.5mm d) 5.5mm from center of the track
911.	Cables to be laid beyond home signal, automatic signal area, IBH& level crossing gates at a depth of a) 0.8m b) 1m c) 1.2m d) 1.5m
912.	The width of the cable trench shall normally be a) 300mm b) 450mm c) 500mm d) 550mm
913.	Thickness of sand covered in the cable trench is a) 2" b) 4" c) 6" d) 8"
914.	The power cables must not be laid in the same trench along with signaling cables a) electrical Dept b) Telecom of BSNL c) OHE d) All the three
915.	Points shall be checked for proper housing of switch rail with stock rail for not less than a) 2 sleeper b) 3 sleeper c) 4 sleeper d) 5 sleeper
916.	The actual distance behind the toe of the switch towards SRJ shall be within the limits of nominal track gauge. a) 10 mm b) 15 mm c) 20 mm d) 25 mm
917.	Point machine ground connection rods shall be clear of the bottom of the rail a) 25mm to 40mm b) 15mm to 30mm c) 10mm to 25mm d) 20mm to 30mm
918.	From the toe of the closed switch 5 mm obstruction test piece is placed at a distance of a) 110 mm b) 220 mm c) 143 mm d) 150 mm
919.	Normal cross protection in point machine is made when the point is not in a) Normal b) Reverse c) Normal &Reverse d) In the middle
920.	Reverse cross protection in point is made when the point is not in. a) Normal b) Reverse c) Normal & Reverse d) In the middle
921.	With 1.6 mm test piece between stock rail & switch rail at 150 mm from toe of the closed switch ensure a) Detection contact make b) Detection contact broke c) Lock entered d) Lock entered& detection made

922.	With 5mm test piece between stock rail & switch rail at 150mm from toe of the closed switch ensure that a) Detection contact make b) Lock entered c) Lock entered & Detection made make d) Lock not entered & detection not make
923.	Friction clutch should be adjusted for slipping current _____ a) 1-3 times b) 2-4 times c) 1.5 – 3 times d) 1.5- 2 times
924.	In RE area the maximum permissible length of parallelism between point contactor and point motor in single line is_____ a) 1100 m b) 1000m c) 800 m d) 910 m
925.	In re area the maximum permissible length of paralleling between point contactor and point motor in double line is._____ a) 910 m b) 800 m c) 1000 m d) 1100 m
926.	The value slipping current of friction clutch is_____ a) 2-3 Amps b) 3-5 Amps c) 4-6 Amps d) 5-6 Amps
927.	The periodicity of track locking shall be _____ a) 1 month b) 2 month c) 3 month d) 4 month
928.	Check insulation of point cables with 500V megger once in a) a month b) once in 3month c) once in 6month d) once in a year
929.	The periodicity of pouring lubricating oil SAE30 through into the reservoir for lubrication gear box of the motor is._____ a) a month b) once in 3month c) once in 6month d) once in a year
930.	Commutator of the point machine shall be cleaned with a) White paper b) Cotton cloth c) Hand kerchief d) Chamois leather
931.	For conventional point layouts the clearance at junction of rail head (JOH) a) 25-40 mm b) 35-45 mm c) 40-45 mm d) 60 mm
932.	For 220mm throw IRS point machine with clamp type lock arrangement the clearance at junction of rail head (JOH) is a) 50 mm b) 40 mm c) 60 mm d) 30 mm
933.	Opening of tongue rail at the toe with thick web switches is_____ a) 115 mm b) 118 mm c) 143 mm d) 160 mm

934.	The distance between centre to centre of sleeper no 3 & 4 for fixing universal point machine is a) 685 mm b) 700 mm c) 710 mm d) 745 mm
935.	The distance between centre to centre of sleeper no 3 & 4for fixing thick web switch with 220mm stroke point machine. a) 685 mm b) 750 mm c) 710 mm d) 745 mm
936.	The stroke of the universal point machine is. a) 220 mm b) 143 mm c) 132 mm d) 120 mm
937.	The stroke of the point machine used with clamp lock arrangement. a) 143 mm b) 220 mm c) 132 mm d) 120 mm
938.	Point machine to be fixed on between sleeper no. a) 1 & 2 b) 2 & 3 c) 3 & 4 d) 2 & 4
939.	Distance between running face of rail and centre of the point machine is a) 1010 mm b) 1020 mm c) 1030 mm d) 1050 mm
940.	Initial opening of the switch rail at the toe shall be a) 100 mm b) 115 mm c) 118 mm d) 120 mm
941.	The gap between the anti raising bar and bottom of the rail shall be a) 1.5mm to 3mm b) 1.5mm to 2mm c) 1.5mm to 4mm d) 1mm to 1.5mm
942.	For personnel protection equipment chassis & rack body is connected to a) each other b) ground c) not grounded d) ground resistance >10ohms
943.	The size of the bit used for auguring for providing earth rod is a) 4” b) 6” c) 8” d) 10”
944.	A trench made between all rod holes is of size (D X W) a) 24”x12” b) 12”x12” c) 24”x24” d) 12”x24”
945.	The distance between adjacent earth rods shall not be exceeding the driven depth of a) Twice length b) Triple c) quadruple d) single rod

946.	Conductor required from EJB to axle counter evaluator for single section analogue axle counter a) 2 b) 3 c) 4 d) 5
947.	If the distance for EJB to evaluator is more than 2kms additional conduction to be added to each channel a) 2 b) 4 c) 6 d) 8
948.	The double line block system with universal axle counter and multiplexer requires quad cable for the block operation. a) one quad b) one and half quad c) two quads d) 3quads
949.	For SSDAC the maximum length of section is limited to a transmission loss of a) 4db b) 15db c) 20db d) 40db
950.	The type of quad cable for axle counter shall be as re IRS a) TC30 b) TC40 c) TC50 d) TC60
951.	The sleeper spacing at the track devices location fixed on rail clamps should be minimum a) 350 mm b) 450 mm c) 550 mm d) 650 mm
952.	Rails on which track devices are fixed shall be badly warm out beyond for 52kg rails (c) a) 4 mm b) 6 mm c) 8 mm d) 10 mm
953.	The track device of different axle counter system should be separated by a) 1 to 2M b) 2M to 3M c) 3M to 4M d) 3M to 5M
954.	Rails on which track device are fixed shall not be badly worm out beyond for 60 kg rails a) 4 mm b) 6 mm c) 8 mm d) 13 mm
955.	A cable separation between transmitter and receiver. a) 300 m b) 400 m c) 500 m d) 600 m
956.	Rail deflection shall be provided on either ride of transmitter/receiver at a) 30 cms b) 20 cms c) 50 cms d) 60 cms
957.	Signal sighting committee consists of officials a) S&T & Optg b) S&T & electrical c) Optg & electrical d) signal, traffic & mechanical
958.	The height of the normal aspect of a signal from rail level

	a) 3m b) 3.25m c) 3.65m d) 6.05m
959.	Distance between adjacent track centres in straight portion shall be minimum for new line a) 2.36m b) 3m c) 4.72m d) 5.3m
960.	Location of Signal ensuring minimum clearance from immediate adjacent track centre is (b) a) 2.16m b) 2.36m c) 3m d) 4.72m
961.	On Platform Signal post clearance from centre of adjacent track is a) 2.16m b) 2.36m c) 3m d) 4.72m
962.	Normal height of the Contact wire in RE area a) 4.02 m b) 4.58m c) 7.05m d) 5.6m
963.	The normal height of the catenary at its highest point is a) 4.02 m b) 4.58m c) 7.05m d) 5.6m
964.	The distance between the traction mast and Signal post shall not be less than a) 10m b) 20m c) 30m d) 40m
965.	No part of a signal post without route indicator shall normally be higher than rail level a) 3.65m b) 5.2m c) 4.72m d) 4m
966.	Minimum visibility of a inner Distant Signal shall be a) 100m b) 200m c) 300m d) 400m
967.	All Stop Signals shall have minimum visibility of a) 100m b) 200m c) 300m d) 400m
968.	The diameter of the lens of Red/Green/Yellow aspects is a) 92mm b) 127mm c) 140mm d) 213mm
969.	The diameter of the lens of white lens for stop signal is a) 92mm b) 127mm c) 140mm d) 213mm
970.	The diameter of the outer lens of route indicator & direction type indicator is a) 92mm b) 127mm c) 140mm d) 213mm
971.	The diameter of the inner lens of route indicator & direction type indicator is a) 92mm b) 127mm c) 140mm d) 213mm

972.	Point and trap indicator target type having Red/Green/Lunar white is of dia. a) 92 mm b) 101mm c) 127mm d) 213mm
973.	A Signal lamp must be tested for a) 45Hrs. b) 40hrs c) 35hrs d) 30hrs
974.	Length of parallelism permitted in 21 V on double line per Kilo meter is a) 180m b) 220m c) 230m d) 200m
975.	Length of parallelism permitted for 21 V on Single line per Kilo meter is a) 180m b) 220m c) 230m d) 200m
976.	On double line Maximum permissible length of parallelism for internal circuit with QNA1 relay a) 2.1Km b) 1Km c) 1.2Km d) 2.8km
977.	On single line maximum permissible length of parallelism in internal circuit with QNA1 relays a) 2.1Km b) 1Km c) 1.2Km d) 2.8km
978.	On single line maximum permissible length of parallelism in external circuit with K-50 relay a) 0.75 km b) 0.9 km c) 1 km d) 1.2km
979.	Specification for LED signals is RDSO/SPN a) 153/2012 b) 99/2012 c) 164/2002 d) 165/2002
980.	In case of non availability of LED ECR conventional ECR of Siemens metal is a) on metal to metal b) Off metal to metal c) route metal to metal d) shunt metal to metal
981.	In case of non availability of LED ECRs conventional ECR OF CG&H/D hytronics make use in its place a) on metal to carbon b) off metal carbon c) route metal to carbon d) stick metal to carbon
982.	In LED type route indicate signal route ECR shall pick up for no of aspects lit a) 2 b) 3 c) 1 d) 6
983.	The Bond wire used in Track circuited portion of rail joints for through rails is a) 4SWG b) 5SWG c) 6SWG d) 8SWG

984.	Approved battery charger 110v Ac/5-12v DC 5A capacity as per RDSO spec shall be used a) S89/93 b) S65/83 c) S40/84 d) S30/84
985.	Feed end and Relay End Track lead junction Boxes shall be provided from track centre at a distance of a) 2.5 m b) 1.5m c) 2m d) 5m
986.	The size of the conductors used for supply to track circuit in DC track circuit area from the location box is of size a) 2.5 Sqmm b) 25 Sqmm c) 1.5 Sqmm d) 0.6 Sqmm
987.	In track circuited area insulated rail shall be kept clear of ballast by a) 25mm b) 50mm c) 30mm d) 40mm
988.	Indications for Proceed in Three Aspect Signaling Territory a. Yellow b. Green c. Red d. Double Yellow
989.	Indications for Dead Stop in Three Aspect Signaling Territory a. Yellow b. Green c. Red d. Double Yellow
990.	Indications For Caution Aspect in Four Aspect Signaling Territory

	a. Yellow b. Green c. Red d. Double Yellow
991.	Indications for Proceed in Four Aspect Signaling Territory a. Yellow b. Green c. Red d. Double Yellow
992.	Indications for Dead Stop in Four Aspect Signaling Territory a. Yellow b. Green c. Red d. Double Yellow
993.	Attention Aspect means: a. Stop At The Foot Of Signal. b. Pass the Signal at Section Speed. c. Be Prepared To Pass Next Stop Signal At Restricted Speed. d. Be Prepared To Stop At Next Stop Signal.
994.	Proceed Aspect means: a. Stop At The Foot Of Signal. b. Pass the Signal at Section Speed. c. Be Prepared To Pass Next Stop Signal at Restricted Speed. d. Be Prepared To Stop At Next Stop Signal.
995.	In a single distant territory, Distant Signal Showing Yellow Aspect Means a. Train is required to stop at the Home Signal b. Reception on loop line c. Reception on either Main or Loop line d. Run through on Main line
996.	In single distant territory, Distant Signal Showing Double Yellow Aspect Means a. Train is required to stop at the Home Signal b. Reception on loop line c. Reception on either Main or Loop line

	d. Run through on Main line
997.	Distant Signal Showing Green Aspect Means a. Train is required to stop at the Home Signal b. Reception on loop line c. Reception on either Main or Loop line d. Run through on Main line
998.	Distant Signal Showing Red Aspect Means a. Train is required to stop at the Home Signal b. Reception on loop line c. Reception on either Main or Loop line d. Red Aspect Not Available
999.	Inner Distant Signal Showing Yellow Aspect Means a. Train is required to stop at the Home Signal b. Reception on loop line c. Reception on either Main or Loop line d. Run through on Main line
1000.	Inner Distant Signal Showing Double Yellow Aspect Means a. Train is required to stop at the Home Signal b. Reception on loop line c. Reception on either Main or Loop line d. Run through on Main line
1001.	Inner Distant Signal Showing Green Aspect Means a. Train is required to stop at the Home Signal b. Reception on loop line c. Reception on either Main or Loop line d. Run through on Main line
1002.	IB Signal cum Distant Signal Showing Yellow Aspect Means a. Block section ahead is not clear b. Stop at the Home Signal c. Block section ahead is clear, run through on Main line at station ahead d. Stop at M/L or L/L starter or Pass through on Loop line
1003.	IB Signal cum Distant Signal Showing Double Yellow Aspect Means

	a. Block section ahead is not clear b. Stop at the Home Signal c. Block section ahead is clear, run through on Main line at station ahead d. Stop at M/L or L/L starter or Pass through on Loop line
1004.	In a station, different signalling gears are to be operated in a logical sequence for receiving or dispatching of trains for ensuring their ---------- a) Safe running b) Un safe running c) late running d) b and c
1005.	Signals, Points, Lock bars and interlocked level crossing gates etc existing in a station yard are referred as _____ a) Functions b) Interlocking c) Non-interlocking d) a, b and c
1006.	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 a) Functions b) Interlocking c) Non-interlocking d) a, b and c

1	2	3	4	5	6	7	8	9	10
D	A	D	B	D	C	B	A	B	A
11	12	13	14	15	16	17	18	19	20
C	B	B	C	A	A	B	D	D	C
21	22	23	24	25	26	27	28	29	30
B	A	C	C	D	B	B	C	D	A
31	32	33	34	35	36	37	38	39	40
B	B	C	D	D	C	B	B	C	B

41	42	43	44	45	46	47	48	49	50
C	A	B	A	A	D	A	B	B	B
51	52	53	54	55	56	57	58	59	60
A	B	C	B	A	D	C	D	D	B
61	62	63	64	65	66	67	68	69	70
D	C	A	B	D	C	A	B	A	A
71	72	73	74	75	76	77	78	79	80
A	A	A	A	D	C	B	C	C	B
81	82	83	84	85	86	87	88	89	90
D	D	A	A	A	A	A	D	A	B
91	92	93	94	95	96	97	98	99	100
A	A	A	A	B	C	D	A	A	B
101	102	103	104	105	106	107	108	109	110
C	C	B	D	A	D	C	A	B	C
111	112	113	114	115	116	117	118	119	120
A	B	A	B	C	A	B	A	D	B
121	122	123	124	125	126	127	128	129	130
C	C	D	A	B	C	C	A	C	D
131	132	133	134	135	136	137	138	139	140
B	B	A	D	D	B	C	C	C	A
141	142	143	144	145	146	147	148	149	150
A	C	B	B	B	B	A	B	C	C
151	152	153	154	155	156	157	158	159	160
A	A	B	A	A	A	D	D	B	B
161	162	163	164	165	166	167	168	169	170
C	A	A	B	C	C	C	D	D	D
171	172	173	174	175	176	177	178	179	180
D	S	A	D	BV	D	D	B	C	A
181	182	183	184	185	186	187	188	189	190
B	C	B	D	B	D	A	D	A	D
191	192	193	194	195	196	197	198	199	200
D	B	B	C	D	A	B	D	C	B
201	202	203	204	205	206	207	208	209	210
D	B	C	B	D	B	A	A	C	C
211	212	213	214	215	216	217	218	219	220
D	B	C	B	D	B	D	A	A	B
221	222	223	224	225	226	227	228	229	230
A	B	B	C	B	C	A	C	C	A
231	232	233	234	235	236	237	238	239	240
C	B	B	B	D	B	A	B	D	B

241	242	243	244	245	246	247	248	249	250
D	B	A	A	B	A	A	D	D	B
251	252	253	254	255	256	257	258	259	260
D	C	B	B	D	D	A	C	D	D
261	262	263	264	265	266	267	268	269	270
C	B	B	A	D	C	D	A	B	A
271	272	273	274	275	276	277	278	279	280
B	A	B	A	B	D	B	C	B	B
281	282	283	284	285	286	287	288	289	290
C	C	A	D	C	D	A	A	B	C
291	292	293	294	295	296	297	298	299	300
A	A	C	B	A	A	B	C	B	C
301	302	303	304	305	306	307	308	309	310
D	B	D	A	A	B	B	B	C	B
311	312	313	314	315	316	317	318	319	320
A	B	A	C	A	C	B	C	B	A
321	322	323	324	325	326	327	328	329	330
A	A	A	C	A	C	C	C	C	A
331	332	333	334	335	336	337	338	339	340
A	D	B	A	D	D	D	C	A	D
341	342	343	344	345	346	347	348	349	350
A	C	A	D	C	C	D	D	A	C
351	352	353	354	355	356	357	358	359	360
D	B	C	A	C	B	C	B	C	A
361	362	363	364	365	366	367	368	369	370
D	B	C	C	A	D	C	A	A	D
371	372	373	374	375	376	377	378	379	380
D	C	A	D	C	B	D	B	A	C
381	382	383	384	385	386	387	388	389	390
D	B	C	A	B	C	B	A	B	A
391	392	393	394	395	396	397	398	399	400
D	B	A	B	B	A	B	D	A	B
401	402	403	404	405	406	407	408	409	410
C	A	A	A	D	A	D	D	B	A
411	412	413	414	415	416	417	418	419	420
C	B	B	A	C	A	B	A	D	D
421	422	423	424	425	426	427	428	429	430
A	A	B	C	C	C	A	B	D	C
431	432	433	434	435	436	437	438	439	440
A	A	C	B	C	C	A	B	C	C

441	442	443	444	445	446	447	448	449	450
A	B	D	A	D	B	A	A	B	B
451	452	453	454	455	456	457	458	459	460
C	A	B	B	C	B	B	B	C	A
461	462	463	464	465	466	467	468	469	470
C	B	D	D	D	C	A	A	A	B
471	472	473	474	475	476	477	478	479	480
A	B	C	C	A	D	A	B	B	D
481	482	483	484	485	486	487	488	489	490
C	B	A	B	D	B	C	C	A	A
491	492	493	494	495	496	497	498	499	500
C	B	B	C	B	C	B	A	A	B
501	502	503	504	505	506	507	508	509	510
C	A	B	A	A	A	CA	A	A	C
511	512	513	514	515	516	517	518	519	520
B	D	D	D	D	D	A	A	B	D
521	522	523	524	525	526	527	528	529	530
D	C	D	B	A	A	A	A	D	D
531	532	533	534	535	536	537	538	539	540
D	D	B	D	D	A	D	D	D	D
541	542	543	544	545	546	547	548	549	550
D	D	A	D	A	D	A	A	A	B
551	552	553	554	555	556	557	558	559	560
A	D	A	D	D	D	A	D	D	D
561	562	563	564	565	566	567	568	569	570
D	D	D	D	D	A	A	A	A	D
571	572	573	574	575	576	577	578	579	580
A	B	A	D	D	D	A	B	B	C
581	582	583	584	585	586	587	588	589	590
B	C	D	A	A	B	A	C	B	A
591	592	593	594	595	596	597	598	599	600
B	D	B	D	D	A	B	C	B	A
601	602	603	604	605	606	607	608	609	610
A	A	A	C	B	B	B	B	A	B
611	612	613	614	615	616	617	618	619	620
B	B	D	A	B	A	D	B	B	D
621	622	623	624	625	626	627	628	629	630
A	D	B	B	B	A	C	C	V	C
631	632	633	634	635	636	637	638	639	640
C	C	B	B	B	A	A	B	B	C

