

BIT BANK FOR

TECH-III- SELECTION

UNDER 25% LDCE

QUOTA

SOUTH CENTRAL RAILWAY

SECUNDERABAD DIVISION

ELS/LGD

SOUTH CENTRAL RAILWAY

SECUNDERABAD DIVISION SYLLABUS FOR PROMOTION

AS TECH-III IN PB-1 Matrix of VII PC 1900 GP IN TRS ORGANISATION through LDCE Quota.

PART-A

A) **Basics of electricity**

- 1) Study of Electricity, Ohms Law, Magnetism, Electromagnetic induction, Flemings R.H. Rule, L.H. Rule, Lenz's Law, self inductance, Mutual inductance, Study of AC circuits i.e., RL, RC, RLC Circuits, Series Resonance, Parallel resonance.
- 2) Measurements of Resistance, current voltage, power study of various types of meters and equipments used, Megger, diode tester, ammeter, Voltmeter etc., uses of shunts, multipliers.

B) **Importance of Earthing and Earth testing procedure:**

Why earthing is to be done, PIPE earthing, Plate earthing, Maintenance free earthing, Study of Earth testing procedure, insulation test for various equipments and testing of insulators.

A) **Electrical Safety and ACTS and Rules.** 1. Electricity act and safe rules and Shock treatment, first aid and use of Fire Extinguishers.

B) SIMPLE ARITHMETIC CALCULATIONS

E) ATTITUDE FOR THE TRADE APPLIED, KNOWLEDGE OF ELEMENTARY PRINCIPLES OF THE TRADE AND TOOLS USED IN TRADE.

PART-B

A) **Conventional Locomotives (WAG-5/7, WAM-4, WAP-4)**

1. DC Series Motors as Traction Motors: Study of Characteristics, Armature Reaction and Commutation Improvements for commutation and suitability of D.C. Series Motor for traction duty. Study of Traction Motor used in A.C. Locomotives WAP4 & WAG5/7 Maintenance, repairs, overhaul of Traction motors of Conventional Locomotives.
2. Study of Conventional Locomotive circuits i.e., Power circuits and control circuits, parameters of A.C. Circuits, Simple calculations, study of power supply arrangements of A.C. traction(Conventional Locomotives).
3. Study of current collection in A.C. Locomotive, study of roof equipments of A.C. Loco.
4. Study of Transformer principle, overhaul and maintenance of Transformers, Auto-Transformers, conditions for parallel operation of transformer, study of transformer used in A.C. Loco WAP4/5 & WAG5/7; Maintenance and overhauling tests to be conducted on the transformer, study of tap changer, operation method for voltage control, Testing of transformer.
5. Study of fuse protectors, switches and isolators, construction and working details of circuit breakers of A.C. Conventional Locos (DL).
6. Study of various types of contactors and relays, study of relays and contactors used in the A.C. Loco, Drum Contactors. Function of blow out coil and arc chutes.
7. Study of batteries, commissioning (initial charging) maintenance and reclamation and battery charging procedures.
8. Study rectification methods, filters, study of Silicon rectifier, smoothing reactor in the Loco study of semi-conductor devices, battery charger.
9. Safe working on the locomotive precautions to be taken, Fire preventive measures in the locomotive and study of fire fighting.

1. Study of circuit, analysis of WAP4 & WAG5/7 Locomotive i.e., study of circuits, cabling Index and other drawings.
2. Study of WAP-4 & WAG5/7 Bogie, wheel arrangements, suspension arrangements and all mechanical features like elements of Vibration, Oscillation, Damping devices, Elasticity etc.
3. Study of Sander gear and Brake rigging, various types of brake systems in Conventional Loco (WAG-7).
4. Study of Pneumatic circuitry of WAP-4 & WAG5/7, Study of various Pneumatic Valves, braking system (E-System).
5. Study of maintenance schedules for various equipment in the Conventional Locomotive, its periodicity.
6. Different lubricants used in WAG 5/7 & WAP 4 locomotives
7. Study of Conventional Locomotive, testing, engine fitness and troubleshooting procedure.
8. RDSO Modification and SMIs implementation and maintenance of various records of Conventional Locomotives.
9. Maintenance of records in PPO
10. Study of new equipments in Loco such as MPCS, SIV, VCD and WMUCS.
11. Study of DJ control Circuit. Study of various branches and trouble shooting of various branches in DJ control circuit of Locos both with SIV fitted Locos and Arno fitted Locos.

B) 3-Phase Locomotives (WAP-7, WAG-9)

1. 3phase induction Motors as Traction Motors: Study of Characteristics, use of 3phase induction motors for traction duty. Study of Traction Motor used in A.C. Locomotives WAP7 & WAG-9 Maintenance, repairs, overhaul of Traction motors of 3Phase Locomotives (WAG-9, WAP-7).
2. Study of 3Phase Locomotive circuits i.e., Power circuits and control circuits, parameters of A.C. Circuits, Simple calculations, study of power supply arrangements of A.C. traction(3phase Locomotives).
3. Study of current collection in 3Phase Locomotives, study of roof equipments of A.C. Loco.
4. Study of 3phase Locomotive Transformers, overhaul and maintenance of Transformers, Auto-Transformers, conditions for parallel operation of transformer, Maintenance and overhauling tests to be conducted on the transformer, testing of transformer.
5. Study of Auxiliary converter circuits and components and Auxiliary power supply and load sharing between BURs during normal condition and during isolation of one BUR.
6. Study of Transformer cooling circuit and function of TFP MPH.
7. Study of SR coolant circulation and function of SRMPH.
8. Machine room layout of 3phase locomotives. Locations of various equipment in Machine room.
9. Study of various types of contractors and relays, study of relays and contractors used in the 3phase Locomotives.
10. Study of batteries in 3phase locomotives, commissioning (initial charging), maintenance and reclamation and battery charging procedures.
11. Safe working on the 3phase locomotive; precautions to be taken, Fire preventive measures in the locomotive and study of fire fighting.
12. Study of circuit, analysis of WAG-9 Locomotives i.e., study of circuits, cabling Index and other drawings.

1. Protective functions in three phase locomotive(ABB document 3EHP 541526), working of VCD, Failure mode operation, Inching mode operation, Constant speed control, Traction Interlock, SR Interlock and Indication of faults using BPFA & LSFI
2. Study of WAG-9 Bogie, wheel arrangements, suspension arrangements and all mechanical features like elements of Vibration, Oscillation, Damping devices, Elasticity i.e., Springs and dampers etc.
3. Study of Sander gear and Brake rigging, various types of brake systems in 3phase Loco.
4. Different lubricants used in WAP 7/ WAG9 locomotives
5. Study of Pneumatic circuitry of WAG-9, Study of various Pneumatic Valves, braking system (E-70 System and CCB 2.0 – PTDC mode of working in CCB 2.0 locomotive. Different type of brakes available in WAG9 and WAP7 locomotives.
6. Study of maintenance schedules for various equipment in the 3phase Locomotive, its periodicity.
7. Study of 3phase Locomotives, testing, engine fitness and troubleshooting procedure.
8. RDSO Modification and SMIs implementation and maintenance of various records for 3phase Locomotives.
9. Study of Electronic devices i.e., IGBT and GTOs as control switches in power circuitry and auxiliary circuitry of 3phase Locomotives.
10. RTIS, TPWS, CAB-AC, Push-pull operation, MU-operating of WAG9.
11. Different types of contactors used in 3 phase locomotives126.7/1, 126.7/2, 126.6, 126, 218, 130.1 & 136.4
12. Various repeatedly appearing DDS messages –S/R interlock auto brake, S/R interlock loco brake, Error tacho generator, S/R interlock MR low, ACP/train part, Brake electronic failed, 8.1stuck on/off, 8.41 stuck off/on, Low pressure Pan.
13. working of harmonic filter and importance of 8.1, 8.2 & 8.41.
14. Various type of bearing used in 3 phase locomotives, minimum requirement of air flow levels permitted as per RDSO SM1 of 3 phase locomotives,
15. Loco CAB changing procedure with E 70 & CCB.
16. safety items of electric locomotives, explain any 3.
17. Trouble shooting in cooling mode
18. Various types of transformers used in 3 phase locomotives.
19. Locomotive dimensions
20. Various type of SPMs and their issues
21. Primary, secondary, vertical and lateral clearances, wheel wear management,
22. Working of DBC & EBV.
23. Different types of VCU available – Hotel load convertor (HOC) , Harmonic filter working principles (8.1,8.2, 8.41 contactors), E 70& CCB (PTDC).
24. S.C. Railway 76 point trouble shooting guide.
25. Calculation of AAC