641	642	643	644	645	646	647	648	649	650
B	A	A	B	A	B	B	A	A	C
651	652	653	654	655	656	657	658	659	660
C	A	B	B	D	D	C	D	D	D
661	662	663	664	665	666	667	668	669	670
D	A	A	B	A	C	A	D	A	C
671	672	673	674	675	676	677	678	679	680
A	B	B	A	C	B	D	A	B	A
681	682	683	684	685	686	687	688	689	690
A	A	D	D	D	C	C	A	A	C
691	692	693	694	695	696	697	698	699	700
A	B	A	A	A	D	C	B	A	a
701	702	703	704	705	706	707	708	709	710
C	B	D	A	C	D	C	A	D	C
711	712	713	714	715	716	717	718	719	720
D	A	B	C	A	A	B	C	C	B
721	722	723	724	725	726	727	728	729	730
A	A	A	A	A	D	D	D	C	C
731	732	733	734	735	736	737	738	739	740
C	A	A	A	A	A	B	B	C	B
741	742	743	744	745	746	747	748	749	750
B	AS	C	C	A	A	C	D	D	A
751	752	753	754	755	756	757	758	759	760
D	B	D	D	A	B	B	A	D	D
761	762	763	764	765	766	767	768	769	770
D	B	B	C	A	B	C	C	D	B
771	772	773	774	775	776	777	778	779	780
D	B	A	C	D	C	A	B	B	A
781	782	783	784	785	786	787	788	789	790
B	D	D	D	B	D	C	C	B	D
791	792	793	794	795	796	797	798	799	800
A	C	A	C	A	C	C	A	C	B
801	802	803	804	805	806	807	808	809	810
A	C	B	D	C	C	B	D	A	B
811	812	813	814	815	816	817	818	819	820
A	D	A	D	C	D	D	D	C	C
821	822	823	824	825	826	827	828	829	830
B	C	B	B	D	D	C	D	A	B
831	832	833	834	835	836	837	838	839	840
A	B	A	C	A	D	B	C	A	D

841	842	843	844	845	846	847	848	849	850
D	C	A	D	A	B	D	C	A	B
851	852	853	854	855	856	857	858	859	860
A	C	B	D	B	A	B	C	D	A
861	862	863	864	865	866	867	868	869	870
D	B	D	B	B	D	C	B	B	B
871	872	873	874	875	876	877	878	879	880
B	C	A	C	A	B	A	B	D	D
881	882	883	884	885	886	887	888	889	890
A	C	B	B	D	B	A	C	A	C
891	892	893	894	895	896	897	898	899	900
B	B	C	A	C	A	D	A	D	A
901	902	903	904	905	906	907	908	909	910
D	D	A	C	B	D	A	D	D	D
911	912	913	914	915	916	917	918	919	920
C	C	C	D	D	B	A	D	A	B
921	922	923	924	925	926	927	928	929	930
D	D	D	D	D	B	A	C	B	D
931	932	933	934	935	936	937	938	939	940
B	C	D	A	D	B	B	C	D	B
941	942	943	944	945	946	947	948	949	950
A	B	C	A	A	C	A	B	C	A
951	4	953	954	955	956	957	958	959	960
C	C	D	D	C	A	D	C	D	B
961	962	963	964	965	966	967	968	969	970
D	D	C	C	B	B	B	C	D	B
971	972	973	974	975	976	977	978	979	980
A	B	A	B	A	D	A	A	A	B
981	982	983	984	985	986	987	988	989	990
A	B	D	A	A	A	B	B	C	A
991	992	993	994	995	996	997	998	999	1000
B	C	B	B	A	C	D	D	C	D
1001	1002	1003	1004	1005	1006				
D	B	D	A	A	B				

ESTABLISHMENT Questions

1. What is LWP
    a) Leave with pay
    b) Leave without pay
    c) Leave with drawl pay
    d) None of the above
2. 7th pay commission was implemented with effect from
    a) 01-01-2016
    b) 01-07-2016
    c) 01-09-2016
    d) None of the above
3. LAP is credited at which rate per month the employee likely to complete service
    a) 3 ½
    b) 4
    c) 2 ½
    d) None of the above
4. Group D staff retired after 20 years of service will get the following sets of passes
    a) 2
    b) 1
    c) 3
    d) NIL
5. Joining time eligible when the distance is below 1000 KM is
    a) 10 days
    b) 12 days
    c) 15 days
    d) NIL
6. What is the % DA admissible to Railway employee at present
    a) 12%
    b) 17%
    c) 11%
    d) 21%
7. Child care leave to lady employees can be granted maximum up to
    a) 24 months
    b) 12 months
    c) 18 months
    d) None of the above
8. EOL means
    a) Eminent Official
    b) Extra Ordinary Leave

c) Earning on Leave
d) None of the above

9. A non-gazetted employees are entitled for how many sets of PTO in a year
    a) 2
    b) 3
    c) 4
    d) None of the above
10. Maximum number of dependents included in the pass are
    a) 3
    b) 2
    c) 4
    d) 6
11. Leave not due during entire service shall be limited to a maximum of
    a) 24 months
    b) 48 months
    c) 360 days
    d) 4 months
12. The first train in India ran between Bombay and Thane on
    a) 1st January 1857
    b) 16th April 1853
    c) 25th August 1855
    d) None of the above
13. Which one is not a penalty under D&A Rule
    a) Censure
    b) Warning
    c) Stoppage of Pass
    d) SF 11
14. Which day is celebrated as Hindi divas
    a) 14th September
    b) 20th April
    c) 2nd December
    d) 14th January
15. SCR formed in the year
    a) 1958
    b) 1966
    c) 1972
    d) 1954
16. Incentive Bonus scheme is applicable to
    a) Workshop staff
    b) HQ staff
    c) Construction staff
    d) None of the above

17. What is the maximum time of leave encashment during service period of employee
    a) 10 times
    b) 6 times
    c) 5 times
    d) None of the above
18. Paternity leave can be granted for how many days
    a) 10
    b) 15
    c) 20
    d) 30
19. Maternity leave can be granted for how many days
    a) 30
    b) 60
    c) 180
    d) 360
20. If an employee remains away from HQ beyond 10 Km on official duty for upto 3 hrs will get TA/DA
    a) 30%
    b) 70%
    c) 100%
    d) None of the above
21. What is the maximum days of LHAP which can be credited to an employee's leave account
    a) 300
    b) 400
    c) No limit
    d) None of the above
22. When husband and wife are posted in same HQ, HRA will be admissible to
    a) Husband only
    b) Wife Only
    c) Both Husband & Wife
    d) Either Husband or Wife
23. Children Education Allowance admissible at present per child is
    a) 25,000
    b) 27,000
    c) 30,000
    d) None of the above
24. In 7th PC Dual charge Allowance is named as
    a) Additional Post Allowance
    b) Extra Duty Allowance
    c) Extra Post Allowance
    d) None of the above
25. A Railway servant shall be deemed to have been placed under suspension if he has been put in police custody for a period

a) Exceeding 24 Hours
b) Exceeding 48 Hours
c) Immediate effect
d) None of the above

26. Review of suspension case is done after
    a) 4 months
    b) 3 months
    c) 2 months
    d) None of the above
27. Which script is used in Hindi language
    a) Arabic
    b) Bhojpur
    c) Devangiri
    d) None of the above
28. In which year Indian constitution declared Hindi as the Official language of the union
    a) 1950
    b) 1948
    c) 1951
    d) None of the above
29. CTG is admissible in case of
    a) Transfer at Own request
    b) Transfer at Administrative interest
    c) Temporary transfer
    d) None of the above
30. NDA in Railway means
    a) No dues attached
    b) Night duty allowance
    c) No duty allowance
    d) None of the above
31. PTO means
    a) Personal Time Off
    b) Post traffic office
    c) Privilege ticket order
    d) None of the above
32. SCL means
    a) Special casual labour
    b) Special casual leave
    c) State contributory leave
    d) None of the above
33. Railway employees at which pay level are entitled for First class privilege pass
    a) Level 3
    b) Level 6

c) Level 5
d) None of the above

34. Which of the following is a running staff
    a) TTE
    b) ALP
    c) Train AC attendant
    d) None of the above
35. What is the maximum number of LAP which can be encased at the time of retirement
    a) 315 Days
    b) 350 Days
    c) 300 Days
    d) None of the above
36. Which of the following advance is not abolished in 7th PC
    a) House Building Advance
    b) Motor car Advance
    c) Scooter / Motor cycle advance
    d) None of the above
37. PRCP can be issued in favor of
    a) Serving employees
    b) Wards of service employees
    c) Retired employees
    d) None of the above
38. One Non-gazetted staff after completion of one year of service will get how many sets of Passes
    a) 2
    b) 1
    c) 3
    d) None of the above
39. What is the latest designation of medical department of Indian Railway
    a) IRHS
    b) IRMS
    c) IRDS
    d) None of the above
40. Which of the standard form is used for issuance of major penalty charge sheet in disciplinary proceeding
    a) SF-11
    b) SF-05
    c) SF-06
    d) None of the above
41. Which of the following is stiff major penalty
    a) Compulsory retirement
    b) Stoppage of increment
    c) Reduction to lower stage

d) None of the above

42. An employee under suspension can be called to appear at a written exam for selection to promotion
    a) May be called to appear during suspension
    b) May be called after suspension is over
    c) To be decided by Disciplinary authority
    d) None of the above
43. During the pendency of a penalty of stoppage of Pass/PTO, whether promotion of a Railway employee will be affected
    a) Promotion will be affected
    b) Promotion will not be affected
    c) Promotion will affect after expiry of punishment
    d) None of the above
44. Whether pension is payable in case of removal/dismissal of a Railway employee
    a) Pension is payable
    b) Pension is not payable
    c) Compassionate allowance can be considered
    d) None of the above
45. Which of the standard form is used for issuance of minor penalty charge sheet in disciplinary proceeding
    a) SF-2
    b) SF-5
    c) SF-11
    d) None of the above
46. If the disciplinary authority of a charged official is also involved in the same case, this case should be dealt by
    a) Disciplinary Authority
    b) Revising Authority
    c) Next higher Authority
    d) None of the above
47. When the Railway employee placed under suspension but only a minor imposed, the treatment of the suspension period is as
    a) Dies non
    b) Non duty
    c) Duty
    d) None of the above
48. Penalty of compulsory retirement, removal or dismissal from service can be imposed only by
    a) Controlling officer
    b) Disciplinary Authority
    c) Appointing Authority
    d) None of the above
49. Railway budget is presented in the parliament by
    a) Finance Minister
    b) Prime Minister

c) Railway Minister

d) Home Minister

50. Total number of CL eligible for field staff

a) 8 days

b) 12 days

c) 10 days

d) 11 days

1	2	3	4	5	6	7	8	9	10
B	A	C	B	A	D	A	B	C	B
11	12	13	14	15	16	17	18	19	20
C	B	B	A	B	A	B	B	C	A
21	22	23	24	25	26	27	28	29	30
C	D	B	A	B	B	C	A	B	B
31	32	33	34	35	36	37	38	39	40
C	B	C	A	C	A	C	B	B	B
41	42	43	44	45	46	47	48	49	50
A	C	B	B	C	C	C	B	C	C

RAJBHASHA QUESTIONS

1	What is the Official Language of Union of India? a) Hindi b) English c) Sanskrit d) Urdu
2	On which date Part XVII of the Constitution was passed in Parliament? a) 14.09.1949 b) 10.01.1950 c) 02.10.1955 d) 01.01.1956
3	When was Official Language Act 1963 passed? a) 01.01.1961 b) 02.10.1965 c) 10.05.1963 d) 01.05.1964
4	When was Official Language Act 1963 amended ? a) 1965 b) 1966 c) 1969 d) 1967
5	When is "Hindi Day" celebrated every year? a) September 14th b) October 19th c) October 2nd (d) January 26th
6	According to Official Language Rules, under which region Andaman & Nicobar Islands come ? a) Region B b) Region A c) Region C d) All
7	From when did the Sec 3(3) of Official Languages Act take effect ? a) 01.01.1951 b) 01.10.1956 c) 01.05.1961 d) 26.01.1965
8	How many inspections in a month are mandatory for Rajbhasha Adhikari of Railways? a) 01 b) 02 c) 03 (d) 04
9	In which article is the provision regarding OL policy available in Part V of the constitution? a) Article 220 b) Article 240 c) Article 320 d) Article 120
10	When was the Official Language Rules passed ? a) 1966 b) 1971 c) 1976 d) 1977
11	How many articles are there in Part XVII of the Constitution ? a) 9 b) 12 c) 11 d) 10
12	In compliance of article 344 when was the Official Language Commission formed ? a) 1956 b) 1955 c) 1954 d) 1950
13	As per the Constitution, who is translating the statutory rules, regulations and orders? a) Home Ministry b) Finance Ministry c) Law Ministry d) Foreign Affairs Ministry
14	Which Official Language mentions about the Working knowledge of the Officer/Employee ?

	a) Rule-10 of Official Language Rule 1976 b) Rule-15 of Official Language Rule 1976 c) Rule 21 of Official Language Rule 1976 d) Rule 11 of Official Language Rule 1976
15	In which year Hindi (Parliament) section was established in Railway Board a) 1961 b) 1960 c) 1964 d) 1965
16	Which is the elementary Hindi course prescribed for Central Govt. employee a) Praveen b) Prabodh c) Pragya c) None of the above
17	Who is the Chairman of Central Hindi Committee ? a) President b) Prime Minister c) Finance Minister d) Defence Minister
18	When was the present Parliamentary Committee on Official Language constituted ? a) January, 1956 b) March, 1960 c) January, 1976 b) March, 1976
19	How many members are there in the Committee of Parliamentary on Official Language? a) 30 b) 40 c) 50 d) 20
20	How many Lok Sabha members will be there in the Committee of Parliamentary on Official Language ? a) 20 b) 30 c) 25 d) 35
21	What is the periodicity of the meetings of Town Official Language Implementation committee ? a) One in 6 months b) Once in 3 months c) One in 2 months d) Once in a month
22	What is the periodicity of the meeting of Town Official Language Implementation Committee ? a) One in 6 months b) Once in 3 months c) One in 2 months d) Once in a month
23	Who prepares the Annual Programme on Official Language ? a) Ministry of Home Affairs b) Finance Ministry c) Law Ministry d) Foreign Affairs Ministry
24	How many times the Regular Hindi exams are conducted in a year ? a) 3 times b) Two times c) Four times d) Once in a year
25	In which months Regular Hindi examinations are conducted? a) May and November b) April and November b) March and October d) June and January

26	What is the Lumpsum Award for passing Pragya ? a) Rs.2500/- b) Rs.2600/- c) Rs.2400/- d) Rs.2000/-
27	How many first prizes are given in a year for writing more than 10,000 words in one unit under Home Ministry's Award Scheme? a) Four b) Three c) One d) Two
28	What is the lumpsum award for passing Hindi Typewriting Examination by private study ? a) Rs.1600/- b) Rs.1700/- c) Rs.1800/- d) Rs.1500/-
29	Who is the Chairman of the Divisional Official Language Implementation Committee? a) DRM b) ADRM c) RBA d) GM/SCR
30	What is the amount of Honorarium given to the OLIC Clerks ? a) Rs.500/- b) Rs.600/- c) Rs.700/- d) Rs.800/-
31	What is the duration for Hindi Conversation course? a) 20 hrs. b) 25 hrs. c) 30 hrs. d) 35 hrs.
32	What is the amount of Cash Award for passing Hindi typing with 88% or more but less than 92% or marks ? a) Rs.1000 b) Rs.800 c) Rs.900 d) Rs.1050
33	What is the monthly honorarium given to Part-time Hindi Librarian ? a) Rs.1500 b) Rs.1000 c) Rs.1200 d) Rs.1300
34	What is the Lumpsum award given for passing Hindi Stenography Examination? a) Rs.3000 b) Rs.2500 c) Rs.2000 d) Rs.2800
35	How many Cash Awards are provided under Rail Yatra Vrittant a) One b) Two c) Three d) Four
36	Mention the name of the Award to be given for writing story/novel writing in Hindi by Railway Board. a) Premchand Award b) Lal Bahaddur Sastry Award c) Sharan Gupt Award d) None of the above
37	The Official Language Rules 1976, is applicable on entire countries except one State? Which is that State? a) Andhra Pradesh b) Uttar Pradesh c) Kerala d) Tamil Nadu
38	What is the amount of Cash Award given to the Stenographers work of 5 letters/Notings per day or 300 letters/drafts/Notings per quarter in Hindi in addition to the English work under Stenography Awards Scheme? a) Rs.240/- every month b) Rs.300/- every month c) Rs.400/- every month d) Rs.280/- every month

1	2	3	4	5	6	7	8	9	10
A	A	C	D	A	B	D	A	D	C
11	12	13	14	15	16	17	18	19	20
A	B	C	A	B	B	B	C	D	A
21	22	23	24	25	26	27	28	29	30
B	A	A	B	A	C	D	D	A	B
31	32	33	34	35	36	37	38		
C	B	B	A	C	A	D	A		

दक्षिण मध्य रेलवे
SOUTH CENTRAL RAILWAY
Office of the Senior Divisional Signal & Telecom Engineer
DRM OFFICE COMPOUND GUNTAKAL – 515801.

No.G/SG/ 212/1 Date: 18.09.2025

PCSTE/SC

Sub: Submission of MCQ Bank for Technician Grade-III (Tele Panel) under LDCE Quota-regd

Ref:- 1) PCSTE/SC/SCR Lr No.SCR-HQ0SNT(ESTB)/2/2021 (e-156622) dated 26.08.25.
2) PCPO/SC's Lr No.SCR-P-HQ/226/SEL/2025) dated :15.07.25,30.7.25&06.08.25

******

The Multiple Choice Question (MCQ) Bank prepared for the selection to the post of **Technician Grade-III (Tele Panel)** under the **LDCE Quota** is enclosed herewith for your kind information and necessary action.

BANDLA LAKSHMAN Digitally signed by BANDLA LAKSHMAN Date: 2025.09.18 20:03:21 +05'30'

(B.LAKSHMAN)
Dy.CSTE/CN/GTL

BOMMA CHANDRA SHEKHAR BOMMA CHANDRA SHEKHAR 2025.09.18 19:40:04 +05'30'

(B.CHANDRA SHEKHAR)
Sr. DSTE/M/GTL

Enclosed
Multiple Choice Question (MCQ's) Bank

INDEX

SLNO	TOPIC & SYLLABUS	No. of Questions	Pg No.
1	**Telephone Instruments-** Introduction, exchange signaling, outdoor cables, telephones, working principles, exchanges.	49	3-7
2	**Measuring Instruments-** Introduction, Types of measuring instruments, Instruments calibration	29	8-11
3	**Power Plant-** Different types of batteries, Lead acid cell construction, SMF & VRLA batteries, charging methods and SOLAR	50	12-16
4	**Disaster Management-** Introduction, materials in ART /MRV, communication providing at Accident site, Types of Disasters, ART/MRV periodical testing	20	17-18
5	**Telecom Cables-** Types of cables, cables characteristics, PIJF cable construction, QUAD cable construction, periodical testing, Types of tests, cable lying methods, cable jointing, Meters used for cable testing	100	18-27
6	**Data Communications-** Introduction, Data flow, OSI models, Data Protocols, Network devices, IP classification & Subnet mask	90	28-37
7	**LTE & Kavach-** Introduction about LTE, LTE architecture, LTE Transmission, LTE Equipment, Introduction about KAVACH, KAVACH architecture, RF planning, NMS-LTE.	69	38-45
8	**Passenger Amenities-** PA system, IPIS (Integrated Passenger Information System) GPS clock, CCTV, IVRS.	100	46-54

9	**Electronic and IP Exchanges- Introduction, Types of Transmission, Features, Type of Exchanges.**	**80**	**55-61**
10	**Lightening, Surges & Earthing- Introduction about Lightening, Introduction about Surges, Type of Earthing, Classification of lightening protection.**	**35**	**62-65**
11	**Train Traffic Control- Control Communication, DTMF Head Quarters and Way station equipment, VOIP Control communication, Voice logger, Electronic LC Gate phones, DTMF Selective Calling Telephones, DTMF decoder and encoder, Smart voice logger**	**50**	**66-70**
12	**PDH- Multiplexing, PCM techniques, Types of MUX (WEBFIL, PUNCOM)**	**40**	**71-74**
13	**Emergency Communication- Emergency Control Communication (VHF sets, Walkie-Talkies, INMARSAT, VSAT, FCT)**	**30**	**75-77**
14	**IP based Video Surveillance System- Introduction, cameras connectivity, Cabling, Equipment and Types of Cameras**	**30**	**78-80**
15	**Optical Fiber Communication- Introduction, silent features of OFC transmission, Types of OFC cable, OFC cable Construction, Splicing methods, OFC Connectivity.**	**70**	**81-87**
TOTAL		**842**	

TELEPHONE INSTRUMENTS

1. In telephony, transmission of speech current on copper cable is termed as ( )
   a) Line telephony b) Impedance matched telephony
   c) Wired telephony d) None

2. The basic requirement of a telephone is transmitter, receiver and ( )
   a) Signaling b) Switching
   c) Controlling d) None