PART –C

Rules and regulations about Official Language i.e., Hindi as Official Language.

PART-A(Basics of Electrical engineering) a) Basic

Electronics:

(1) The reverse current in a diode is of the order of

Options:[a] kA [b] mA [c] μ A [d] Zero

Answers: 1. Options B and C 2. Option C only 3. Option D only 4. Option A and D only Ans: 2

(1) The forward voltage drop across a diode is about...

[a] 2.5V [b] 3V [c] 10V [d] 0.7V Ans: D

(2) A semiconductor diode is used as

Options:[a] An amplifier [b] A Rectifier [c] An oscillator [d] A voltage regulator Answers:

1. Options A and C 2. Option B only 3. A, B, C and D 4. Option D only Ans: 2

(4) A semiconductor diode has

[a] One PN junction [b] Two PN junction [c] Three PN junction [d] Four PN junction Ans: A

(1) A semiconductor diode has forward resistance of order of ohms(Ω) Options:[a] kohms(K Ω) [b] 0.1 to 0.5 ohms [c] Mega ohms [d] milli ohms Answers:1. Option D only 2. Option B only 3. Options A, B, C and D 4. None of the above Ans: 2

(2) If the arrow of diode symbol is positive with respect to bar, then the diode is biased [a] Forward [b] Reverse [c] Either forward or reverse [d] None of the above Ans: A

(3) The leakage current in a diode is due to

Options:[a] Minority Carriers[b] Majority Carriers [c] Junction Capacitance [d] None of the above

Answers: 1. Options A, B, C 2. Option B only 3. Options A and B only 4. Option A only Ans: 4

(8) The DC resistance of a diode is its AC resistance

[a] Same as [b] More than [c] Less than [d] None of the above Ans: C

(9) An ideal diode is one which behaves as a perfect when forward biased

[a] Conductor [b] Insulator [c] Resistance material [d] None of the above

Ans: A

(10) If the temperature of the diode increases, then leakage current....

[a] Remains same [b] Decreases [c] Increases [d] Becomes zero

Ans: C

B) ELECTRICAL ENGINEERING BASICS OBJECTIVE QUESTIONS WITH ANSWERS

[1] Electrostatics is a branch of electricity concerned with

(a) Energy flowing across a gap between conductors (b) Charges at rest (c) Charges in motion (d) Energy in the form of charges

Answer: B

[2] Four 2 F capacitors are connected in series. The equivalent capacitance is

(a) 8 F (b) 0.5 F (c) 2 F (d) 6 F Ans: B

[3] State which of the following is false.

The capacitance of a capacitor

- (a) Is proportional to the cross-sectional area of the plates
- (b) Is proportional to the distance between the plates
- (c) Depends on the number of plates
- (d) Is proportional to the relative permittivity of the dielectric Ans:

B

[4] The capacitance of a capacitor is the ratio

- (a) Charge to potential difference between plates
- (b) Potential difference-between plates to plate spacing
- (c) Potential difference-between plates to thickness of dielectric
- (d) Potential difference-between plates to charge

Ans:B

[5] Which of the following statement is false?

- (a) An air capacitor is normally a variable type
- (b) A paper capacitor generally has a shorter service life than most other types of capacitor
- (c) An electrolytic capacitor must be used only on a.c. supplies
- (d) Plastic capacitors generally operate satisfactorily under conditions of high temperature Ans:A

[6] The potential difference-across a $10\mu\text{F}$ capacitor to charge it with 10mC is

- (a) 10V (b) 1 kV (c) 1V (d) 10V Ans: C

[7] The energy stored in a 10 uF capacitor when charged to 500V is (a)

- 1.25 mJ (b) 0.025 J (c) 1.25 J (d) 1.25 C Ans: C

[8] The capacitance of a variable air capacitor is at maximum when

- (a) The movable plates half overlap the fixed plates
- (b) The movable plates are most widely separated from the fixed plates
- (c) Both sets of plates are exactly meshed
- (d) The movable plates are closer to one side of the fixed plate than to the other

Ans: C

[9] The unit of magnetic flux density is the:

- (a) Weber (b) Weber per metre (c) Ampere per metre (d) Tesla

Ans: D

[10] The charge on a 1pF capacitor when the voltage applied to it is 10 kV is (a)

- $100\text{ }\mu\text{C}$ (b) $0.1\text{ }\mu\text{C}$ (c) $0.01\text{ }\mu\text{C}$ (d) $0.001\text{ }\mu\text{C}$ Ans: C

[11] Four 2 F capacitors are connected in parallel. The equivalent capacitance is (a) 8 F

- (b) 0.5 F (c) 2 F (d) 6 F Ans: A

[12] In a series a.c. circuit the voltage across a pure inductance is 12V and the voltage across a pure resistance is 5V . The supply voltage is (a) 13V (b) 17V (c) 7V (d) 2.4V Ans: A

[13] Inductive reactance results in a current that

- (a) Leads the voltage by 90deg (b) Is in phase with the voltage (c) Leads the voltage by 45deg (d) Lags the voltage by 90deg

Ans: D

[14] A 10 Ω resistor is connected in parallel with a 15 Ω resistor and the combination in series with a 12 Ω resistor. The equivalent resistance of the circuit is: (a) 37 Ω (b) 18 Ω (c) 27 Ω (d) 4 Ω Ans: B

[15] The equivalent resistance when a resistor of $(1/3)$ Ω is connected in parallel with a $(1/4)$ Ω resistance is: (a) $1/7$ Ω (b) 7 Ω (c) $1/12$ Ω (d) $3/4$ Ω Ans: A

H) Electrical Safety:

Multiple Choice (circle the correct answer)

1. A person qualified to perform electrical work must possess
 - a. Skills/techniques to distinguish live parts from other parts of electrical equipment.
 - b. Skills and techniques to determine the nominal voltage of exposed live parts.--
 - c. Knowledge on the use of PPE, insulating and shielding materials, and insulated tools.
 - d. All of the above.

2. Electrical injuries are commonly caused by:
 - a. Unsafe equipment or installations
 - b. An unsafe environment
 - c. Unsafe work practices.
 - d. All of the above

3. Current flow from hand to hand is called
 - a. Step potential
 - b. Touch potential
 - c. Amperage
 - d. None of the above.

True or False

1. Conductors offer little resistance to the flow of electric current.
2. Cord and plug equipment should have a three prong plug or be double insulated.
3. Only authorized employees are permitted to work on electrical systems and equipment.
4. Electrical shock can cause damage to tissue, muscle, and internal organs.
5. The longer a person is exposed to an electrical shock (current), the greater the risk of serious injury.
9. Grounding conductors are usually black in color.
10. Ground fault circuit interrupters compare the amount of current going into electrical equipment and the amount of equipment returning.--

Answers

1. D
2. D
3. B
4. T
5. T
6. T
7. T
8. T
9. F (Green)
10. T

Numerical Problems

What would come in the place of the question mark (?) in the following questions ?