3. Copper wires are used in telephony due to ( )
   a) Low cost b) Easily available
   c) Less attenuation & distortion d) Good resale value

4. A good transmission line has ( )
   a) Low insulation resistance b) Less current carrying capacity
   c) Small conductor diameter d) None of the above

5. Main distribution frame is ( )
   a) Connecting exchange output to field cable b) Testing place for line parameters
   c) Providing protective devices d) All the above

6. Card frame is meant for ( )
   a) Housing the cards b) Protection devices
   c) Connecting only control cards d) None of the above

7. Power supply panel is responsible for ( )
   a) Power supply to peripheral cards b) Power supply to control cards
   c) Ringing power supply d) Both a & b

8. Two subscribers connected in the same exchange is called ( )
   a) Trunk switching b) Group switching
   c) Local switching d) None

9. SPC stands for ( )
   a) Stored program control b) Strong program control
   c) Storage program control d) Simple program control

10. Loop signaling is extended from ( )
   a) Subscriber → Subscriber b) Exchange → Subscriber
   c) Subscriber → Exchange d) Exchange → Exchange

11. Push button telephone means ( )

a) Dial pad for dialing digits b) Push button to disconnect line

c) Button to start phone d) Special privilege phone

12. A phone type connected between boss and secretary is ( )

a) Main & extension type b) One phone shared

c) Ordinary pair of two phones d) None

13. CLIP stands for ( )

a) Caller line identity permission b) Call incoming line permitted

c) Caller line identity presentation d) Caller inbound line promise

14. Cordless phone works on ( )

a) Radio transmission b) Both a & c

c) Ordinary pair of two phones d) None

15. In on-hook condition, line is ( )

a) Connected to ringer circuit b) Totally disconnected

c) Connected to dialer circuit d) None

16. In off-hook condition, line is connected to ( )

a) Dialer circuit b) Amplifier circuit

c) Ringer circuit d) None

17. DTMF stands for ( )

a) Double tone multiplexed frequency b) Dual tone multiple frequencies

c) Dual tone multi frequency d) Dual tone mixed frequencies

18. Dial lock means ( )

a) No dialing allowed b) Only incoming allowed

c) Digits cannot be dialed d) No incoming & outgoing

19. IP phones are connected on ( )

a) Internet LAN switch b) Direct to exchange

c) Copper pair to exchange d) None

20. IP phones are often called ( )

a) SIP phones b) Digital phones

c) Plus feature phones d) Caller ID phones

21. A transmitter converts sound energy into ( )

a) Light energy b) Electrical energy

c) Mechanical energy d) None

22. A receiver converts electrical energy into ( )

a) Light energy b) Sound energy

c) Mechanical energy d) None

23. In magneto telephone, most commonly used ringing device is ( )

a) Piezo buzzer b) AC Bell

c) DC Bell d) None

24. In all telephone instruments (except magneto), ringing device is ( )

a) Piezo buzzer b) AC Bell

c) DC Bell d) None

25. Maximum subscribers possible in magneto telephone is ( )

a) 1 b) 2

c) 4 d) Any number

26. Maximum subscribers possible in selective calling telephone is ( )

a) 10 b) 11

c) 12 d) 14

27. The working voltage of selective calling telephone is ( )

a) 12 V DC b) 24 V DC

c) 48 V DC d) 6 V DC

28. The min & max voltage for selective calling telephone is ( )

a) 10–14 V DC b) 10.8–14.4 V DC

c) 12.5–16.5 V DC d) 8.5–12.5 V DC

29. The ideal current in selective calling telephone is ( )

a) 20 mA b) 40 mA

c) 60 mA d) 80 mA

30. The ringing & speech current in selective calling telephone is ( )

a) 20–40 mA b) 40–60 mA

c) 15–30 mA d) 60–80 mA

31. If buzzer fails in selective calling telephone, fault is ( )

a) No ring b) No speech

c) No ring & no speech d) None

32. If 12 V power fails in selective calling telephone, fault is ( )

a) No ring b) Telephone dead

c) No speech d) None

33. If transmitter fails, fault is ( )

a) No incoming speech b) No outgoing speech

c) No ringing d) None

34. If receiver fails, fault is ( )

a) No incoming speech b) No outgoing speech

c) No ringing d) None

35. EPBT stands for ( )

a) Electronic polarity button telephone b) Electronic push button telephone

c) Electronic popup button telephone d) None

36. Working voltage of EPBT is ( )

a) –24 V DC b) –48 V DC

c) +48 V DC d) +12 V DC

37. EPBT telephone gets feed from ( )

a) STM b) Exchange

c) Raw supply d) None

38. In EPBT cradle off condition, current is ( )

a) 0 mA b) 10 mA

c) 15 mA d) 20 mA

39. In EPBT cradle on condition, current is ( )

a) 20 mA b) 30 mA

c) 40 mA d) 60 mA

40. Ringer IC used in GCEL-501 set is 8-pin IC no ( )

a) LS1240 b) LS1260

c) LS1562 d) RS5263

41. To supply proper polarity, circuit across line is ( )

a) MOV b) Bridge rectifier

c) Zener diode d) Fuse

42. Make & receive VoIP calls from PC/iPhone/Android are called ( )

a) Soft phone b) DKT phone

c) EPBT phone d) None

43. A two-line telephone with base unit & handset is ( )

a) Hands-free b) Cordless

c) Cellular d) None

44. 01 row & 01 column frequency is selected for pressing digit on EPBT ( )

a) 1 digit b) 2 digits

c) 3 digits d) 4 digits

45. Two subscribers of different exchanges are connected through ( )

a) Local exchange b) Transit exchange

c) Trunk exchange d) None

46. At MDF, primary protection is provided by ( )

a) SPD b) MOVR

c) IPM d) None

47. Place where outdoor & indoor cables terminate is ( )

a) MDF b) IDF

c) DDF d) None

48. VOIP means ( )

a) Voice over Internet Protocol b) Voice over Internet Phone

c) Voice operated instant phone d) None

49. IP phone is used for ( )

a) Voice b) Data

c) Video d) All

ANSWER KEY:-

1	2	3	4	5	6	7	8	9	10
a	**a**	**c**	**a**	**d**	**a**	**d**	**c**	**a**	**c**
11	12	13	14	15	16	17	18	19	20
a	**a**	**c**	**a**	**a**	**a**	**c**	**c**	**a**	**a**
21	22	23	24	25	26	27	28	29	30
b	**b**	**b**	**a**	**c**	**b**	**a**	**b**	**a**	**b**
31	32	33	34	35	36	37	38	39	40
a	**b**	**b**	**a**	**b**	**b**	**b**	**a**	**b**	**a**
41	42	43	44	45	46	47	48	49	50
b	**a**	**b**	**a**	**c**	**c**	**a**	**a**	**d**	

MEASURING INSTRUMENTS

1. In a measurement system the transducer is the ( )

   a) Input element b) Processing device

   c) Signal conditioning device d) Output element

2. The basic principle of a D'Arsonval instrument is the same as that of a ( )

   a) Moving Iron instrument b) Induction instrument

   c) Repulsion instrument d) Moving coil instrument

3. The internal resistance of an ammeter must be very low for ( )

   a) High sensitivity b) Maximum voltage drop across the meter

   c) Minimum effect on the current in the circuit

4. Which of the following meter has a linear scale ( )

   a) Thermocouple b) Moving Iron

   c) Hot wire meter d) PMMC

5. A measure of the reproducibility of the measurement is known as ( )

   a) Accuracy b) Fidelity

   c) Precision d) Resolution

6. A digital volt meter has 3 and ½ digit display, the one volt range can be read upto ( )

   a) 999 b) 9.99

   c) 1.999 d) 0.1999

7. In the PMMC instrument's Torque equation equal to BANI, I stands for ( )

   a) Cross section area b) Current

   c) Magnetic field intensity d) Turns

8. If the voltmeter resistance is increased, the error in the reading given by the voltmeter ( )

   a) Increase b) Decrease

   c) Be independent of voltmeter resistance d) Increase or decrease depending upon value

9. An instrument has a sensitivity of 1000 ohms per volt. On 100 volt scale the instrument ( )
   will have internal resistance of

   a) 10 ohms b) 10,000 ohms

   c) 1000 ohms d) 1 Mega ohms

10. A voltmeter using a 50 micro ampere meter has a sensitivity of ( )

a) 20 Kilo ohms per volt b) 50 Kilo ohms per volt

c) 2000 ohms per volt d) 20 Mega ohms per volt

11. The basic A to D converter used in a digital volt meter is ( )

a) Phase converter b) Current converter

c) Voltage to time converter d) Frequency converter

12. The error of an instrument is normally given as a percentage of ( )

a) Measured value b) Mean value

c) Full scale value d) RMS value

13. Measurement cycle performed by A/D converters ( )

a) Auto Zero b) Integrate

c) Read d) All of the above

14. The unit of absolute power in logarithmic value of an electrical signal is ( )

a) dBm b) dBr

c) dB d) dBrnc

15. The power output of an amplifier is +30 dBm, if the power output is made double, the value of the output power ( )

a) +33 dBm b) +27 dBm

c) +60 dBm d) -30 dBm

16. If the power input of an amplifier is 1 nW and the gain of the amplifier +60 dB, the output power of amplifier ( )

a) +33 dBm b) +27 dBm

c) +60 dBm d) 0 dBm

17. The Return Loss of a line is the ratio of the power reflected back from the line to the power transmitted into the line. This is due to – ( )

a) Impedance mismatch between source & cable b) Impedance mismatch between & load

c) Impedance mismatch among source & load d) Impedance mismatch at joints

18. Bridge megger is used for ( )

a) Identification of low insulation fault in the cable b) Finding loop resistance of cable pair c) Contact faults within the cable pairs d) All of the above

19. AC voltage is required for earth testing because of _____ nature of earth. ( )

a) Resistive b) Electrolytic

c) Capacitive d) Inductive

20. Psophometric voltage is a ___measurement of noise present on a transmission line across a telephone in milli volts. ( )

a) Logarithmic b) Linear

c) Indirect d) Reverse

21. The deflection in Megger meter is determined by the _of current in Current and Potential coils. ( )

a) Addition b) Product

c) Ratio d) Reverse

22. Visual fault locator allows __identification of fiber cable faults as breaks, micro or macro bending. ( )

a) Detailed b) Differed

c) Instant d) Delayed

23. VFL uses a bright ___ colour light beam of 650 nm or 635 nm to inject into the fiber that allows to see a break as a glowing or blinking light. ( )

a) Yellow b) UV

c) Red d) Blue

24. OTDR can be characterized similar to optical _____. ( )

a) Radar b) Sonar

c) Detector d) Amplifier

25. ___reflection is tens of thousands of times greater in power level than the backscatter. ( )

a) Internal b) Fresnel

c) Total d) External

26. Pulse width is the width of the optical pulse from the OTDR that is ___ in a time frame. ( )

a) Scattered b) Refracted

c) Reflected d) Generated

27. Optical Light Source provides with an inbuilt optical attenuator, to vary the attenuation of the output level typically _____ in 0.1 steps. ( )

a) -3 to -6 db
b) 0 db
c) 0–6 db
d) 6–10 db

28. Which pulse width do I use to troubleshoot a long fiber run on an OTDR ( )
a) Longest
b) Unchanged
c) Medium
d) Shortest

29. Device used to test a fiber optics splice loss is ( )
a) Spectrum analyzer
b) Oscilloscope
c) Optical power meter
d) Field strength

ANSWER KEY: -

1	2	3	4	5	6	7	8	9	10
a	**D**	**c**	**d**	**c**	**c**	**c**	**b**	**d**	**a**
11	12	13	14	15	16	17	18	19	20
c	**C**	**d**	**a**	**a**	**d**	**d**	**d**	**b**	**b**
21	22	23	24	25	26	27	28	29	30
c	**C**	**c**	**a**	**b**	**c**	**c**	**d**	**c**	

POWER PLANT

1. Function of separators in Lead acid cell is to prevent _____. ( )
   a) Over charging b) Short-circuit
   c) Deep discharge d) Plate damage
2. Capacity of any Lead Acid cell is given in _____. ( )
   a) Ampere Hours b) Amperes
   c) Hours d) Voltage hours
3. While charging LA cell, the condition of gassing indicates that the cell is ____ ( )
   a) Partially discharged b) Fully discharged
   c) Partially charged d) Fully charged
4. Active material on positive plates of a Lead Acid cell is_____ ( )
   a) Lead peroxide b) Lead dioxide
   c) Lead sulphate d) Lead
5. _____ is an instrument used to measure the Specific gravity of electrolyte ( )
   a) Thermometer b) Specific gravity meter
   c) Mass flow meter d) Hydrometer
6. The material used for grids in maintenance free Lead Acid battery is_____. ( )
   a) Lead Calcium alloy b) Lead Peroxide alloy
   c) Lead Sulphate alloy d) Lead Zinc alloy
7. High rate of charging or discharging leads to problem of ____ in LA acid cell. ( )
   a) Sulphation b) Loss of capacity
   c) High density of electrolyte d) Buckling
8. AGM, in VRLA batteries, means _____. ( )
   a) Absorbed Gas Mat b) Associated Glass Mat
   c) Absorbed Glass Mat d) Associated Gas Mat
9. The VRLA / SMF-LA batteries shall be charged with _____ voltage. ( )
   a) Constant Voltage unregulated b) Constant Voltage regulated
   c) Constant Voltage d) Regulated Voltage
10. To avoid lead corrosion on battery connectors and terminals ___has to be applied. ( )
    a) Petroleum jelly b) Leaded grease
    c) Diesel d) SAE-2T oil
11. Internal short circuit in a cell is indicated by _____. ( )
    a) Gassing from cell b) High specific gravity
    c) Warm when touched d) Sulphation

12. Lead Acid cell can be discharged up to voltage of _____. ( )

a) 1.70 b) 1.80

c) 1.85 d) 1.90

13. In VRLA cell/battery the compensation of distilled water is by _____. ( )

a) Recombination principle b) Adding distilled water

c) Adding acid d) Boost charge

14. Leaving the LA battery in a discharged condition causes_____. ( )

a) Internal short b) Sulphation

c) Loss of electrolyte d) Shedding

15. Voltage of a fully charged rechargeable Alkaline cell is _____ ( )

a) 2.1 b) 1.5

c) 1.0 d) 1.2

16. 16) The electrolyte used in case of Alkaline cell is _____. ( )

a) KOH b) H_2SO_4

c) MnO_2 d) Zn

17. The float charging voltage of a VRLA cell is_____ ( )

a) 2.10 b) 2.15

c) 2.25 d) 2.30

18. If battery operating temperature increases, the capacity of battery _____. ( )

a) Increases b) Decreases

c) Remains same d) Both (a) & (b)

19. K-factor in LA cells indicates_____. ( )

a) Cell capacity vs load b) Capacity vs temp

c) Capacity vs discharge rate & end voltages d) Capacity vs charge rate

20. Temperature correction in LA batteries is not required at _____°C. ( )

a) 0 b) 15

c) 20 d) 27

21. EPV of an Alkaline cell is_____. ( )

a) 1.0 b) 1.2

c) 1.8 d) 2.0

22. Recommended charging for Alkaline cells is _____. ( )

a) Constant current & regulated voltage b) Regulated V & I

c) Constant current & constant voltage d) Regulated current & constant voltage

23. Gravimetric Energy density is high in _____ rechargeable batteries. ( )

a) Li-ion b) Li-poly

c) Ni-MH d) VRLA

24. Maximum allowable depth of discharge of battery is_____. ( )

a) 50% b) 60%

c) 70% d) 80%

25. Rate of Trickle charging is _____ ( )

a) 1 mA/AH b) 10 mA/AH

c) 100 mA/AH d) 1 A/AH

26. Codal life of re-chargeable batteries in S&T dept is _____ months ( )

a) 24 b) 36

c) 48 d) 60

27. Max temperature during charging of LA battery shall not exceed _____ °C. ( )

a) 27 b) 30

c) 40 d) 50

28. Inverter unit converts _____ ( )

a) DC–DC b) AC–DC

c) DC–AC d) AC–AC

29. Boost Charging Voltage of conventional LA battery is_____. ( )

a) 2.2 b) 2.3

c) 2.4 d) 2.5

30. Ratio of acid to distilled water in conventional LA battery is ( )

a) 1:2 b) 1:3

c) 1:4 d) 1:5

31. Charging current is limited to _____% of capacity in constant potential charging ( )

a) 1 b) 2

c) 3 d) 40

32. Charging voltage of VRLA/SMF battery is_____. ( )

a) 2.1 b) 2.2

c) 2.3 d) 2.5

33. Initial charging of LA cells, voltage per cell shall be set to_____. ( )

a) 2.3 b) 2.4

c) 2.6 d) 2.7

34. If manufacturer not defined, charging current = _____. ( )

a) AH/5 b) AH/10

c) AH/15 d) AH/20

35. Unit of Capacity of a cell_____ ( )

a) AH b) A

c) H d) HA

36. In C/10 discharge rate, 10 indicates_____ ( )

a) Volts b) Amps

c) Hours d) Constant

37. In Automatic Battery charger the output controlling device is_____. ( )

a) BJT b) IGBT

c) UJT d) SCR

38. In Automatic battery charger the gate pulses for SCR's is generated by ___ ( )

a) Transformer b) Control circuit

c) SCR d) UJT

39. Efficiency of Linear type charger is ___ SMPS charger ( )

a) Same b) Higher

c) Less d) Equal

40. In SMPS charger, isolation from AC mains is_____ ( )

a) Very high b) Very low

c) Equal d) Partial

41. Output side of charger, _____ is introduced to reduce current change ( )

a) Load b) Ballast resistor

c) Battery d) Capacitor

42. MOV is a _____ ( )

a) Capacitor b) Reverse Voltage protection

c) Fuse d) Surge suppressor

43. Spec of 48VDC auto/manual battery charger is _____ ( )

a) IRS.TC.72/97 b) IRS.TC.86/2000

c) IRS.S.86/2000 d) RDSO/SPN/TL/23/99

44. Float voltage range in 48V DC charger is ___ V/Cell. ( )

a) 2.0–2.3 b) 1.8–2.3

c) 2.0–2.5 d) 1.8–2.5

45. In a 48V DC charger, N+1 indicates_____. ( )

a) No. of SMRs b) No. of cells

c) No. of banks d) No. of loads

46. Auto changeover float ↔ boost occurs by sensing _____ ( )

a) Load voltage b) Load current

c) Battery voltage d) Battery current

47. Power plants with modular expansion are_____ ( )

a) Thyristor controlled b) Ferro-resonant

c) Linear d) SMPS

48. Solar panel used at LC gate has _____ voltage ( )

a) 24V DC b) 48V DC

c) 12V DC d) 18V DC

49. Charging method used for new LA cells is __ ( )

a) Initial charging b) Boost charging

c) Triple charging d) Float charging

50. Zener diode is used as _____ regulator ( )

a) Current b) Voltage

c) Power d) emf

ANSWER KEY:-

1	2	3	4	5	6	7	8	9	10
b	A	d	a	D	a	d	c	b	a
11	12	13	14	15	16	17	18	19	20
c	C	a	b	D	a	b	b	c	d
21	22	23	24	25	26	27	28	29	30
a	C	b	d	A	c	d	c	c	b
31	32	33	34	35	36	37	38	39	40
b	C	d	c	A	c	d	b	c	a
41	42	43	44	45	46	47	48	49	50
b	D	b	a	A	c	d	d	a	b

DISASTER MANAGEMENT

1) Disaster is a sudden, calamitous event bringing great damage, _____to life and property. ( )
   a) Loss b) Destruction
   c) Devastation d) All

2) A disaster is a situation in which the community is _____ of coping up. ( )
   a) Incapable b) Ability
   c) Capable d) None

3) _____ Types of disasters come under Major natural. ( )
   a) Floods b) Earthquake
   c) Cyclone d) All

4) _____ Types of disasters come under Major manmade. ( )
   a) War b) Chemical pollution
   c) Setting of fire d) All

5) In Railways, disaster is defined as a major train accident leading to ____for a long period. ( )
   a) Heavy causalities & disruption to traffic b) Loss of railway employee
   c) Loss due to miscreant d) None

6) Collision involving a train carrying passengers comes under which class? ( )
   a) A-2 b) A-3
   c) A-1 d) A-4

7) Fire or Explosion in a train carrying passengers comes under which class? ( )
   a) B-1 b) B-2
   c) B-3 d) B-4

8) Trains NOT carrying passengers running into road traffic comes under which class ( )
   a) C-3 b) C-2
   c) C-1 d) C-4

9) As per Railway Board, who has authority to declare an incident as railway disaster? ( )
   a) GMs b) AGMs
   c) CSOs (when GM/AGM not available) d) All