1. $15\frac{1}{3} + \frac{3}{4}$ of 425 + ? = 400

- (1) $66\frac{1}{3}$ (2) $67\frac{2}{3}$ (3) $66\frac{2}{3}$ (4) None of these

1. $140\sqrt{?} + 315 = 1015$ (1) 5 (2) 16 (3) 25 (4)

36

2. $(12.19 - 0.22) + 0.03 = ?$ (1) 0.399 (2) 39.9 (3) 3.99 (4)

None of these

3. 45% of ? + 30% of 90 = 30% of 210 (1) 120 (2) 80 (3)

60 (4) 90

4. $88044 \div 44 + 17 \times 23 = ?$ (1) 2392 (2) 2291 (3) 592

(4) 412

5. $\frac{4}{5} + 2\frac{1}{5} + 2\frac{2}{3} = ?$ (1) $6\frac{1}{5}$ (2) $6\frac{1}{3}$ (3) $6\frac{1}{15}$ (4) None of

these

7. $\frac{(11)^2 - (4)^2 \times 2}{4 \times 2} = ?$

4X2

- (1) 11 (2) $1\frac{1}{4}$ (3) $11\frac{1}{8}$ (4) 121

1. $\frac{9}{4} - \frac{?}{4} = 2$ (1) 1 (2) 4 (3) 8 (4) 18

2. $40.07 \times 1.43 = ?$ (1) 57.31 (2) 57.301 (3) 5.7301 (4) None of

these

3. $852.2109 + 106.78 - 59.157 = ?$ (1) 899.8339 (2) 889.8339 (3) 899.9833

(4) None of these

4. In the following series, a wrong number is given. Find out that number. 2, 3, 6, 15, 45, 202.5,

630 (1) 3 (2) 6 (3) 15 (4) 202.5

1. Recurring part of non-terminating recurring decimal is called

2. The number of digits in the recurring part is called

3. In $\frac{1}{3} = 0.3$ Period = ? Periodicity = ?

4. $\sqrt{324} = ?$ (a) 18 (b) 14 (c) 28 (d) 38

5. $\sqrt{3} = ?$ (a) 1.732 (b) 1.6 (c) 4 (d) 3

1. Find value of Z, using formula $X^2 + Y^2 = Z^2$, if $X=4$ & $Y=3$ (a) 4 (b) 5 (c) 3 (d) 8
2. Following is a set of Natural Number. (1) $N = (1,2,3,\dots)$ (2) $N = (0,1,2,3,\dots)$ (3) $N = (-1,-2,-3,\dots)$ (4) None
3. $\sqrt{2}$ is a 1) Natural Number (2) Rational Number (3) Irrational Number (4) Whole Number
4. 4:9 can be written as 2:3 (a) True (b) False
5. If price of 3 books is 12, then price of 6 books should be (a) 24 (b) 36 (c) 30 (d) 20
6. If purchasing cost is Rs.200/- and of selling price is Rs.220/-, then profit is (a) 10% (b) 30% (c) 20% (d) 15%
7. If one keeps some money in bank, then which one of the following give him maximum Profit? (a) Simple Interest (b) Compound Interest (c) Both (d) None
24. Which one is correct? (a) Distance = Speed \times Time (b) Distance = Speed/Time (c) Distance=Time/speed (d)None
25. Perimeter of a square with its side 'a' units (a) 3a (b) a (c)5a (d) 4a
26. LCM stands for (a)Low cost maintenance (b)Least Common Multiple (c)Least cost multiple (d) None
1. GCM Stands for (a)Greatest Cost Multiple (b)Greatest Cost Minus (c)Greatest Common Multiple (d)None
2. $3 + (4(5-1))-4 =$ (a) 15 (b) 16 (c) 0 (d) 1
3. $8 + (4(3 \times 4 \div 2)) + 1 =$ (a) 30 (b) 20 (c) 23 (d) 33
4. The angle between two sides of a square is (a) 10 Deg (b) 45 Deg (c) 90 Deg (d) None
1. The two parallel line cut each other at (a) Crossing point (b) Inversion point (c) Infinity (d) None
2. $3 + (2 + 4(8 - 3 \times (6 \div 3)) + 1) \div 5 =$ (a) 5 (b) 55 (c) 60 (d) 58
1. Angle between two parallel line is (a) 90 Deg (b) 45 deg (c) 0 (d) None
2. $(\sqrt{36} + \sqrt{25} + \sqrt{49}) - 8 =$ (a) 12 (b) 14 (c) 10 (d) 16
3. If $x = 4$ & $y=5$, the value of $(x+y)^2 = ?$ (a) 99 (b) 81 (c) 45 (d) 54