10) Measures put in place to minimize the results from a disaster. ( )
   a) Mitigation b) Preparedness
   c) Response d) All

11) Communication network is provided at derailment site by ( )
   a) S&T department b) Operating department
   c) Security department d) Engineering department

12) PT set available on trains carrying goods with ( )
   a) Both b) Brake van
   c) Locomotive d) None

13) Walkie Talkie sets available with ( )

a) Driver of train b) Guard of train

c) Both d) None

14) Target time for turning out of ARMV in day from hooter sounding is ( )

a) 15 min b) 25 min

c) 30 min d) 45 min

15) Target time for turning out of ARMV in night from hooter sounding is ( )

a) 15 min b) 25 min

c) 30 min d) 45 min

16) Target time for turning out of ART in day from siren sounding is ( )

a) 15 min b) 25 min

c) 30 min d) 45 min

17) Target time for turning out of ART in night from siren sounding is ( )

a) 15 min b) 25 min

c) 30 min d) 45 min

18) ART equipment are to be periodically tested by nominated staff ( )

a) Once in 15 days b) Once in a month

c) Once in 3 months d) None

19) ART equipment are to be periodically inspected by ASTE/DSTE ( )

a) Once in 15 days b) Once in a month

c) Once in 3 months d) None

20) Every ART shall have nominated telecom staff; in-charge shall generally be ( )

a) SSE b) JE

c) Anyone in charge d) Both

ANSWER KEY:-

1	2	3	4	5	6	7	8	9	10
a	**a**	**d**	**d**	**a**	**c**	**a**	**b**	**d**	**a**
11	12	13	14	15	16	17	18	19	20
a	**c**	**c**	**a**	**b**	**c**	**d**	**a**	**c**	**c**

TELECOM CABLES

1) Purpose of loading in an underground telecom cable ( )

a) To reduce transmission loss b) To decrease cross talk

c) To reduce noise d) To increase attenuation

2) Length of loading section for 6-quad cable ( )

a) 2000 m b) 1830 m

c) 2500 m d) 1900 m

3) Maximum capacitance unbalance permitted in a loading section ( )

a) 30 pF b) 20 pF

c) 40 pF d) 10 pF

4) Unbalance in capacitive couplings of quad cable causes ( )

a) Noise b) Attenuation

c) Cross talk d) Distortion

5) Unbalance of Earth couplings in VF circuits causes ( )

a) Noise b) Cross talk

c) Attenuation d) Distortion

6) Capacitance unbalance between side circuit 2 of quad 1 w.r.t side circuit 1 of quad 1 ( )

a) K9 b) K10

c) K11 d) K12

7) Overhead lines not fit for telecom circuits in RE area due to _____ ( )

a) Conductors have no insulation b) Interference from 25 kV induced voltage

c) Conductors are thick d) High cross talk

8) Purpose of twisted pair in telecom cables ( )

a) To reduce cross talk b) To give strength

c) Ease in manufacturing d) To avoid signal loss

9) Distance at which condenser joint is done in 6-quad cable loading section ( )

a) 915 m b) 1000 m

c) 1200 m d) 1220 m

10) Telecom switch board cables are used for ( )

a) Outdoor telecom wiring b) Indoor telecom wiring

c) Electrical switch board wiring d) Underground telecom wiring

11) Characteristic impedance of switch board cable ( )

a) 500 Ω b) 600 Ω

c) 470 Ω d) 1120 Ω

12) Purpose of rip cord in switch board cable ( )

a) Facilitate removal of PVC sheath b) Remove insulation of conductor

c) Route cable through pipes d) Uncoil the cable

13) Expand UTP cable ( )

a) Unscreened twisted pair b) Unused twisted pair

c) Unusual twisted pair d) Unshielded twisted pair

14) CAT cables are connected with _____ type of connectors ( )

a) RJ 15 b) RJ 45

c) RJ 11 d) RJ 9

15) In STP cables, _____ is used as screen . ( )

a) Aluminium foil b) Aluminium wires

c) Aluminium sheath d) Copper sheath

16) Co-axial cable's usual impedance shall be _____ or _____ Ohms . ( )

a) 40-60 or 70-90 b) 40-60 or 70-100

c) 40-50 or 70-80 d) 20-40 or 30-40

17) RG 8 cable can be used up to the length of ( )

a) 600 m b) 800 m

c) 400 m d) 500 m

18) Material used for conductor in telecom cables is high conductivity ____ ( )

a) Insulated copper b) Annealed copper

c) Silver coated copper d) Aluminium coated copper

19) Colour code of 37th pair in 50 pair switch board cable ( )

a) Orange & red b) Blue & red

c) Green & red d) Slate & white

20) Specification of Switch Board cable ( )

a) IS 434-Part-1/1964 b) RDSO Spec. No: IRS:TC 41/97 (Amd. 2)

c) IS-694-Part /1964 d) TEC Spec.No: GR/WIR/06/03 of March 2002

21) UTP cable that transmits up to 16 Mbps ( )

a) Cat 1 b) Cat 2

c) Cat 3 d) Cat 4

22) UTP cable that transmits at up to 10 Mbps ( )

a) Cat 3 b) Cat 2

c) Cat 4 d) Cat 1

23) Expand PIJF ( )

a) Polyethylene insulated jelly filled b) Polyester insulated jelly filled

c) Polymer insulated jelly filled d) Polyvinyl insulated jelly filled

24) RDSO spec. for PIJF telephone cable ( )

a) IRS-TC: 41/97 b) TEC Spec.No: GR/WIR/06/03 of March 2002

c) IS 434-Part-1/1964 d) IS-694-Part /1964

25) Colour code of pair 16 in 20 pair PIJF cable ( )

a) Black & slate b) Black & yellow

c) Blue & black d) Blue & yellow

26) Conductor insulation main colours in 20 pair PIJF cable ( )

a) 4 & 5 b) 3 & 5

c) 5 & 4 d) 6 & 4

27) Number of units in 20 pair cable ( )

a) 5 b) 4

c) 6 d) 3

28) Number of units in 50 pair cable ( )

a) 2 b) 4

c) 5 d) 6

29) Number of units in 100 pair cable ( )

a) 5 b) 4

c) 6 d) 7

30) Binding tapes used for identifying each unit in PIJF cable ( )

a) 4 b) 5

c) 3 d) 6

31) Entry of moisture/water prevented by _____ in PIJF cable ( )

a) Aluminium sheath b) GI armour

c) Jelly d) All

32) Armour in UG cable gives ( )

a) Mechanical strength b) Prevents water entry

c) Provides screening d) Prevents moisture entry

33) Loop resistance of 0.51 mm conductor PIJF cable ( )

a) 184 Ω b) 180 Ω

c) 192 Ω d) 194 Ω

34) Induction by AC traction system in telecom circuits due to _____ couplings ( )

a) Electrostatic & galvanic b) Electromagnetic & transformer

c) Electric & magnetic d) Electrostatic & electromagnetic

35) Cumulative buildup of induced voltage in U/G cable prevented by ( )

a) Matching transformers b) Isolation transformers

c) Current transformers d) Step down transformers

36) Psophometric voltage in telecom circuits should not exceed ( )

a) 3 mV b) 2 mV

c) 4 mV d) 5 mV

37) Screening factor of Aluminium sheath/screen is always _____ than unity ( )

a) More b) Equal to

c) Less d) Higher

38) Isolation transformers are used to ( )

a) Reduce induced voltage due to catenary b) For impedance matching

c) For balancing of circuits d) For reducing noise

39) Longitudinally induced voltage under normal traction power system should not exceed ( )

a) 60 V b) 70 V

c) 80 V d) 90 V

40) Maximum permissible induced voltage in U/G telecom cable ( )

a) 150 V b) 160 V

c) 140 V d) 170 V

41) Isolation transformers introduced at intervals of approx. ( )

a) 19 km b) 20 km

c) 10 km d) 17 km

42) Induced voltage in U/G cable due to catenary per km ( )

a) 6.75 V b) 8.75 V

c) 7.75 V d) 5.50 V

43) Isolation transformers provided at ( )

a) Repeaters b) Test room

c) At EC sockets d) Cable huts

44) Transmission loss in 0.9 mm conductor quad cable ( )

a) 0.63 dB/km b) 0.25 dB/km

c) 0.38 dB/km d) 0.69 dB/km

45) 4 Wire system used in U/G cable because ( )

a) Two wires as standby b) Amplifiers used

c) Using cable huts in between d) For future usage

46) RDSO spec of 4/6 PIJF quad cable 0.9 mm conductor ( )

a) IRS:TC: 30/2005 ver.2 b) IRS:TC: 40/2005 ver.2

c) IRS:TC 50/2005 ver.2 d) IRS:TC: 30/2015 ver.2

47) RDSO spec of 4/6 PIJF quad cable 1.4 mm conductor ( )

a) IRS:TC: 30/2005 ver.2 b) RDSO/SPN/TC/72-07

c) IRS:TC 50/2005 ver.2 d) RDSO/SPN/TC/82-07

48) 1.4 mm conductor 4/6 quad cable used when distance between block stations > ( )

a) 30 km b) 10 km

c) 15 km d) 25 km

49) Insulation resistance between each conductor in quad ≥ ( )

a) 200 MΩ/km b) 100 MΩ/km

c) 400 MΩ/km d) 500 MΩ/km

50) Purpose of Poly Aluminium sheath in quad cable ( )

a) Prevent entry of moisture b) Provide screening

c) Protect conductors from damage d) Reduce induced voltages

51) Colours of conductors of quad no. 5 in 6-quad cable ( )

a) Black, white, red, slate b) Blue, white, red, slate

c) Yellow, white, red, slate d) Green, white, red, slate

52) Resistance of conductor in a quad cable ( )

a) 28 Ω/km b) 56 Ω/km

c) 58 Ω/km d) 26 Ω/km

53) Characteristic impedance of 6-quad cable ( )

a) 600 Ω b) 1120 Ω

c) 56 Ω d) 470 Ω

54) Minimum distance between OHE masts and cable ( )

a) 5.00 m b) 5.75 m

c) 6.00 m d) 6.75 m

55) New telecom cables shall be laid close to ( )

a) Way station b) Track

c) Railway boundary d) Telecom equipment room

56) Normal depth of trench for telecom cable ( )

a) 1 m b) 1.5 m

c) 1.8 m d) 2 m

57) Standard drum length of 4/6 quad cable ( )

a) 1 km b) 2 km

c) 500 m d) 460 m

58) Tapping diagram consists of ( )

a) Reasons for each tapping b) Location of each tapping

c) Distance between tappings d) No. of tappings

59) Derivation cable used in 4/6 quad cable system is ( )

a) 6 quad cable b) 4 quad cable

c) PIJF cable d) SWBD cable

60) Telecom cable laid in pipes for a length of _____ on either side of TSS ( )

a) RCC & 300 m b) GI & 200 m

c) Troughs & 200 m d) HDPE & 200 m

61) Cable route indicators to be placed at every ( )

a) 50 m b) 100 m

c) 70 m d) 60 m

62) Cable reserve on each side of major girder bridge ( )

a) 20 m b) 10 m

c) 15 m d) 5 m

63) Cable reserve on each side of minor bridge ( )

a) 7 m b) 6 m

c) 5 m d) 4 m

64) Cable reserve at every joint loop ( )

a) 3 m b) 4 m

c) 5 m d) 2 m

65) Widely used cable laying method for U/G cables ( )

a) Laying solid b) Drawing through ducts

c) Laying in PVC pipes d) Laying direct in the ground

66) Impedance ratio of matching transformer for VF circuits in unloaded quad cable ( )

a) 470:600 Ω b) 470:1120 Ω

c) 470:470 Ω d) 1120:1120 Ω

67) "Branch off clip" used for ( )

a) Normal joint b) Loading coil joint

c) Derivation joint d) Condenser joint

68) RDSO specification for RTSF jointing kit ( )

a) IRS-TC: 77/2012 b) IRS-TC: 79/2012

c) IRS-TC: 77/2011 d) IRS-TC: 77/2014

69) Purpose of tinned copper braid in RTSF kit ( )

a) Continuity between GI armours of both cables b) Continuity between poly-al sheaths

c) Continuity between Al. screening d) Continuity between conductors

70) Purpose of jelly in RTSF kit ( )

a) Prevent water entry b) Provide good conductivity

c) Avoid short circuit d) Provide mechanical support

71) Induced voltages in 6-quad cable eliminated by earthing ( )

a) GI armour b) Poly-Al sheath

c) Al. screening wires d) Aluminium foil

72) Impedance ratio of matching transformer for block circuits in unloaded quad ( )

a) 470:600 Ω b) 1:2 Ω

c) 470:1120 Ω d) 1120:600 Ω

73) Value of loading coil connected in each limb of 6-quad cable ( )

a) 118 mH b) 88 mH

c) 44 mH d) 59 mH

74) RDSO spec for jointing kit used for PIJF telephone cables ( )

a) IRS/TC/41/97 b) IRS-TC-57/2006

c) IRS-TC-77/2012 d) IRS-TC-77/2013

75) Purpose of sealant tape in RTSF kit ( )

a) Cover metallic projections b) Wrap conductors

c) Seal the joint d) Prevent water entry

76) Insulation resistance of quad cable tested with _____ Megger ( )

a) 100 V b) 250 V

c) 500 V d) 1000 V

77) Transmission loss test carried out with tone frequency ( )

a) 1000 c/s b) 800 c/s

c) 600 c/s d) 400 c/s

78) Cross talk measured with frequency for VF circuits ( )

a) 800 c/s b) 1000 c/s

c) 1200 c/s d) 1500 c/s

79) Periodicity of conduction test on quad cable ( )

a) Weekly b) Monthly

c) Quarterly d) Yearly

80) Periodicity of insulation resistance test on quad cable ( )

a) Monthly b) Quarterly

c) Half yearly d) Yearly

81) Periodicity of transmission loss test on quad cable ( )

a) Fortnightly b) Monthly

c) Quarterly d) Half yearly

82) Periodicity of cross talk test on quad cable ( )

a) Fortnightly b) Monthly

c) Weekly d) Quarterly

83) Periodicity of Psophometric noise test on quad cable ( )

a) Fortnightly b) Monthly

c) Quarterly d) Yearly

84) Tone frequency applied for cross talk test on BPAC circuits ( )

a) 1000 c/s b) 5000 c/s

c) 150 k c/s d) 155 k c/s

85) Low insulation fault localized with ( )

a) Multimeter b) Megger

c) Earth tester d) Digital cable fault locator

86) Digital cable fault locator mode to find open/short circuit ( )

a) Low insulation b) Insulation resistance

c) Pulse echo reflection d) Foreign potential

87) Before disconnecting Block/BPAC/IB circuits, _____ to be obtained from SM ( )

a) Disconnection memo b) Disconnection note

c) Disconnection order d) Disconnection booklet

88) Purpose of Integrated Cable Path Diagram ( )

a) Locate path b) Carry out tests

c) Maintenance d) Protect cables

89) BPAC circuit in quad cable tested from ( )

a) Station to station b) Location to location

c) Section to section d) Division to division

90) Quad cable tested periodically by JE/T on ____basis ( )

a) Weekly b) Monthly

c) Quarterly d) Yearly

91) Quad cable tested periodically by SSE/T ( )

a) Weekly & monthly b) Monthly & quarterly

c) Quarterly & yearly d) Half yearly & yearly

92) Quad cable inspected by officers once in ( )

a) Quarterly b) Half yearly

c) Yearly d) Monthly

93) Insulation resistance of 6-quad cable should be greater than ( )

a) 5 MΩ b) 10 MΩ

c) 20 MΩ d) 50 MΩ

94) Jointing kit used for 6-quad cable ( )

a) RTSF-1 b) RTSF-2

c) RTSF-3 d) RTSF-4

95) Screening of 6-quad done using ( )

a) Aluminium wires b) Aluminium sheath

c) Lead sheath d) All

96) Loop resistance of 1.4 mm dia 6-quad cable ( )

a) 23.2 Ω b) 56 Ω

c) 118 Ω d) None

97) RDSO specification of 1.4 mm dia 6-quad cable ( )

a) RDSO/SPN/TC/72-07 b) IRS:TC: 30/2005 ver.2

c) IRS:TC: 31/2005 ver.2 d) None

98) Quad number allotted for emergency communication ( )

a) Quad-1 b) Quad-2

c) Quad-3 d) Quad-4

99) Coaxial cable used for ( )

a) Emergency communication b) Control communication

c) 25 W VHF set d) None

100) STP cable used for ( )

a) PA system wiring b) Auto phone connection

c) Selective calling phone d) IB phone connection

ANSWER KEY

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
a	b	b	b	b	a	a	b	c	A	a	b	c	a	d	a	d	a	b	d
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
d	c	a	a	b	b	c	c	a	B	d	c	a	d	b	b	a	a	a	a
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
a	a	d	a	b	b	b	a	c	B	a	a	b	c	b	b	c	b	b	b
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
b	a	c	b	b	b	c	a	a	A	b	c	d	b	d	b	a	a	b	a
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
c	d	c	a	d	c	c	a	a	A	b	a	b	a	d	a	a	a	c	c

DATA COMMUNICATION & NETWORKING

1. Data communication involves the _____ of data between two devices. ( )
   a) Forward b) Interpretation
   c) Exchange d) Conversation

2. The _____ is the physical path over which a message travels from sender to receiver. ( )
   a) Protocol b) Medium
   c) Signal d) Network

3. Which of the following is not a data communication component ( )
   a) Message b) Protocol
   c) Jitter d) Medium

4. In simplex mode, data communication between two devices is ( )
   a) Unidirectional b) Bi-directional
   c) Multi-directional d) None

5. _____ is a Network of Networks which can be accessed through public network. ( )
   a) Internet b) Intranet
   c) Extranet d) Piconet

6. _____ refers to the physical or logical arrangement of a network. ( )
   a) Data flow b) Mode of operation
   c) Topology d) Protocol

7. A _____ is a set of rules that governs data communication. ( )
   a) Forum b) Protocol
   c) Standard d) Principles

8. Communication between a computer and a Keyboard involves ____ transmission. ( )
   a) Simplex b) Half-duplex
   c) Full-duplex d) Automatic

9. Data flow between two devices can occur in a ____ way. ( )
   a) Simplex b) Half-Duplex
   c) Full-Duplex d) All

10. Mail services are available to network users through the _____ layer. ( )

a) Data link b) Physical

c) Transport d) Application

11. The _____ layer is responsible for moving frames from one hop (node) to the next. ( )

a) Physical b) Data link

c) Transport d) Presentation

12. Why was the OSI model Developed? ( )

a) Manufacturers disliked TCP/IP b) Data transfer increasing

c) Standards were needed d) Model is made to obey orders

13. The physical layer is concerned with the movement of ___ over the physical medium. ( )

a) Programs b) Dialogs

c) Protocols d) Bits

14. Encryption and decryption are functions of the ____ layer. ( )

a) Transport b) Session

c) Presentation d) Application

15. The ____ layer establishes, maintains and synchronizes the interactions between communicating devices. ( )

a) Transport b) Network

c) Session d) Physical

16. HDLC is an acronym for _____. ( )

a) High-duplex line communication b) Half-duplex digital link combination

c) High-level data link control d) None

17. In networking terminology UTP means ( )

a) Unshielded T-Connector Port b) Ubiquitous Teflon Port

c) Unshielded twisted Pair d) Unshielded Teflon pair

18. Which conductors in CAT cable is used for Transmitting Power in POE ( )

a) 1,2,3,4 b) 1,2,3,6

c) 4,5,7,8 d) 1,2,7,8

19. Which conductors in CAT cable is used for Data transmission ( )

a) 1,2,3,4 b) 1,2,3,6

c) 4,5,7,8 d) 1,2,7,8

20. How many pins do RJ-45 Connector Contains? ( )

a) 4 b) 6

c) 8 d) 2

21. Pulse Code Modulation is an example of _____ conversion ( )

a) Digital-to-Digital b) Digital-to-Analog

c) Analog-to-Analog d) Analog-to-Digital

22. In fiber optics, the signal is ____ waves.

( )

a) Light b) Radio

c) Infrared d) Very Low-Frequency

23. TCP is a ____ protocol ( )

a) Connection-oriented b) Connectionless

c) Stream-oriented d) Stream less

24. TCP groups a number of bytes together to packs into ( )

a) User datagram b) Datagram

c) Segment d) Frame

25. Communication in TCP is ____ ( )

a) Simplex b) Half-duplex

c) Full-duplex d) Semi-simplex

26. A port address in UDP is ____ bits long.

( )

a) 8 b) 16

c) 32 d) 64

27. UDP needs the _ address to deliver the user datagram to the correct application process. ( )

a) Port b) Application

c) Internet d) Process

28. UDP packets are called _____ ( )

a) User Datagram b) Segments

c) Frames d) Sockets

29. Router operates on which layer of OSI ( )

a) Data link b) Network

c) Transport d) Physical

30. Routers are used to connect_____networks ( )

a) Similar b) Different

c) Synchronous d) Asynchronous

31. A routing table contains_____ ( )

a) Destination network ID b) Hop count to reach network

c) Router ID of next hop d) All the above

32. Which of the Routing Protocol is Link-State Routing Protocol?

( )

a) RIP b) EIGRP

c) IS-IS d) BGP

33. RIP is based on____ ( )

a) Link State Routing b) Path Vector Routing

c) Dijkstra's Algorithm d) Distance Vector Routing

34. Routing Information Protocol (RIP) supports maximum upto how many hop counts. ( )

a) 15 hops b) 20 hops

c) 30 hops d) 255 hops

35. Open Shortest Path First (OSPF) routing Protocol default Administrative Distance is. ( )

a) 90 b) 110

c) 120 d) 220

36. OSPF is based on _____ ( )

a) Distance vector routing b) Link state routing

c) Path vector Routing d) Free state routing

37. An area border router can be connected to _____ ( )

a) Only another router b) Only another network

c) Only another area border router d) Another router or another network

38. Border Gateway Protocol (BGP) ___ routing Protocol ( )

a) Distance vector b) Advanced Distance Vector

c) Path vector d) Line vector

39. Identify the class IP address 191.1.2.3.

( )

a) Class A b) Class B

c) Class C d) Class D

40. What is the default Subnet mask of Class D ( )

a) 255.255.255.0 b) 255.255.0.0

c) 255.0.0.0 d) None

41. Class A Subnet mask in CIDR / notation. ( )

a) /8 b) /16

c) /24 d) /32

42. Class B Subnet mask in CIDR / notation. ( )

a) /8 b) /16

c) /24 d) /32

43. Class C Subnet mask in CIDR / notation.

( )

a) /8 b) /16

c) /24 d) /32

44. IPv4 Address-representation format ( )

a) Binary b) Octal

c) Decimal d) Hexadecimal

45. The no. of bits used in IPv6 address is ___ ( )

a) 32 bits b) 48 bits

c) 64 bits d) 128 bits

46. The no. of bytes used in IPv6 address is ____ ( )

a) 16 bytes b) 64 bytes

c) 32 bytes d) 128 bytes

47. The no. of Hexadecimal digits in IPv6 address is ____ ( )

a) 16 b) 32

c) 64 d) 48

48. IPv6 addresses are represented using _____ notation.

( )

a) Dotted decimal notation b) Colon Hex notation

c) Dotted hex notation d) Colon decimal notation

49. IPv6 does not use _____ type of address. ( )

a) Broadcast b) Multicast

c) Anycast d) Unicast

50. _____ no. of bits in the MAC address ( )

a) 16 b) 128

c) 48 d) 32

51. In Coaxial Ethernets, the transmission mode is (

)

a) Full duplex b) Simplex

c) Semi-duplex d) Half duplex

52. All 4 pairs are used in Ethernet transmission ( )

a) 100 Mbps b) 2 Mbps

c) 1000 Mbps d) 10 Mbps

53. A switch establishes communication using address (

)

a) Private b) Port

c) IP d) MAC

54. The hardware (or) MAC address is burnt on which part of NIC (

)

a) NVRAM b) FLASH

c) RAM d) ROM

55. In 10BASE-2, the maximum cable run_____ Meter ( )

a) 500 b) 185

c) 100 d) 5000

56. Traditional LAN Switch operate at (

)

a) Layer 2 b) Layer 1

c) Layer 4 d) Layer 3

57. The difference between traditional router and L-3 switch (

)

a) L3 switch has serial/E1 ports also b) Functional difference

c) Router has all Ethernet ports only d) L3 switch has all Ethernet ports only

58. 10 Gigabit Ethernet transmits____ number of bits per second (

)

a) 10 billion b) 1 billion

c) 1000 billion d) 100 billion

59. CRC checks are done at _____ layer in ethernet frame ( )

a) Layer 1 b) Layer 3

c) Layer 2 d) Layer 4

60. 10 Base-2 uses which cable ( )

a) OFC b) Coaxial cable

c) FS cable d) UTP/STP

61. Which of the following is not a feature of 100Base-TX ( )

a) Two-pair Category 5 UTP b) Two-pair STP

c) Uses a long wave laser d) Provides Full Duplex

62. Number of Valid hosts in /30 subnet ( )

a) 6 b) 2

c) 30 d) 62

63. Valid host range of 192.168.32.0/29 network ( )

a) 33-38 b) 32-39

c) 33-39 d) 32-38

64. Number of Valid hosts in /29 subnet ( )

a) 8 b) 4

c) 6 d) 2

65. Valid host range of 192.168.10.32/28 ( )

a) 33-46 b) 33-47

c) 32-46 d) 32-47

66. Number of Valid hosts in /28 subnet ( )

a) 16 b) 14

c) 30 d) 32

67. Number of Valid hosts in /27 subnet ( )

a) 30 b) 32

c) 62 d) 64

68. Valid host range of 192.168.100.64/27 ( )

a) 65-95 b) 64-96

c) 65-94 d) 64-95

69. Number of Valid hosts in /26 subnet

a) 126 b) 62

c) 128 d) 64

70. Valid host range of 192.168.11.128/26 ( )

a) 128-191 b) 129-190

c) 129-191 d) 128-190

71. Number of Valid hosts in /25 subnet ( )

a) 64 b) 128

c) 126 d) 62

72. Valid host range of 192.168.1.128/25 ( )

a) 128-255 b) 129-254

c) 129-255 d) 128-254

73. Number of Valid hosts in /24 subnet ( )

a) 128 b) 254

c) 255 d) 256

74. Valid host range of 172.16.10.0/24 ( )

a) 1-255 b) 0-255

c) 1-254 d) 0-254

75. Number of Valid hosts in /23 subnet ( )

a) 256 b) 510

c) 512 d) 254

76. Valid host range of 172.16.100.0/23 ( )

a) 0-254 b) 0-510

c) 1-511 d) 1-510

77. Number of Valid hosts in /22 subnet ( )

a) 1024 b) 510

c) 1022 d) 512

78. Valid host range of 10.0.100.0/22 ( )

a) 1-1022 b) 0-1022

c) 0-1023 d) 1-1023

79. Number of Valid hosts in /21 subnet ( )

a) 2046 b) 2048

c) 1024 d) 1022

80. Valid host range of 10.0.8.0/21 ( )

a) 1-2046 b) 0-2047

c) 1-2047 d) 0-2046

81. Number of Valid hosts in /20 subnet ( )

a) 2046 b) 4096

c) 4094 d) 1022

82. Valid host range of 10.1.0.0/20 ( )

a) 0-4095 b) 1-4094

c) 1-4095 d) 0-4094

83. Number of Valid hosts in /19 subnet ( )

a) 8192 b) 4094

c) 8190 d) 4096

84. Valid host range of 10.10.0.0/19 ( )

a) 1-8191 b) 0-8190

c) 1-8190 d) 0-8191

85. Number of Valid hosts in /18 subnet ( )

a) 8190 b) 16382

c) 16384 d) 8192

86. Valid host range of 172.16.64.0/18 ( )

a) 0-16382 b) 1-16383

c) 0-16383 d) 1-16382

87. Number of Valid hosts in /17 subnet ( )

a) 16382 b) 32768

c) 16384 d) 32766

88. Valid host range of 172.16.128.0/17 ( )

a) 1-32766 b) 1-32767

c) 0-32766 d) 0-32767

89. Number of Valid hosts in /16 subnet ( )

a) 65534 b) 65536

c) 32766 d) 32768

90. Valid host range of 192.168.0.0/16 ( )

a) 1-65536 b) 0-65534

c) 1-65535 d) 0-65536

ANSWER KEY

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
c	b	c	a	a	c	a	a	D	d	b	c	d	c	c	c	c	c	b	C
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
d	a	a	c	c	b	a	a	B	b	d	c	d	a	b	b	c	c	b	D
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
a	b	c	c	d	a	b	b	B	c	d	c	d	d	b	a	d	a	c	C
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
a	d	c	d	b	a	b	b	B	b	a	b	b	a	d	a	b	c	a	A
81	82	83	84	85	86	87	88	89	90										
a	a	b	a	c	d	a	b	B	b										

(LONG TERM EVOLUTION & KAVACH)

1. What does LTE stand for ( )

   a) Long Term Efficiency
   b) Low Transmission Energy
   c) Long Term Evolution
   d) Local Telecom exchange

2. which organization initiated the LTE project?

   ( )

   a) ITU
   b) IEEE
   c) 3GPP
   d) ETSI

3. LTE is primarily associated with which generation of mobile technology? ( )

   a) 2G
   b) 3G
   c) 4G
   d) 5G

4. The peak downlink data rate offered by LTE under optimal conditions with 20 MHz spectrum bandwidth? ( )

   a) 100 Mbps
   b) 150 Mbps
   c) 200 Mbps
   d) 300 Mbps

5. What is the main goal of LTE?

   ( )

   a) To replace GSM
   b) To provide high data rate and low latency
   c) To reduce mobile phone prices
   d) To eliminate the need for WiFi

6. LTE supports which duplexing methods? ( )

   a) FDD only
   b) TDD only
   c) Both FDD and TDD
   d) CDMA

7. Which release of 3GPP introduced LTE? ( )

   a) Release 6
   b) Release 7
   c) Release 8
   d) Release 9

8. What is the exact bandwidth allotted to Indian Railways for implementing LTE? ( )

   a) 703–748 & 758–803 MHz
   b) 703–708 & 758–763 MHz
   c) 713–718 & 768–773 MHz
   d) 723–728 & 778–783 MHz

9. What are the two main components of the LTE architecture?

   ( )

a) GSM and UMTS
b) E-UTRAN and EPC
c) BTS and MSC
d) IMS and HLR

10. Which component of the LTE architecture handles user mobility and session management ( )
a) S-GW
b) P-GW
c) MME
d) HSS

11. In LTE, what does EPC stand for?
( )
a) Enhanced Protocol Core
b) Evolved Packet Core
c) Enhanced Packet Circuit
d) Evolved Protocol Control

12. Which LTE element is responsible for IP address allocation to the UE? ( )
a) MME
b) HSS
c) P-GW
d) S-GW

13. What is the function of the S-GW in LTE?
( )
a) User plane routing and forwarding
b) Authentication
c) Policy control
d) Call setup

14. The HSS in LTE is mainly responsible for ( )
a) Managing user subscription data
b) Packet forwarding
c) Bearer establishment
d) Radio resource control

15. In LTE , the radio interface between UE and eNodeB is called ( )
a) Uu
b) X2
c) S1
d) Gn

16. Which LTE interface connects eNodeB to MME/S-GW? ( )
a) S1
b) X2
c) Uu
d) Gn

17. Which LTE interface connects two eNodeBs directly? ( )
a) Uu
b) X2
c) S1
d) S5

18. LTE uses which multiple access scheme for downlink?
( )

a) OFDMA b) SC-FDMA

c) CDMA d) TDMA

19. LTE uses which multiple access scheme for uplink? (

)

a) OFDMA b) SC-FDMA

c) CDMA d) TDMA

20. The LTE frame duration is ( )

a) 5 ms b) 10 ms

c) 1 ms d) 100 ms

21. Each LTE radio frame is divided into how many subframes? ( )

a) 5 b) 10

c) 15 d) 20

22. Each LTE subframe has a duration of (

)

a) 1 ms b) 0.5 ms

c) 5 ms d) 10 ms

23. Each LTE slot has a duration of (

)

a) 0.25 ms b) 0.5 ms

c) 1 ms d) 2 ms

24. A subframe in LTE consists of how many slots?

( )

a) 1 b) 2

c) 5 d) 10

25. LTE uses which modulation schemes in downlink? ( )

a) QPSK and 16QAM b) QPSK, 16QAM, and 64QAM

c) BPSK and QPSK d) QPSK only

26. LTE uses which modulation schemes in uplink?

( )

a) QPSK and 16QAM b) QPSK, 16QAM, and 64QAM

c) BPSK and QPSK d) QPSK only

27. The typical cyclic prefix lengths in LTE are ( )

a) Short and Long b) Small and Large

c) Normal and Extended d) Primary and Secondary

28. LTE downlink channel bandwidth can be ( )

a) 1.25, 2.5, 5 MHz b) 1.4, 3, 5, 10, 15, 20 MHz

c) 1, 2, 4, 8, 16 MHz d) 5, 10, 15, 25 MHz

29. LTE uplink channel bandwidth can be ( )

a) 1.4 to 20 MHz b) 5 to 25 MHz

c) 1 to 16 MHz d) 10 to 30 MHz

30. What is the maximum number of resource blocks in LTE for 20 MHz bandwidth? ( )

a) 50 b) 75

c) 100 d) 200

31. Each LTE resource block consists of how many subcarriers?

( )

a) 6 b) 12

c) 24 d) 48

32. The subcarrier spacing in LTE is ( )

a) 10 kHz b) 15 kHz

c) 20 kHz d) 25 kHz

33. What is the duration of one LTE radio frame?

( )

a) 1 ms b) 5 ms

c) 10 ms d) 20 ms

34. How many slots are there in one LTE radio frame?

( )

a) 10 b) 20

c) 40 d) 50

35. Which duplexing methods are supported in LTE? ( )

a) FDD only b) TDD only

c) Both FDD and TDD d) CDMA

36. What does MIMO stand for in LTE? ( )

a) Multiple Input Multiple Output b) Multi Integrated Mobile Operation

c) Maximum Input Minimum Output d) Mobile Internet Management Operator

37. Which MIMO mode uses feedback from the UE? ( )

a) Open loop spatial multiplexing b) Closed loop spatial multiplexing

c) SISO d) SIMO

38. What is the main goal of System Architecture Evolution (SAE)? ( )

a) Increase modulation schemes b) Simplify network architecture

c) Improve antenna design d) Enhance encryption

39. What is the LTE uplink direction defined as? ( )

a) eNodeB to UE b) UE to eNodeB

c) IMS to UE d) PGW to UE

40. Which duplexing scheme uses the same frequency for uplink and downlink? ( )

a) FDD b) TDD

c) CDMA d) OFDMA

41. What is the duration of one LTE radio frame? ( )

a) 1 ms b) 5 ms

c) 10 ms d) 20 ms

42. How many subframes are there in one LTE radio frame? ( )

a) 5 b) 8

c) 10 d) 20

43. Each LTE subframe is divided into how many slots? ( )

a) 1 b) 2

c) 4 d) 8

44. What is the duration of one LTE slot? ( )

a) 0.25 ms b) 0.5 ms

c) 1 ms d) 2 ms

45. What is the subcarrier spacing in LTE? ( )

a) 10 kHz b) 12.5 kHz

c) 15 kHz d) 20 kHz

46. What are the two main planes in LTE protocol architecture? ( )

a) Data and Signal b) Control and User

c) Access and Core d) Physical and Logical

47. Which channel type defines the nature of information being transmitted? ( )

a) Physical b) Transport

c) Logical d) Control

48. Which channel type defines how data is transmitted? ( )

a) Logical b) Transport

c) Physical d) Application

49. What is the primary goal of implementing LTE in Indian Railways? ( )

a) Increase ticket sales b) Enable high-speed internet for passengers

c) Support mission-critical communication and automation d) Replace GSM-R with 5G

50. What is the function of MCPTT in railway operations? ( )

a) Video streaming b) Push-to-talk voice communication

c) Internet browsing d) Ticket booking

51. Which LTE-based system is used to prevent SPAD (Signal Passed at Danger)? ( )

a) EOTT b) DPWCS

c) Kavach (IRATP) d) PIS

52. What is the function of the Cab Radio System? ( )

a) Passenger entertainment b) Loco pilot communication

c) Ticket printing d) Train lighting control

53. Which component of LTE enables real-time video feeds from LC gates? ( )

a) MCPTT b) MC Video

c) IMS d) VoLTE

54. What is the purpose of the LTE router in locomotives? ( )

a) Print tickets b) Provide Wi-Fi to passengers

c) Connect onboard systems to LTE network d) Control train speed

55. What is the function of the Key Management System (KMS) in Kavach? ( )

a) Assign IP addresses b) Manage encryption keys for secure communication

c) Allocate bandwidth d) Monitor train speed

56. What is the main benefit of integrating EOTT with Kavach? ( )

a) Better ticketing b) Enhanced braking verification and safety

c) Increased passenger capacity d) Reduced fuel consumption

57. What does DPWCS stand for? ( )

a) Distributed Power Wireless Control System

b) Digital Passenger Wireless Communication System

c) Dynamic Power Wagon Control System

d) Dual Power Wireless Communication System

58. What is the role of IoT in Indian Railways' LTE network? ( )

a) Entertainment b) Predictive maintenance and asset monitoring

c) Ticketing d) Advertising

59. Which system provides real-time travel information to passengers? ( )

a) Kavach b) PIS

c) DPWCS d) MCPTT

60. What is the advantage of using LTE over UHF for Kavach communication? ( )

a) Higher latency b) Lower cost

c) Lower latency and better reliability d) More spectrum

61. What is the function of the Station Radio? ( )

a) Broadcast music b) Provide LTE to passengers

c) Enable MCPTT communication for Station Masters d) Control train doors

62. What is the benefit of LTE-based video surveillance in railways? ( )

a) Reduce ticket prices b) Improve passenger safety and crime detection

c) Increase train speed d) Reduce fuel usage

63. What is the primary goal of LTE network planning? ( )

a) Increase train speed b) Optimize coverage, capacity, and QoS

c) Reduce ticket prices d) Replace GSM-R with 5G

64. Which tool is essential for simulating LTE radio coverage and interference? ( )

a) Drive Test Tool b) RF Planning Tool

c) GIS Viewer d) Spectrum Analyzer

65. What is the purpose of the RF Planning Tool? ( )

a) Encrypts LTE traffic b) Simulates coverage and interference

c) Allocates IP addresses d) Manages billing

66. What is the typical LTE spectrum band used by Indian Railways? ( )

a) 900 MHz b) 1800 MHz

c) 700 MHz d) 2100 MHz

67. What is the role of the NMS in LTE? ( )

a) Encrypts user data b) Monitors and manages network elements

c) Allocates spectrum d) Controls antenna direction

68. What is the purpose of VLANs in LTE network security? ( )

a) Increase bandwidth b) Separate traffic into security zones

c) Encrypt user data d) Allocate IP addresses

69. What is the function of the KPI module in NMS? ( )

a) Encrypts LTE traffic b) Tracks key performance indicators

c) Allocates IP addresses d) Manages billing

ANSWER KEY:-

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
c	c	c	d	b	c	c	d	b	c	b	b	c	c	b	b	b	a	b	c
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
b	b	b	b	b	b	b	c	d	b	c	c	b	c	b	a	b	b	b	b
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
c	c	b	b	c	b	c	b	c	b	c	b	b	c	b	b	a	b	b	c
61	62	63	64	65	66	67	68	69											
c	b	b	b	b	c	b	b	b											

PASSENGER AMENITIES (PA, IPIS, PIS & GPS CLOCK)