1. 4
2. 3
3. 4
4. 2
5. 1
6. 4
7. 3
8. 1
9. 4
10. 1
11. 4
12. Period
13. periodicity
14. 3 & 1

16	a
.	
17.	b
18.	1
19.	3
20	b
.	
21	a
.	
22	a
.	
23	b
.	
24	a
.	
25	d
.	
26	b
.	
27	c
.	
28	a
.	
29	d
.	
30	c
.	
31	c
.	
32	d
.	
33	c
.	

34	c
.	
35	b
.	

Answers for Numerical problems

General Knowledge

Note: Question on current affair will be related to latest news.

1. What is the minimum age laid down for a person to seek election to the Lok Sabha?
(1) 18 years (2) 21 years (3) 25 years (4) 30 Years
2. The group of people benefited by inflation is
(1) creditors (2) debtors (3) salaried class (4) wage earners
1. First 'talkie' feature film made and shown in India (1) Alam Ara (2) Raja Harischandra (3) Pundalik (4) Shakuntala
2. In which of the following do red blood cells originate?
(1) Bone marrow (2) Brain (3) Ligaments (4) Muscles
1. "Binary codes" as used in computers are codes made up of which of the following two numbers? (1) 0 and 9 (2) 1 and 3 (3) 0 and 1 (4) 9 and 1
2. Which of the following is NOT a computer language? (1) IBM (2) PASCAL (3) COBOL (4) FORTRAN
7. If the reading of the barometer starts falling rapidly all of a sudden, the indication should be that the weather going to be
(1) very hot (2) very stormy (3) fully of cold waves (4) calm & quiet, but hot
8. Which of the following payment instruments introduced by the banks is known as plastic Money?
(1) Bearer cheques (2) Credit cards (3) Demand drafts (4) Gift cheques
9. Jaspal Rana has distinguished himself in which one of the following sports events?
(1) Swimming (2) Weight lifting (3) Shooting (4) Archery
1. The Central Rice Research Institute is located in which of the following cities?
(1) Calcutta (2) Hyderabad (3) Chennai (4) Cuttak
2. Which among the following is a classic dance from Kerala? (1) Kathak (2) Kathalaki (3) Bharata Natyam (4) Kuchipudi
3. Which of the following is the Headquarters of the World Bank?
(1) Washington (2) Hague (3) Paris (4) London
4. India-2020 – a vision for the new millennium is a new book which has attracted readers Attention. Who wrote this book?
(1) Kushwant Singh (2) R.K.Laxman (3) APJ Abdul Kalam & Y.S.Rajan (4) V.S.Naipaul
1. Kalpana Chawla – one fame as (1) Musician (2) Hockey player
(3) Scientist (4) Astronaut
2. Which of the following is the best conductor of electricity? (1) Copper (2) Silver (3) Iron (4) Steel
3. Which of the following is not a name associated with Computer?
(1) Pentium (2) HCL (3) Wipro (4) IMAI

1. Which of the following gases used for the purification of water? (1)
Oxygen (2) Ammonia (3) Chlorin (4) Carbon Di Oxide
2. Which of the following does not come as a product of vehicular pollution? (1)
Sulphur dioxide (2) Nitrogen oxide (3) Hydro carbons (4) Hydrogen peroxide
3. Which of the following countries has the 2nd largest rail net work in the world? (1)
India (2) USA (3) Russia (4) China

1. Citrus fruits are considered a rich source of which of the following vitamins? (1)
Vitamin-A (2) Vitamin-B (3) Vitamin-C (4) Vitamin-D
2. Arjun awards are given for excellence in which of the following fields? (1) Arts
(2) Sports (3) Social Service (4) Economics