1. Touch screen systems are also called as _____ ( )
   a) Interactive information systems b) Non interactive information systems
   c) Passenger operated enquiry terminal (POET) d) None
2. LED based electronic Display boards are _____ ( )
   a) Non interactive information systems b) Interactive information systems
   c) Semi-interactive system d) None
3. Call centre is the system providing train related information to the passengers ( )
   a) At Railway station b) At passenger end
   c) Both at Railway station and passenger end d) None
4. One of the systems that provide information at Passenger end is _____ ( )
   a) Internet b) Alpha numeric display
   c) POET d) CCTVs
5. One of the systems that provide information at station is _____ ( )
   a) Call centre b) PSTN
   c) IVRS d) CCTVs
6. Passenger Amenities to be provided at stations are decided by _____ ( )
   a) GM of Zonal Railways b) DRM of Divisions
   c) Railway Board d) None
7. Touch screens are used as _____ ( )
   a) Input devices b) Output devices
   c) Both a & b d) None
8. In the Surface acoustic touch screen system, the location of the touch is determined by ( )
   a) Absorption of acoustic waves b) Voltage changes
   c) Frequency changes d) Current changes
9. Digital video recorder can accommodate _____ numbers of cameras. ( )
   a) 8 b) 16
   c) 32 d) 64
10. Network video recorders are used in _____ ( )
    a) IP based CCTV surveillance system b) Analog based CCTV surveillance system
    c) Both Analog and IP based CCTV surveillance system d) None
11. In the Resistive touch screen location of the touch is determined by _____ ( )
    a) Voltage change b) Frequency change
    c) Absorption of acoustic waves d) None
12. Redundant Array of Independent Disks used in IP based CCTV Surveillance system has the storage capacity in _____ ( )

a) Kilobyte b) Megabyte

c) Gigabyte d) Terabyte

13. Digital video recorder (DVR) is used in _____ ( )

a) IP based CCTV surveillance system b) Analog based CCTV surveillance system

c) Both Analog based & IP based CCTV surveillance system d) None

14. The IVRS is integrated with _____ ( )

a) PRS & NTES database through servers b) BSNL/RLY exchange and PRS

c) PRS & BSNL/RLY exchange d) None

15. The Call centre fetches the dynamic data such as train arrival/departure information from ( )

a) PRS server b) NTES server

c) Both a & b d) None

16. PBX Switch in Call centre based IVRS is equipped with _____ ( )

a) 8 E1 trunks b) 72 analog extensions

c) 24 digital extensions d) All

17. In Call center based IVRS, connectivity between BSNL exchange and Call center is ( )

a) Analog circuits b) Digital circuits

c) Both a & b d) None

18. Features such as increased availability of services, E-mail access, Fax on demand, ( )
Automatic announcing unit, Call back facility on reservation confirmation, Accident related queries and Registration of complaints are available in

a) IVRS b) Call center based IVRS

c) Both a & b d) None

19. In IPIS switching is done by _____ ( )

a) Control console unit b) Eight port LAN switch

c) Main data communication hub d) Platform data communication hub

20. Platform display boards and Coach Guidance display boards in the platforms have the ( )
below said addresses.

a) Unique or Device address b) Multicast address

c) Both a & b d) IP address

21. The main data communication hub in IPIS shall have _____ LAN switch ( )

a) 8 Port b) 16 Port

c) 24 Port d) 32 Port

22. Display board is a _____ ( )

a) Output device b) Input device

c) Both d) None

23. Announcement done automatically in IPIS is _____ ( )

a) Normal announcement b) Emergency announcement

c) Both d) None

24. Announcement done manually in IPIS is _____ ( )

a) Normal announcement b) Emergency announcement

c) Both d) None

25. The central data communication hub consists of _____ ( )

a) Main server & control console b) 8 port LAN switch

c) Communication controller d) All

26. The platform data communication hub consists of _____ ( )

a) Platform data communication controller b) 16 port LAN switch

c) Standby LAN switch d) All

27. The optical network connecting the main hub and platform hub is _____ ( )

a) 2-core b) 4-core

c) 6-core d) 8-core

28. Platform data communication hub shall be provided at _____ ( )

a) One end of the platform b) Both ends of the platform

c) Middle of the platform d) Any of the above

29. IPIS provides _____ ( )

a) Automatic announcement b) Manual announcement

c) Both d) None

30. Control console unit is provided at _____ ( )

a) Central location b) Divisional HQ

c) Main station d) None

31. The size of the LED display boards in IPIS shall be _____ ( )

a) 16 x 24 dots b) 24 x 48 dots

c) 32 x 48 dots d) 64 x 128 dots

32. Platform display boards are provided at _____ ( )

a) Waiting halls b) Platforms

c) Booking offices d) None

33. Coach guidance display boards are provided at _____ ( )

a) Entrance of platform b) Middle of platform

c) Alongside platform d) None

34. Double-sided platform display boards are provided at _____ ( )

a) Both sides of the platform b) One side only

c) Either side d) None

35. For indoor application of LED display boards, pitch of LEDs shall be _____ ( )

a) 5 mm b) 10 mm

c) 15 mm d) 20 mm

36. For outdoor application of LED display boards, pitch of LEDs shall be _____ ( )

a) 5 mm b) 10 mm

c) 15 mm d) 20 mm

37. Platform display boards provide information about _____ ( )

a) Arrival & departure b) Platform no.

c) Train no. & train name d) All

38. Coach guidance display boards provide information about _____ ( )

a) Train no. b) Coach position

c) Platform no. d) All

39. At smaller stations, CGB's can be dispensed with and combined with ( )

a) Platform display boards b) Master display board

c) Central console d) None

40. LED display boards in IPIS are controlled by ( )

a) Communication controller b) Control console unit

c) LAN switch d) All

41. The type of LEDs used in IPIS display boards ( )

a) SMD type b) DIP type

c) Both d) None

42. The LEDs used in IPIS display boards have a viewing angle of ( )

a) 60° b) 90°

c) 120° d) 180°

43. The LEDs used in IPIS display boards have a life of more than _____ ( )

a) 20,000 hrs b) 50,000 hrs

c) 1,00,000 hrs d) 5,00,000 hrs

44. The front screen of display boards shall be made of _____ ( )

a) Polycarbonate sheet b) Plastic sheet

c) Glass sheet d) None

45. The front screen of display boards shall be _____ resistant ( )

a) Heat b) Water

c) UV d) All

46. Audio output of the announcement system in IPIS shall not be less than ____ ( )

a) 5 W b) 10 W

c) 15 W d) 20 W

47. The audio output shall be free from _____ ( )

a) Distortion b) Noise

c) Both d) None

48. The frequency response of audio amplifier in IPIS is _____ ( )

a) 100–6000 Hz b) 300–3400 Hz

c) 200–4000 Hz d) 20–20,000 Hz

49. The distortion in the amplifier shall not be more than _____ ( )

a) 1% b) 3%

c) 5% d) 10%

50. Speakers in IPIS are provided at _____ ( )

a) Platforms b) Waiting halls

c) Booking halls d) All

51. The size of the speaker provided in IPIS shall be _____ ( )

a) 100 mm b) 150 mm

c) 200 mm d) 300 mm

52. The impedance of the speakers provided in IPIS shall be _____ ( )

a) 2 Ω b) 4 Ω

c) 8 Ω d) 16 Ω

53. The frequency response of speakers shall be _____ ( )

a) 100–6000 Hz b) 300–3400 Hz

c) 200–4000 Hz d) 20–20,000 Hz

54. The power handling capacity of speakers provided in IPIS shall not be less than ( )

a) 5 W b) 10 W

c) 15 W d) 20 W

55. In IPIS, the server is generally _____ based ( )

a) Linux b) Windows

c) Both d) None

56. The database software used in IPIS shall be _____ ( )

a) MS SQL b) Oracle

c) MySQL d) Any of the above

57. The data communication protocol used in IPIS is _____ ( )

a) RS232 b) RS422

c) RS485 d) TCP/IP

58. The data communication cable used in IPIS is _____ ( )

a) Coaxial cable b) Cat-5/Cat-6 UTP cable

c) OFC d) Twin core cable

59. The voltage used for driving LED display boards in IPIS is _____ ( )

a) 12 V DC b) 24 V DC

c) 48 V DC d) 230 V AC

60. The standby power supply for IPIS is provided by _____ ( )

a) Battery backup b) Diesel generator

c) Both d) None

61. The type of clock used in Indian Railways is _____ ( )

a) Quartz clock b) GPS clock

c) Mechanical clock d) None

62. The accuracy of GPS clock used in Railways is _____ ( )

a) ±1 sec b) ±100 ms

c) ±10 ms d) ±1 ms

63. The time reference for GPS clock is taken from _____ ( )

a) Atomic clock b) Satellite

c) Local server d) Internet

64. The synchronization of GPS clocks in stations is done through _____ ( )

a) RS232 b) NTP

c) RS485 d) TCP/IP

65. The display of GPS clock is generally in _____ ( )

a) Analog b) Digital

c) Both d) None

66. The colour of display used in GPS clock is generally _____ ( )

a) Red b) Green

c) Blue d) White

67. The life of LEDs used in GPS clock is more than _____ ( )

a) 20,000 hrs b) 50,000 hrs

c) 1,00,000 hrs d) 5,00,000 hrs

68. The digit size of platform GPS clock is generally _____ ( )

a) 100 mm b) 150 mm

c) 200 mm d) 300 mm

69. The digit size of large GPS clock in concourse is _____ ( )

a) 300 mm b) 400 mm

c) 500 mm d) 600 mm

70. GPS clock derives its power supply from _____ ( )

a) 12 V DC b) 24 V DC

c) 48 V DC d) 230 V AC

71. The standby supply for GPS clock is provided by _____ ( )

a) SMPS b) UPS

c) Battery backup d) All

72. The frequency of satellite signal received by GPS clock is _____ ( )

a) L1 band b) L2 band

c) Both d) None

73. In IPIS system, the announcement is given through _____ ( )

a) Server b) Console unit

c) Amplifier d) All

74. The IPIS system helps passengers by providing _____ ( )

a) Train info b) Platform info

c) Arrival/Departure info d) All

75. GPS clock time is based on _____ ( )

a) UTC b) IST

c) GMT d) Local time

76. The deviation of time allowed in GPS clock is _____ ( )

a) ±0.1 sec b) ±0.01 sec

c) ±0.001 sec d) ±1 sec

77. The PA system stands for _____ ( )

a) Public Announcement b) Passenger Announcement

c) Platform Announcement d) None

78. The communication between PA system and IPIS is through _____ ( )

a) RS485 b) TCP/IP

c) RS232 d) Optical fibre

79. The operating voltage of speakers in PA system is _____ ( )

a) 70 V b) 100 V

c) 230 V d) 24 V

80. The number of speakers connected in PA system is decided based on _____ ( )

a) Platform length b) Train length

c) Station size d) All

81. For the connection of loudspeakers in _ matching method, four terminal strips are provided viz., com., 4Ω, 8Ω and 16Ω. ( )

a) Impedance b) Voltage

c) Current d) Power

82. Amplifiers are rated at some specified output in watts with a declared harmonic content,of ( )

a) 5 % b) 10 %

c) 15 % d) 20 %

83. ___ control routes the channel to either left or right output. ( )

a) PAN b) TILT

c) ZOOM d) All

84. The mean level of sound pressure shall be ____ dB above the noise level. ( )

a) 5 to 15 dB b) 25 to 45 dB

c) 50 to 100 dB d) 100 to 150 dB

85. The frequency response for the entire system should be within __ from 100 Hz to 10 KHz. ( )

a) +3 dB b) +5 dB

c) +30 dB d) +15 dB

86. The total harmonic distortion of the entire system shall not exceed ___% at the rated power output of the amplifier. ( )

a) 5 % b) 15 %

c) 50 % d) 75 %

87. The signal-to-noise ratio under normal operating conditions of the amplifying systems shall not be worse than __ dB. ( )

a) 50 dB b) 100 dB

c) 150 dB d) 200 dB

88. In the normal operating conditions sound pressure level is ____ dB. ( )

a) 70 to 80 dB b) 100 to 120 dB

c) 150 to 180 dB d) 10 to 20 dB

89. The sound reflection reaching a listener's ear at least 1/15th of a second after the original sound is termed as. ( )

a) Echo b) Reverberation

c) Sound foci d) None

90. _____ is an accumulation of echoes. ( )

a) Reverberation b) Echo

c) Sound foci d) None

91. _____ is a one-way communication in which one can call or summon the individuals or the general public. ( )

a) Paging b) Talkback

c) Both a & b d) None

92. which facilitates to talk back to the caller by the individual, is called __system. ( )

a) Paging & talkback b) Public address

c) Auto announcement d) None

93. Impedance of the load should be matched with the impedance of the amplifier. ( )

a) Output b) Input

c) Both a & b d) None

94. Line matching transformers (LMT) are being used in ( )

a) Voltage matching method b) Impedance matching method

c) Current matching method d) Power matching method

95. The power transfer is maximum in ( )

a) Impedance matching b) Voltage matching method

c) . Power matching method d) Current matching method

96. Auxiliary port is used to connect ____ ( )

a) Tape recorder/ DVD b) TV

c) Projector d) All

97. Pre-amp out socket is used to connect _____ ( )

a) Tape recorder b) TV

c) Projector d) All

98. Mixer is used to connect ___ device. ( )

a) Input b) Output

c) Both d) None

99. Horn speaker is used for ____ matching. ( )

a) Impedance matching b) Voltage matching

c) Both d) None

100. At railway stations _____type of matching method is used for connecting speakers. ( )

a) Voltage b) Impedance

c) Current d) Power

ANSWER KEY

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
c	a	b	a	d	c	c	a	c	a	a	d	b	a	b	d	b	b	c	c
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
c	d	a	c	c	b	a	d	c	a	b	b	a	a	b	c	c	d	d	d
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
b	d	a	a	a	b	d	b	a	a	a	a	a	a	a	a	a	a	a	a
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
a	b	a	a	a	a	a	a	a	a	a	a	b	b	c	a	a	a	a	b
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	b	a

ELECTRONIC AND IP EXCHANGE

1) In ISDN what does the word 'N' stands for ( )
   a) Network b) Near
   c) Networking d) Net

2) ISDN supports _____ services ( )
   a) Voice b) Data
   c) Video d) All

3) What type of Signalling is used in ISDN Exchanges ( )
   a) CAS b) CCS-7
   c) MFC d) R2-MFC

4) What is the D-channel data rate in ISDN BRI Interface ( )
   a) 64 Kbps b) 16 Kbps
   c) 48 Kbps d) 16 KBps

5) What is the D-channel data rate in ISDN PRI Interface ( )
   a) 64 KBps b) 72 Kbps
   c) 64 Kbps d) 16 Kbps

6) In ISDN, BRI Transmission rate are ( )
   a) 128 Kbps b) 144 Kbps
   c) 2048 Kbps d) 192 Kbps

7) In ISDN PRI Transmission rate are ( )
   a) 2048 Kbps b) 2000 Kbps
   c) 2.048 Kbps d) 2048 Mbps

8) How many channels at present in European PRI interface rate ( )
   a) 32 b) 30
   c) 23 d) 64

9) How many Time slots at present in European PRI interface rate ( )
   a) 32 b) 30
   c) 23 d) 64

10) What is the H0-channel data in ISDN ( )
   a) 512 Kbps b) 1024 Kbps
   c) 192 Kbps d) 384 Kbps

11) Reference point between ISDN local exchange to NT1 ( )
   a) R-Interface b) T-Interface
   c) S/T-Interface d) U-Interface

12) Reference point between Terminal Adapter & TE2 ( )
   a) U-Interface b) T-Interface
   c) R-Interface d) S/T-Interface

13) Encoding used in customer premises to ISDN Switch ( )
a) 2B/2Q b) 1B/1Q
c) 1B/2Q d) 2B/1Q

14) HLDC means High-level _____ link control ( )
a) Digital b) Data
c) Design d) Distance

15) CLIP – Calling line _____ presentation ( )
a) Identification b) Index
c) Instant d) Inbuilt

16) COLP – Connected _____ identification presentation ( )
a) Line b) Link
c) Length d) Large

17) CUG – _____ user group ( )
a) Closed b) Calling
c) Client d) Control

18) CTI – Computer _____ integration ( )
a) Telephony b) Telegraphy
c) Tele presentation d) Touch

19) ACD – Automatic ____ distribution ( )
a) Call b) Control
c) Connected d) Central

20) DECT – _____ enhanced cordless telephone ( )
a) Digital b) Distance
c) Discrete d) None

21) CAP – Computerized Attendant _____ ( )
a) Position b) Presentation
c) Point d) Part

22) Main processor MEX card of Coral Flexicom 5000 contains ( )
a) 80386 b) 80286
c) 8086 d) 80186

23) Control card in Coral Flexicom ( )
a) UGW b) IDSP
c) DTR d) MCP

24) Switching card in Coral Flexicom 6000 ( )
a) DTR b) IDSP
c) MCP d) GC

25) Peripheral card in Coral Flexicom 6000 ( )
a) MCP b) CNF
c) DTR d) SFT

26) Service card in Coral Flexicom 6000 ( )
a) TEM b) SFT
c) SA d) DTR

27) Analog subscriber card in Coral Flexicom 6000 ( )
a) TBR b) TWL
c) SFT d) SA

28) Digital subscriber card in Coral Flexicom 6000 ( )
a) TBR b) TEM
c) SA d) SFT

30) Which is the digital trunk card in coral flexicom 6000 ( )
a) TC b) TWL
c) TEM d) PRI

31) Which is the BRI card in coral flexicom 6000? ( )
a) TWL b) TC
c) TEM d) TBR

32) Which is the VoIP card in coral flexicom 6000 ( )
a) MCP b) SFT
c) IDSP d) UGW

33) Which is the DTMF tone dialing support card in coral flexicom 6000 ( )
a) GC b) MCP
c) IDSP d) DTR

34) Which is the caller ID card in coral flexicom 6000?
( )
a) GC b) MCP
c) DTR d) IDSP

35) Which is the multifunction resource card in coral flexicom 6000 ( )
a) DTR b) IDSP
c) MCP d) DRCF

36) Which card contains serial ports in coral flexicom 6000? ( )
a) MCP b) UGW
c) IDSP d) DRCF

37) Which card contains internal modem in coral flexicom 6000 ( )
a) UGW b) GC
c) MCP d) DRCF

38) What is the ringing voltage for analog phones in ISDN exchanges ( )
a) 75V@40 Hz b) 75V@35 Hz
c) 75V@30 Hz d) 75V@25 Hz

39) Which card contains COM2 port in coral flexicom 6000? ( )
a) UGW b) GC
c) MCP d) DRCF

40) Which card contains SAU in coral flexicom 6000? ( )
a) IDSP b) UGW
c) MCP d) GC

41) How many peripheral shelves are supported in coral flexicom 6000 ( )
a) 12 b) 14
c) 16 d) 18

42) How many slots are there in a peripheral shelf in coral flexicom 6000? ( )
a) 14 b) 16
c) 18 d) 20

43) In which slot PB-ATS card is available in coral flexicom 6000? ( )
a) 1 b) 2
c) 1 & 2 d) 3

44) At Maximum how many shelves are controlled by 01 PB card in coral 6000? ( )
a) 1 b) 2
c) 3 d) 4

45) How many time slots are allotted for one peripheral shelf in coral flexicom 6000 ( )
a) 128 b) 256
c) 512 d) 1024

46) How many time slots are allotted for each PB card in coral flexicom 6000 ( )
a) 128 b) 256
c) 512 d) 1024

47) What is the time slot switching capacity of 32GC card in coral flexicom 6000 ( )
a) 1024 b) 2048
c) 4096 d) 8192

48) How many connectors in MPG-ATS for each 32GC card in coral flexicom 6000 ( )
a) 4 b) 6
c) 8 d) 10

49) How many IP ports are supported by a UGW card in coral flexicom 6000 ( )
a) 254 b) 252
c) 250 d) 248

50) How many pairs are required to connect a digital telephone in coral 6000 ( )
a) 4 b) 3
c) 2 d) 1

51) What is the nominal working voltage for ISDN exchanges ( )
a) 54V DC b) –52V DC
c) 50V DC d) –48V DC

52) How many pairs are required to connect PRI trunk ( )
a) 1 b) 2
c) 3 d) 4

53) Up to what length a DECT telephone works on 0.5mm dia copper pair ( )
a) 1 km b) 2 km
c) 3 km d) 4 km

54) Foreign Exchange Subscriber card is used to connect ( )
a) Analog phone b) Digital phone
c) Both d) None

55) Hyper terminal default bit rate for accessing coral flexicom 6000 is ( )
a) 9600 Kbps b) 9600 Bytes
c) 9.6 Bytes d) 9600 Bytes

56) Clocking and synchronization of exchange was done by which card ( )
a) 32 GC b) MCP-ATS
c) DRCF d) DTR

57) Which card is Digital tone generators in coral flexicom 6000 ( )
a) 32 GC b) MCP-ATS
c) DRCF d) DTR

58) Which card is used for computer-telephony integration in Coral flexicom 6000 ( )
a) 32 GC b) MCP-ATS
c) CLA-ATS d) DTR

59) In a particular copy the diagnostic indicator present in 32 GC card "S-Green" light is constant.That copy is in which mode in Coral flexicom 6000 ( )
a) Standby mode b) Maintenance mode
c) Active mode d) Faulty Mode

60) What is child card present at the back side of Mother board of PB-ATS card in even peripheral shelf in Coral flexicom 6000 ( )
a) PBD-ATS b) MGP-ATS
c) CLA-ATS d) PBD-24S

61) What type of cable is used to connect between MPG-ATS to PBD-ATS ( )
a) FC-19 b) FC-18
c) H.43 d) H.41

62) What is the number of peripheral shelf unit, if connected to Port P5 of right copy or port P13 of left copy of MPG-ATS in control self through FC-19 cable in Coral 6000 ( )
a) Unit 4 b) Unit 5
c) Unit 8 d) Unit 9

63) What is numbering of even and odd shelf of Peripheral shelf unit 6? ( )
a) Shelf-13, Shelf-14 b) Shelf-2, Shelf-3
c) Shelf-11, Shelf-12 d) Shelf-12, Shelf-13

64) What facility does SA card have compared to SLS card in coral flexicom 6000? ( )
a) Inbuilt ringer circuit b) High loop resistance
c) Both a & b d) None

65) How many slots are there in Siemens Hipath 3800 exchange? ( )
a) 14 b) 8
c) 10 d) 12

66) Which slot contains main control card in Siemens Hipath 3800 exchange ( )

a) 5 b) 6
c) 7 d) 8

67) How many pairs are wired for each slot to MDF in Siemens 3800 exchange ( )

a) 22 b) 24
c) 26 d) 28

68) How many DECT cards are supported in Siemens Hipath 3800 exchange ( )

a) 1 b) 2
c) 3 d) 4

69) How many ports are there in a DECT card in Siemens 3800 exchange ( )

a) 14 b) 16
c) 18 d) 20

70) How many radio base stations are supported in Siemens 3800 exchange ( )

a) 32 b) 64
c) 256 d) 128

71) How many pairs are required to connect a base station in Hipath 3800 exchange ( )

a) 1 b) 2
c) 3 d) 4

72) How many simultaneous calls are supported by one base station in Hipath 3800 ( )

a) 5 b) 10
c) 16 d) 20

73) How many DECT handsets are supported in Siemens Hipath 3800 exchange ( )

a) 250 b) 256
c) 254 d) 252

74) What is the radius of operation of a base station in Siemens 3800 exchange ( )

a) 100 mts b) 200 mts
c) 300 mts d) 400 mts

75) How many power supply units can Siemens Hipath 3800 accommodate ( )

a) 1 b) 2
c) 3 d) 4

76) Battery power supply is connected to which pin on motherboard of Hipath 3800 ( )

a) X210 b) X211
c) X110 d) X100

77) What is the name of Digital BRI card in Siemens Hipath Exchange ( )

a) SMTD b) SLMO
c) SMTO d) SLCN

78) Which card of Siemens Hipath 3800 supports Cordless Telephone ( )

a) SLCN b) DUIN
c) SMTD d) DUIT

79) In ISDN exchange, maximum permissible line loop resistance is ( )

a) 1200 ohms b) 600 ohms

c) 1500 ohms d) 1400 ohms

80) In coral 6000 exchange, control cards are in __mode of operation ( )

a) Cold standby b) Hot standby

c) Changeover d) None

ANSWER KEY

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
a	**d**	**b**	**b**	**d**	**d**	**a**	**b**	**a**	**d**	**d**	**c**	**d**	**b**	**a**	**a**	**a**	**a**	**a**	**a**
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
a	**a**	**d**	**d**	**d**	**d**	**d**	**d**	**d**	**d**	**d**	**d**	**d**	**d**	**d**	**d**	**d**	**d**	**d**	**d**
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
c	**c**	**c**	**b**	**b**	**c**	**c**	**c**	**d**	**d**	**d**	**b**	**a**	**a**	**b**	**a**	**a**	**c**	**a**	**a**
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
a	**a**	**d**	**c**	**c**	**b**	**b**	**d**	**b**	**b**	**a**	**c**	**b**	**c**	**c**	**a**	**a**	**a**	**a**	**b**

Lightning, Surges & Earthing

1. Surges involve voltages and currents which are ____ than the working voltages and currents. ( )

a) Higher b) Lower

c) Equal d) Very Low

2. Ice crystals are ____ charged whereas water droplets are _____ charged. ( )

a) Positively & negatively b) Both positive

c) Both negative d) Negatively & positively

3. In lightning the air gets heated up to _____ degrees Kelvin.

( )

a) 20000 b) 25000

c) 30000 d) 40000

4. The magnitudes of electric currents resulting due to lightning are between _____ K Amp. ( )

a) 10–200 b) 10–50

c) 200–500 d) 200–1000

5. Lightning results in building up of potentials of the order of _____. ( )

a) 1–10 volt b) 1–10 kVolt

c) 1–10 million volt d) None

6. Lightning protection zone LPZ 0A means _____. ( )

a) Internal b) External

c) Both d) None

7. Lightning protection zone LPZ1 means _____. ( )

a) Internal b) External

c) Both d) None

8. Which lightning protection zone comes under direct strike? ( )

a) LPZ 0A b) LPZ 0B

c) LPZ 1 d) LPZ 2

9. Positive charge center lies in __and negative charge center lies in _ part of atmosphere. ( )

a) Upper & lower b) Lower & upper

c) Upper & upper d) Lower & lower

10. Even though the earth is a bad conductor, the reason for choosing earthing as a protective means is because ( )

a) Earth has high conductivity
b) Earth is an equipotential surface
c) Earth is circular in shape
d) None

11. Resistivity of dry soil is the order of _____. ( )
a) 1 Ω-m
b) 10 Ω-m
c) 100 Ω-m
d) 1000 Ω-m

12. Resistivity of wet soil _____. ( )
a) 1 Ω-m
b) 10 Ω-m
c) 100 Ω-m
d) 1000 Ω-m

13. The fault currents return to the source in case of _____ systems. ( )
a) Generation
b) Transmission
c) Traction
d) All

14. Electrode to earth contact resistance has to be _____. ( )
a) Low
b) High
c) Very high
d) Very low

15. The length of copper electrode in rod earthing system has to be _____. ( )
a) 1 m
b) 2 m
c) 3 m
d) 4 m

16. By using two electrodes the earth resistance becomes half only if the distance between the two electrodes is ___ times the length of electrode. ( )
a) 0.5
b) 1.5
c) 2
d) 3

17. When a strip or plate electrode is used which parameter of it has a major influence on earth resistance. ( )
a) Length
b) Width
c) Cross-section area
d) Weight

18. The factors which keep soil resistivity to a lower value are _____. ( )
a) Moisture
b) Minerals
c) Temperature
d) All

19. Surge arrestors and lightning dischargers offer protection against the buildup of ____. ( )
a) High current
b) High voltage
c) Both
d) None

20. System earthing is associated with _____. ( )

a) Current carrying conductors b) Non-current carrying parts

c) Both d) None

21. Equipment earthing is associated with _____. ( )

a) Current carrying conductors b) Non-current carrying parts

c) Both d) None

22. The potential difference between two points on Earth's surface separated by a distance ( ) of 1 meter is called ____.

a) Step voltage b) Touch voltage

c) Earth voltage d) None

23. The potential difference between grounded metallic structure and a point on the earthing surface is known as __ voltage. ( )

a) Step voltage b) Touch voltage

c) Earth voltage d) None

24. The best preferred type of soil used for locating an earth electrode? ( )

a) Wet marshy soil b) Clayey soil

c) Dry sand d) Granite stone

25. Method used for measuring earth electrode resistance is _____. ( )

a) Fall of potential b) Rise of potential

c) Potential free d) None

26. One of the characteristics of a good earthing system is _____. ( )

a) Low resistance b) High resistance

c) Low inductance d) Low capacitance

27. Sites not suitable for location of earth electrodes _____. ( )

a) Dry sand b) Gravel/chalk

c) Limestone/granite d) All

28. Acceptable earth resistance value at busbar is _____. ( )

a) <1 Ω b) 1–10 Ω

c) >10 Ω d) >1 Ω

29. Components of earthing & bonding system includes _____. ( )

a) Earth electrode b) Earth enhancement material

c) Equipotential earth busbar d) All

30. Copper bonded steel rod is preferred for earth electrode due to its ____. ( )

a) Higher strength & lower cost
b) High corrosion resistance
c) Low resistance path to earth
d) All

31. Earth enhancement material should be a ____ that improves earthing effectiveness. ( )

a) High conductivity
b) Non-corrosive
c) Thermally stable
d) All

32. Which Class of lightning protection is used on top of building? ( )

a) Class A
b) Class B
c) Class C
d) Class D

33. In which Class of lightning protection the down copper conductor size shall be 50 sq.mm cross-section? ( )

a) Class A
b) Class B
c) Class C
d) Class D

34. Which Class of lightning protection works on arc chopping principle? ( )

a) Class A
b) Class B
c) Class C
d) Class D

35. Which Class of lightning protection is placed on mains distribution panel? ( )

a) Class A
b) Class B
c) Class C
d) Class D

ANSWER KEY

1	2	3	4	5	6	7	8	9	10
a	a	c	a	a	b	a	a	a	b
11	12	13	14	15	16	17	18	19	20
d	b	d	d	c	c	a	d	c	a
21	22	23	24	25	26	27	28	29	30
b	a	b	a	a	a	d	a	d	d
31	32	33	34	35	36	37	38	39	40
d	a	a	b	b					

TRAIN TRAFFIC CONTROL

1. The function of proper utilization of rolling stock comes under _____control ( )
   a) Section Control b) TPC
   c) Dy Control d) Traction Loco control
2. Efficient utilization of Engine power falls under _____control. ( )
   a) Power b) C & W
   c) TPC d) Section Control
3. A Power Controller in electrified sections is called a _____Controller. ( )
   a) TPC b) TLC
   c) Dy. Control d) Engineering Control
4. Trains movements information of a particular day can be had from _____ ( )
   a) Control Point b) Control Telephone
   c) Control Register d) Control Chart
5. CAO Central Application Server is located at _____. ( )
   a) CORE b) CRIS
   c) RDSO d) RITES
6. Railway control communication circuits are of _____type circuits. ( )
   a) Point to Point b) Omnibus
   c) Broadcast d) Trunk
7. Type of signaling system suitable for control circuits is _____ ( )
   a) DFTM b) DTFM
   c) DTMF d) DTMF
8. Emergency Control sockets are provided on rail posts at _____ km intervals. ( )
   a) 100 b) 10
   c) 1 d) 0.1
9. Name any one control circuit used only in RE sections. _____ ( )
   a) RC b) TPC
   c) TLC d) All the above

10. No. of tones used in the DTMF system. _____ ( )

a) 8 b) 16

c) 32 d) 64

11. Maximum no. of way station codes available in DTMF system are _____ ( )

a) 96 b) 97

c) 98 d) 99

12. DTMF Control Communication System Works on _____ ( )

a) 12 V DC b) 48 V DC

c) 24 V DC d) -12V DC

13. SCADA stands for _____ ( )

a) Supervisory Control and Data acquisition b) Station Control and Data acquisition

c) Supervisory Control and Digital acquisition d) Signal Control and Digital acquisition

14. Railway control communication circuits are ____ ( )

a) Point to point b) Omnibus

c) Peer to Peer d) Port to Port

15. DTMF system uses _____ ( )

a) 16 Tones b) 4 Tones

c) 64 Tones d) 6 Tones

16. DTMF Control Communication System Works on _____ ( )

a) 12 V DC b) 48 V DC

c) 24 V DC d) -12V DC

17. Maximum no. of way station codes available in DTMF system is ____ ( )

a) 97 b) 98

c) 99 d) 100

18. Emergency control sockets are provided at ( )

a) TS/SP/SSP b) Waiting Halls

c) Goods Sheds d) Stations

19. Emergency control sockets are installed at intervals of ( )

a) 1 Km b) 0.5 Km

c) 3 Km d) 0.915 Km

20. Type of signaling system suitable for control circuits is ( )

a) E & M b) RD

c) Loop d) DTMF

21. Voice Frequency range is ( )

a) 300 Hz to 3400 Hz b) 20 Hz to 20 KHz

c) 1 KHz to 2 KHz d) 2 KHz to 4 KHz

22. Which protocol is mandatory in TCCS for signaling ( )

a) SIP Protocol b) FTP Protocol

c) HTTP Protocol d) None

23. QoS is managed at which network layer ( )

a) Layer 2 & Layer 3 b) Layer 3 & Layer 5

c) Layer 4 d) None

24. Which specification governs VoIP-based TCCS ( )

a) RDSO/SPN/99/2023 b) RDSO/SPN/96/2010

c) RDSO/SPN/39/2010 d) RDSO/SPN/34/2012

25. TCCS can interface with Railway Exchanges via ( )

a) FXO Gateway b) Modems

c) PD MUX d) FXS Gateway

26. In TCCS the emergency controller connects to ( )

a) Emergency circuit & section control b) PA system

c) Social Media d) Exchange

27. IP phones in TCCS must be ( )

a) SIP or H.323 compliant b) HTTP Compliant

c) FTP d) H.265 Compliant

28. VLAN segmentation in TCCS ensures ( )

a) TCCS security b) Low Power consumption

c) Enhance Browsing d) Enhance Bandwidth

29. Remote configuration and real time performance monitoring of TCCS shall be done by centralized _ ( )

a) Control b) NMS

c) Server d) Switch

30. VoIP-based TCCS is based on ( )

a) Open international standards b) GSM-based Technology

c) Proprietary railway technology d) Analog System

31. Patching in train control communication is _____ ( )

a) Connecting alternate circuits during fault b) Voice logging

c) Speech Boosting d) Reduce power Consumption

32. Patching in control communication improves _____ ( )

a) Reliability b) Accessibility

c) Passenger Information d) Power Supply

33. EC socket is used by _____ ( )

a) Driver and Guard b) Train Passengers

c) On board TTE d) Private Vendors

34. In the absence of ring protection, patching is done via _____ ( )

a) BSNL Leased Line Channel b) Satellite Communication

c) GSM communication d) None

35. Master phone of Electronic LC gate system operates on _____ DC supply. ( )

a) 3 V b) 12 V

c) 24 V d) 48 V

36. Auto dialling system is used in emergencies for providing ___ facility at track side. ( )

a) Control phone b) Rly. Auto Phone and BSNL phone

c) BSNL phone only d) Rly. Auto phone only

37. In Indian Railway, Voice data logger is provided in _____. ( )

a) Control Office b) Test room

c) Way stations d) Loco sheds

38. Electronic LC gate phone has one master and _____slave phones. ( )

a) 2 b) 4

c) 6 d) 8

39. A 2-wire 12-way telephone consists of one master and _____ slave phones. ( )

a) 5 b) 10

c) 12 d) 15

40. If there is no speech transmission from controller, one likely cause can be _____ ( )

a) Receive amplifier failure b) Keypad failure

c) Input from Mic not available d) Wrong speaker connection

41. When there is no communication beyond an intermediate OFC repeater, it indicates __. ( )

a) OFC equipment failure b) Power supply failure

c) STM Failure d) All a, b & c

42. If there is no ringing at a way station, one likely cause can be _____. ( )

a) Faulty DTMF decoder b) PTT failure

c) Trans amplifier failure d) Faulty handset

43. _____ can result in both way communication loss with the controller. ( )

a) Equipment failure b) AC power supply failure

c) Speaker failure d) Mic failure

44. Minimum no. of speech channels recorded by one voice logger unit. _____ ( )

a) 4 b) 8

c) 12 d) 16

45. The operating voltage and current of the Voice logger are ____ and _____. ( )

a) 24VDC & 2 Amp b) 12VDC & 1 Amp

c) 12VDC & 2 Amp d) 24VDC & 1 Amp

46. Voice logger is used in _____ in railways. ( )

a) Telephone exchange b) Control office

c) DRM office d) Enquiry counter

47. The Voice logger used in control communication has a built in hard disc of Capacity. ( )

a) 10 Gb b) 20 Gb

c) 30 Gb d) 40 Gb

48. _____ connectors are used to connect control voice channels to the Voice logger. ( )

a) RJ 45 b) RJ 11

c) RS232 d) RS485

49. In a smart voice logger, provision of the number of channels is scalable up to ___. ( )

a) 8 b) 32

c) 64 d) 128

50. Remote control works on _____ principle. ( )

a) WPA b) SCADA

c) PTCC d) DTMF

ANSWER KEY

1	2	3	4	5	6	7	8	9	10
c	a	b	d	b	b	d	c	b	a
11	12	13	14	15	16	17	18	19	20
b	a	a	a	a	a	a	a	a	a
21	22	23	24	25	26	27	28	29	30
a	a	a	a	a	a	a	a	a	a
31	32	33	34	35	36	37	38	39	40
a	a	a	a	b	b	b	c	b	a
41	42	43	44	45	46	47	48	49	50

PDH

1. TDM uses _____ sharing of the transmission media. ( )
   A) Frequency B) Time
   C) Amplitude D) Phase
2. In PCM, Filtering is used to limit the speech signal to the frequency band of ___ KHz ( )
   A) 0–4 B) 0–4.3
   C) 3–4 D) 3–5
3. In PCM, the process of slicing the analog signals at regular intervals is called ( )
   A) Filtering B) Sampling
   C) Encoding D) Quantizing
4. As per sampling theorem, the sampling rate is -------- the highest signal frequency. ( )
   A) Thrice B) Twice
   C) Once D) Quadruple
5. In PCM, for a band limited signal of 4 KHz the sampling frequency will be ( )
   A) 8 KHz B) 10 KHz
   C) 4 KHz D) 20 KHz
6. In PCM, PAM signals are converted into digital form by ( )
   A) Sampling B) Filtering
   C) Line coding D) Quantization
7. In PCM, interval between two consecutive samples of a channel is ___ μs ( )
   A) 2.9 B) 3.9
   C) 125 D) 4.9
8. In an E1 frame, the time duration of a time slot is _____ μs ( )
   A) 2.9 B) 5.9
   C) 3.9 D) 4.9
9. In PCM, the method adopted to reduce quantization error is _____ quantization ( )
   A) Differential B) Linear
   C) Nonlinear D) Phase
10. Encoding is the process of converting quantized samples into _____ signal ( )
    A) Hexagonal B) Binary
    C) Decimal D) Fractional
11. In an E1 frame, signalling info is transmitted in timeslot ( )
    A) 32 B) 16
    C) 31 D) 0
12. In an E1 frame, alarms & supervisory info is transmitted in timeslot ( )
    A) 32 B) 16
    C) 31 D) 0

13. PCM system uses which line coding technique ( )

A) NRZ-M B) Manchester

C) NRZ D) HDB3

14. Duration of an E1 multi frame is _____ ms ( )

A) 2 B) 3.9

C) 125 D) 5.9

15. PCM mux equipment conforms to ITU-T recommendation ( )

A) G.703 B) G.711

C) G.712 D) All the above

16. By enabling two aggregate 2048 Kbps links, the programmable mux acts as ( )

A) Drop-insert mux B) Terminal mux

17. By disabling one aggregate 2048 Kbps link, the programmable mux acts as ( )

A) Drop-insert mux B) Terminal mux

18. A digital multiplexer converts ( )

A) Parallel to serial B) Serial to serial

C) Serial to parallel D) Parallel to parallel

19. A 30 channel PCM has a bit rate of ( )

A) 2048 Mbps B) 2048 Kbps

C) 20.48 Mbps D) 2.048 Kbps

20. Channel capacity of E1 is ( )

A) 480 B) 120

C) 30 D) 1920

21. The bit rate of E1 is ( )

A) 8448 Kbps B) 2048 Kbps

C) 34368 Kbps D) 139264 Kbps

22. The sub-rack of WEBFIL Mux has -------- slots for modules ( )

A) 12 B) 14

C) 10 D) 13

23. In WEBFIL Mux, Slot-12 & Slot-13 have equal access to timeslots ( )

A) 15 & 16 B) 1 & 16

C) 2 & 3 D) 30 & 31

24. In WEBFIL Mux, clock setting is done in _____ module ( )

A) NIM B) Tributary

C) Subscriber D) Data

25. In WEBFIL Mux, NMS accesses equipment through _____ connector ( )

A) RJ11 & DB9 B) RJ45 & RG58

C) DB9 & RJ45 D) RG58 & RJ11

26. In WEBFIL Mux, slot no.10 is allotted to _____module ( )

A) Power supply B) Voice only

C) Voice/Data D) Data only

27. In WEBFIL Mux, no. of cross-connect tables available are ( )

A) 5 B) 2

C) 6 D) 4

28. In WEBFIL Mux, station ID is set in _____ module ( )

A) NIM B) Tributary

C) Subscriber D) Data

29. In WEBFIL Mux, master/slave setting is done in _____ module ( )

A) NIM B) Tributary

C) Subscriber D) Data

30. In WEBFIL Mux, Drop/Insert or End Terminal is set in _____ module ( )

A) NIM B) Tributary

C) Subscriber D) Data

31. In WEBFIL Mux, Internal/External NMS setting is done in _____ module ( )

A) NIM B) Tributary

C) Subscriber D) Data

32. In WEBFIL Mux, slot no.3 is allotted to _____ module ( )

A) NIM B) Tributary

C) Power supply D) Voice

33. In WEBFIL Mux, slot no.4 is allotted to _____module ( )

A) NIM B) Tributary

C) Power supply D) Voice

34. In WEBFIL Mux, slot no.1 is allotted to _____module ( )

A) NIM B) Tributary

C) Power supply D) Voice

35. In Puncom VMUX-0100, control circuit is configured in _____ mode ( )

A) Point-to-point B) Conference

C) Semi-conference

36. In Railways, PD-Muxes are configured in _____ topology ( )

A) Mesh B) Linear

C) Star D) Ring

37. PD-Mux requires input level of ( )

A) E1 B) E3

C) E2 D) E4

38. LPC card is available in _____ mux ( )

A) Webfil mux B) Puncom mux

C) Nokia mux D) All

39. In WEBFIL Mux, _____ is a remote related alarm ( )

A) AIS B) BER

C) RMA D) None

40. In WEBFIL Mux, output voltages of PSU card are ( )

A) +5V, ±12V, ±80V B) ±5V, ±10V, +80V

C) +5V, ±10V, +80V D) None

ANSWER KEY

1	2	3	4	5	6	7	8	9	10
b	a	b	b	a	d	c	c	c	b
11	12	13	14	15	16	17	18	19	20
b	d	d	a	d	a	b	a	b	d
21	22	23	24	25	26	27	28	29	30
d	d	d	b	a	c	d	a	b	b
31	32	33	34	35	36	37	38	39	40
b	a	b	c	b	b	a	b	a	c

EMERGENCY COMMUNICATION

1. Emergency control communication socket is provided at every ( )
   a) 1000 mts b) 100 mts
   c) 915 mts d) None

2. Emergency control communication circuit is monitored at HQ by ( )
   a) Engineering controller b) Traction Power controller
   c) Train loco controller d) S&T controller

3. Emergency control communication socket has six pins in which Pin no 1 & 6 is for ( )
   a) Trans pair b) Receive pair
   c) Signalling pair d) Auto phone

4. Emergency control communication socket has six pins in which Pin no 2 & 5 is for ( )
   a) Trans pair b) Receive pair
   c) Signalling pair d) Auto phone

5. Emergency control communication socket has six pins in which Pin no 3 & 4 is for ( )
   a) Trans pair b) Receive pair
   c) Signalling pair d) Auto phone

6. Phone provided in Emergency socket is ( )
   a) PT set b) Control phone
   c) Selective calling phone d) Magneto phone

7. Mobile Phone SIM used in ART for FCT are ( )
   a) Air tel b) JIO
   c) Idea d) All

8. VHF frequency range is ( )
   a) 30 Khz to 300 Khz b) 20 Hz to 20 Khz
   c) 30 Mhz to 300 Mhz d) 300 Mhz to 3000 Mhz

9. 25 watts VHF sets are provided at ( )
   a) All way stations b) Intermediate stations
   c) Important stations d) All the above

10. 5 watts VHF set are provided to ( )
    a) Driver and Guard of trains b) All department staff
    c) Both d) None

11. Working voltage of PT set ( )
    a) 6 V DC b) 3 V DC
    c) 12 V DC d) 1.5 V DC

12. Working voltage of 25 watts VHF set ( )
    a) 18 V DC b) 7.5 V DC
    c) 12 V DC d) 24 V DC

13. VHF set operates on _____ mode of operation ( )
    a) Simplex b) Semi duplex
    c) Duplex d) Triplex

14. Distance covered by the 25 watts VHF set is ( )
a) 25 Kms b) 5 Kms
c) 10 Kms d) 15 Kms

15. Distance covered by the 5 watts VHF set is ( )
a) 4-6 Kms b) 6-8 Kms
c) 8-10 Kms d) 2-4 Kms

16. Duty of TCM when reaches the derailment spot ( )
a) To provide Auto phone b) To provide PT set
c) To provide Magneto phone d) All the above

17. INMARSAT phone is available in ( )
a) ART b) MRV
c) Both d) None

18. FCT available in ART has _____ SIMs of different service providers ( )
a) 1 No b) 2 Nos
c) 3 Nos d) 4 Nos

19. Minimum Horizontal distance of telephone post from the centre of the track is ( )
a) Height of the post + 5 feets b) Only 7 feets
c) Height of the post + 7 feets d) Only 5 feets

20. Number of Selective calling telephone sets should be available in ART ( )
a) 2 Nos b) 3 Nos
c) 5 Nos d) 4 Nos

21. FCT is a _____Router ( )
a) CDMA b) GSM
c) Both d) None

22. How many numbers of VHF 5 watts with 100% spare batteries will be available ( )
a) 10 Nos b) 20 Nos
c) 30 Nos d) 40 Nos

23. How many numbers of 500 mts FS cable drums is available in ART ( )
a) 4 Nos b) 10 Nos
c) 6 Nos d) 8 Nos

24. VHF set transmitting frequency and power are to be measured once in ( )
a) Three months b) Two months
c) a month d) None

25. VHF systems failure must be reported to controlling officer ( )
a) Daily b) Weekly
c) Monthly d) None

26. A temporary fixed danger signal consisting of red cloth supported at both ends with iron rod stretched across the line is called ( )
a) Hand signal b) Banner flag
c) Both d) None

27. The LED used in light weight PT set is ( )
a) Red colour b) White colour
c) Yellow colour d) Multi colour

28. _____Mbps input is given to Maple – 4c equipment ( )

a) 4 b) 2

c) 8 d) 32

29. Bandwidth supported for voice, video and data by V-SAT communication is ( )

a) 8 Mbps b) 4 Mbps

c) 2 Mbps d) 16 Mbps

30. Which frequency band is used for communication through V-SAT ( )

a) C – band b) Ku – band

c) Ext-C band d) None

ANSWER KEY

1	2	3	4	5	6	7	8	9	10
A	b	b	a	d	a	d	c	a	a
11	12	13	14	15	16	17	18	19	20
B	c	a	a	a	b	a	d	c	d
21	22	23	24	25	26	27	28	29	30
B	c	a	c	a	b	d	b	c	b

IP BASED VIDEO SURVEILLANCE SYSTEM

1. RDSO Specification of IP Based video surveillance system is ( )
   a. RDSO/SPN/TC/65/2019 Revision 5.0 b. RDSO/SPN/TC/64/2019 Revision 5.0
   c. RDSO/SPN/TC/65/2001 Revision 5.0 d. RDSO/SPN/TC/64/2010 Revision 5.0
2. Advantage of IP Based video surveillance system is ( )
   a. remote accessibility b. high image quality
   c. event management d. all of the above
3. Network cameras and video encoders have built-in features such as ( )
   a. video motion detection b. audio detection alarm
   c. active tampering alarm d. all of the above
4. Power over Ethernet (PoE) technology cannot be applied to ( )
   a. digital video system b. analog video system
   c. both a & b d. none
5. Type of RAID level used in IP based surveillance system is ( )
   a. RAID-2 b. RAID-3
   c. RAID-4 d. RAID-5
6. Video analytical software is used in ( )
   a. touch screen system b. IP based video surveillance system
   c. IVRS system d. IPIS system
7. Which one is the image capturing technology ( )
   a. charged couple device (CCD) b. complementary metal oxide semiconductor
   c. megapixel sensor d. all of the above
8. Wireless transmitter/receiver unit uses ____ unlicensed frequency band ( )
   a. 2.4 GHz b. 5.8 GHz
   c. both a & b d. none
9. When connecting a camera, when distance exceeds more than 90 mtrs ____cable is used ( )
   a. OFC b. CAT cable
   c. RG-11 cable d. None
10. Which is not the RDSO specification of layer-3 switch is ( )
    a. RDSO/SPN/S/83/2008 b. RDSO/SPN/TC/82/2008
    c. RDSO/SPN/TC/81/2008 d. ALL the above
11. RAID full form is ( )
    a. redundant array of independent disks b. redundant array of internal disks
    c. redundant array of integrated disks d. redundant array of inbuilt disks

12. Minimum hard disk capacity required for IP based Surveillance System ( )

a. 18TB b. 10 TB

c. 8 TB d. 36 TB

13. Network video recorder is used in ( )

a. digital video system b. analog video system

c. both a& b d. none

14. Minimum storage capacity of video files of IP based surveillance system ( )

a. 30 days b. 45 days

c. 15 days d. 60 days

15. Minimum capacity of UPS required for IP based surveillance system is ( )

a. 1 KVA b. 6 KVA

c. 10 KVA d. 16 KVA

16. Online UPS configuration required for IP based surveillance system is ( )

a. N+1 configuration b. N+2 configuration

c. N+3 configuration d. N+4 configuration

17. Integrated security system consists of ( )

a. CCTV Surveillance system with IP based cameras b. Under Vehicle Scanning System

c. Personal and X-ray baggage screening system d. all of the above

18. Video analytic software should have the following feature ( )

a. intrusion detection b. left object detection

c. overcrowding d. all of the above

19. Video Analytics and Face Recognition Software shall be deployed on ( )

a. Servers b. clients

c. desktop pc d. router

20. Provision for Viewing and Monitoring of Camera streams shall be provided at ( )

a. Divisional HQ b. any other centralized location

c. RPF / GRP thana/Post d. all of the above

21. Video surveillance system at stations should be installed at ( )

a. non-RE area only b. RE area only

c. both a & b d. none

22. NVR (Network Video Recorder) should support ( )

a. recording b. Replay

c. backup d. all

23. NVR records upto 100 Mbps of ( )

a. video only b. audio only

c. both a & b d. none

24. Type of alarm received by NVR from video servers to start a recording is ( )

a. motion detection b. video loss

c. trigger input d. all

25. Specification of Power cable used in IP based video surveillance system is ( )

a. 3core 2.5 sqmm b. 2 core 2.5 sqmm

c. 3 core 1.5 sqmm d. none

26. For connecting analog camera to video encoder ___ cable is used ( )

a. RG-11 b. RJ-45

c. RG-58 d. OFC

27. CAT cable supports a maximum distance of up to __ mtrs ( )

a. 100 mtrs b. 200 mtrs

c. 300 mtrs d. 500 mtrs

28. RG-11 cable supports a maximum distance of up to ___ mtrs ( )

a. 100 mtrs b. 200 mtrs

c. 350 mtrs d. 500 mtrs

29. Type of camera installed at platforms & foot over bridge is ( )

a. full HD bullet type IP colour camera b. full HD fixed dome type IP camera

c. Full HD P/T/Z IP colour camera d. all of the above

30. Intrusion detection feature generates alarm when ( )

a. People crossing the tracks at platform ends b. Object/ baggage left behind at platform

c. scene is over-crowded d. all of the above

ANSWER KEY

1	2	3	4	5	6	7	8	9	10
a	**d**	**d**	**a**	**b**	**d**	**d**	**c**	**a**	**D**
11	12	13	14	15	16	17	18	19	20
a	**a**	**a**	**a**	**b**	**a**	**d**	**d**	**a**	**D**
21	22	23	24	25	26	27	28	29	30
c	d	c	d	a	a	a	c	a	A

OPTICAL FIBER COMMUNICATION

1. Light is composed of elementary particle called ( )
   a) Electron b) Proton
   c) Photon d) Neutron
2. Primary properties of light are ( )
   a) Wavelength b) Polarization
   c) Frequency d) All
3. Optical fibers accept _____ signals only ( )
   a) Bipolar b) Unipolar
   c) Any polarity d) None
4. The main drawback of optical fiber as a communication medium is that ( )
   a) Tapping is difficult b) Low attenuation
   c) High cost d) High EMI/EMC
5. Transmission loss of optical fiber at a wavelength of 1550 nm is ___ dB/Km ( )
   a) 2.5 b) 0.25
   c) 0.025 d) 25
6. Transmission loss of optical fiber at a wavelength of 1310 nm is ___ dB/Km ( )
   a) 0.35 b) 3.5
   c) 2.5 d) 0.25
7. In step index fiber _____ ( )
   a) Refractive index remains constant throughout the core
   b) Decreases to some value at the core-cladding interface
   c) Remains constant throughout the cladding
   d) Both a & b
8. In _____ the refractive index of the core varies the parabolic rule up to the core-cladding interface and then remains constant throughout the cladding ( )
   a) Graded index fiber b) Step index fiber
   c) NDSF d) NZDSF
9. The number of modes that can propagate in fiber is a function of numerical aperture, core diameter and _____ ( )
   a) Wavelength of light b) Refractive index
   c) Velocity of light d) None
10. Mode-Field Diameter (MFD) defines the _____ ( )
    a) Diameter of the core b) Size of the power distribution
    c) Diameter of the cladding d) Size of the buffer thickness

11. Refractive index of glass is ( )

a) 1.5 b) 1.33

c) 1.0 d) 3.5

12. Mode is an available distribution of electromagnetic field in __ to the direction of light Propagation ( )

a) A plane transverse b) A plane longitudinal

c) Both transverse & longitudinal planes d) None of the above

13. Multimode fiber is best designed for _____ transmission distances ( )

a) Longer b) Shorter

c) Medium d) Very long

14. Cut-off wavelength of a SM fiber is greater than _____ nm. ( )

a) 1310 b) 1260

c) 1450 d) 1550

15. Mode field diameter of SM fibre is _____ micrometers. ( )

a) 9.3 b) 12

c) 125 d) 6

16. Scattering and absorption of light signal cause _____. ( )

a) Total internal reflection b) Attenuation

c) Gain to the signal d) Dispersion

17. Impurities and irregularities in the physical construction of optical fiber cause ( )

a) Scattering b) Absorption

c) Total internal reflection d) Four wave mixing

18. Rayleigh's scattering is due to _____ present in the silica matrix. ( )

a) Water vapors b) Metal ions

c) OH^- ions d) H^+ ions

19. Scattering limits the use of wavelengths below ___ nm in optical fiber ( )

a) 1310 b) 1550

c) 800 d) 650

20. The hydroxyl ions and impurities present in the silica are the reasons for _of light signals. ( )

a) Bending b) Scattering

c) Absorption d) Dispersion

21. An attenuation of 3 dB corresponds to __ % reduction in original power. ( )

a) 10 b) 30

c) 50 d) 3

22. Inter modal dispersion present in ( )

a) Only in SM fibers b) Only in MM fibers

c) Both SM & MM fibers d) Cannot be said

23. The Tensile strength is of the order of _____ ( )

a) 4400 to 6000 kg/cm² b) 44000 to 60000 kg/cm²

c) 440000 to 600000 kg/cm² d) 440000 to 600000 kg/mm²

24. The normal optic fiber cable drum length is _____. ( )

a) 2 Km b) 3 Km

c) 1 Km d) 4 Km

25. 12-fiber armoured optic fiber cable can be used for _____ laying. ( )

a) Underground as well as for aerial b) Only Underground

c) Only Aerial d) None

26. The cladding thickness is _____ ( )

a) 125 μm b) 250 μm

c) 500 μm d) 750 μm

27. Primary coating (or buffer) thickness is _____ ( )

a) 125 μm b) 250 μm

c) 500 μm d) 750 μm

28. Typical thickness of the sheath in OFC is ( )

a) 0.5 mm b) 1.0 mm

c) 1.5 mm d) 2.0 mm

29. Acronym OTDR stands for ( )

a) Optical Time Domain Reflectometer b) Optical Transmission Drop Receiver

c) Optical Test Data Recorder d) Optical Time Delay Recorder

30. An OTDR is used for measuring ( )

a) Fiber attenuation b) Splice loss

c) Optical return loss d) All of the above

31. The OTDR measures the distance to the faults in fiber by ( )

a) Measuring round-trip time b) Measuring amplitude loss

c) Measuring wavelength shift d) Measuring polarization

32. The dead zone in OTDR is caused by ( )

a) Rayleigh scattering b) Fresnel reflection

c) Attenuation d) Splice loss

33. Typical pulse width range in OTDR is ( )

a) 10 ns to 1 μs b) 100 ns to 10 μs

c) 1 μs to 20 μs d) 10 μs to 100 μs

34. Dynamic range of OTDR is expressed in ( )

a) ns b) μs

c) dB d) km

35. For longer fiber length measurement, OTDR requires ( )

a) Lower pulse width b) Higher pulse width

c) Higher repetition rate d) None

36. Fresnel reflection occurs at ( )

a) Fusion splice b) Mechanical splice

c) Fiber connector d) All of the above

37. Fiber joint loss is measured in ( )

a) Meters b) Decibels

c) Microns d) Nanoseconds

38. Typical splice loss in a good fusion splice is ( )

a) 0.01 to 0.05 dB b) 0.1 to 0.2 dB

c) 0.2 to 0.5 dB d) 0.5 to 1.0 dB

39. A connector is used to ( )

a) Join two fibers permanently b) Connect two fibers temporarily

c) Reduce attenuation in fiber d) Prevent dispersion in fiber

40. Commonly used optical fiber connectors are ( )

a) SC b) FC

c) ST d) All of the above

41. Return loss in a good connector is about ( )

a) 10 dB b) 20 dB

c) 35 dB d) 55 dB

42. The device which converts optical signal into electrical signal is ( )

a) Laser diode b) LED

c) Photo diode d) Optical amplifier

43. Optical transmitters are generally ( )

a) Laser diodes or LEDs b) Photodiodes

c) PIN diodes d) OTDRs

44. The principle of operation of LED is based on ( )

a) Stimulated emission b) Spontaneous emission

c) Absorption d) Scattering

45. Laser diode operation is based on ( )

a) Stimulated emission b) Spontaneous emission

c) Absorption d) Scattering

46. Typical spectral width of LED is ( )

a) 1 nm b) 10 nm

c) 30–60 nm d) 100 nm

47. Typical spectral width of Laser diode is ( )

a) < 1 nm b) 10 nm

c) 30–60 nm d) 100 nm

48. The optical output of a Laser diode is ( )

a) Coherent b) Incoherent

c) Random d) Dispersed

49. The optical output of an LED is ( )

a) Coherent b) Incoherent

c) Monochromatic d) Polarized

50. The efficiency of Laser diode compared to LED is ( )

a) Lower b) Higher

c) Same d) None

51. Typical operating wavelength of LED in optical communication is ( )

a) 650 nm b) 850 nm

c) 1310 nm d) All of the above

52. Typical operating wavelength of Laser diode in optical communication is ( )

a) 1310 nm b) 1550 nm

c) Both a & b d) None

53. Responsivity of a photodiode is expressed in ( )

a) Volts b) Watts

c) A/W d) dB

54. The photodiode which operates with reverse bias is ( )

a) PIN b) Avalanche

c) Both a & b d) None

55. The time taken by photodiode to respond to optical signal is called ( )

a) Rise time b) Fall time

c) Response time d) Recovery time

56. The speed of photodiode depends on ( )

a) Capacitance b) Bias voltage

c) Carrier transit time d) All of the above

57. Avalanche photodiode provides ( )

a) Internal gain b) High speed

c) High sensitivity d) All of the above

58. Dark current in a photodiode is due to ( )

a) Absence of light b) Thermal generation of carriers

c) Excess bias voltage d) High responsivity

59. Optical switches are used for ( )

a) Protection b) Restoration

c) Routing d) All of the above

60. WDM stands for ( )

a) Wavelength Division Multiplexing b) Wideband Division Multiplexing

c) Wireless Data Multiplexing d) None

61. The device used to combine optical signals of different wavelengths is ( )

a) Multiplexer b) Demultiplexer

c) Optical coupler d) Optical switch

62. The device used to separate multiplexed optical signals is ( )

a) Multiplexer b) Demultiplexer

c) Optical coupler d) Optical switch

63. Optical add-drop multiplexer is used in ( )

a) SONET/SDH b) PDH

c) TDM d) FDM

64. Dispersion compensating fiber is used to ( )

a) Reduce attenuation b) Reduce dispersion

c) Reduce scattering d) Increase non-linearity

65. Chromatic dispersion depends on ( )

a) Wavelength b) Refractive index

c) Material properties d) All of the above

66. Optical isolator is used to ( )

a) Allow light in both directions b) Block backward propagating light

c) Block forward propagating light d) Amplify light

67. Optical circulator is a ( )

a) 2-port device b) 3-port device

c) 4-port device d) 1-port device

68. Optical coupler is a ( )

a) Passive device b) Active device

c) Amplifier d) Detector

69. Typical insertion loss of 1x2 coupler is about ( )

a) 0.1 dB b) 0.5 dB

c) 3.5 dB d) 7 dB

70. The minimum bending radius of optical fiber cable is typically ( )

a) 10 × OD b) 20 × OD

c) 30 × OD d) 50 × OD

ANSWER KEY

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
c	**d**	**b**	**a**	**b**	**a**	**d**	**a**	**a**	**b**	**a**	**a**	**b**	**B**	**a**	**b**	**a**	**b**	**c**	**c**
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
c	**b**	**b**	**b**	**b**	**d**	**d**	**c**	**a**	**b**	**c**	**c**	**c**	**C**	**c**	**a**	**a**	**a**	**a**	**b**
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
c	**b**	**a**	**b**	**c**	**b**	**b**	**d**	**c**	**c**	**d**	**a**	**a**	**D**	**b**	**d**	**a**	**a**	**c**	**a**
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
a	**a**	**b**	**a**	**a**	**d**	**d**	**d**	**d**	**b**										