1. The term of Off- SIDE is related to the game of (1) Basket ball
(2) Foot ball (3) Volley ball (4) Badminton
2. Saranath, a tourist spot which contains the ruins of Buddhist temple is located Near
which place? (1) Bhopal (2) Varanasi (3) Patna (4) Allahabad
3. Bismillah Khan is known for which of the following instruments? (1)
Tabla (2) Flute (3) Shehnai (4) Violin
4. The national fire service college is situated in which city?
(1) Chandigarh (2) Bhopal (3) Faridabad (4) None of these
5. The term biopsy is associated with which of the following field of study? (1)
Aeronautics (2) Social Science (3) Econometrics (4) Medical Science
6. "APSARA" is the name of the India's first (1) Nuclear Reactor (2) Helicopter (3)
Ground battle tank (4) Railway Locomotive
7. Numismatics is the study of (1) Insects (2)
Numbers (3) Stamps (4) Coins
8. "Megabytes" is the unit of measuring which of the following? (1) Weight of
valuable metals like Gold & Silver (2) Intensity of Earthquakes (3) Density of
population (4) Memory capacity of Computer

1. Which of the following explains that windows 2000 is (1)
Operating system (2) New Word Processor (3) Financial
package (4) New Computer language
2. Indian born scientist "Subramanian Chandra Sekhar" had won noble prize for his in the
area of (1) Nuclear medicine (2) Bio chemistry (3) Astro Physics (4) Genetic Engg.
3. Which of the following gases makes the major preparation of Air? (1)
Carbon dioxide (2) Argon (3) Nitrogen (4) Oxygen
4. Which of the following part of sun light makes a solar cooker hot? (1)
Ultraviolet (2) Red light rays (3) Infra red (4) Cosmic rays

34. Central Building Research Institute is located at
(1) Durga Pur (2) Roorkee (3) Nagapur (4) Bangalore
1. The capital of Assam is (1) Shillang (2) Agartala (3) Ita Nagar (4) Dispur
2. The Chronological order of the three dynasties which ruled India is (1) Slave, Khilji, Tughlaq (2) Tughlaq, Slave, Khilji (3) Khilji, Tughlaq, Slave (4) Slave, Tughlaq, Khilji
37. The Autobiographical work "THE TUNNEL OF TIME" was written by
(1) R.K.Narayan (2) R.K.Lakshman (3) Morarji Desai (4) Nelson Mandela
38. Which of the following statements about Abraham Lincoln is incorrect?
(a) He abolished slavery in the BS
(b) He was 16th President of US © He was assassinated in 1865 (d) He was the first President of the US
1. The first navigator to sail round the world was (a) Marco Polo (b) Columbus (c) Amundsen (d) Magellan
2. Who was the first woman President of the Indian National Congress? (a) Annie Besant (b) Sarojini Naidu (c) Vijayalakshmi Pandit (d) None of these
3. In which of the following fields did Tenzing Norgay distinguish himself? (a) Boxing (b) Cycling (c) Mountaineering (d) Hockey
4. Aryabhata was India's renowned (a) Poet (b) Physicist (c) Mathematician (d) Medical Practitioner
5. The variation in duration of days and nights at a place is mainly because of
(a) the spherical shape of earth
(b) inclination of earth's axis towards orbit © the revolution of earth (d) none of these
44. Winds generally blow from areas of
(a) Low Pressure to those of high pressure
(b) High Pressure to those of low pressure © High Pressure to those of moderate pressure (d) Low Pressure to those of moderate pressure
1. Earthquakes & Volcanoes are associated with (a) Folded & Faulted regions (b) deep sea plains (c) plateau regions (d) coastal region
2. Days & Nights are caused by (a) Earth's rotation on its axis (b) Earth's revolution around Sun (c) Change in Sun's Temperature (d) Inclination of the earth's axis
47. Which of the following is the nearest to the earth?
(a) Sun (b) Mercury (c) Moon (d) None of these

48. Which planet is known as “ Evening Star”? (a) Saturn (b) Mercury (c) Venus (d) Jupiter
1. Ramanuja preached (a) Satya (b) Ahimsa (c) Gyana (d) Bhakti
 2. The capital of India was shifted from Calcutta to Delhi in (a) 1910 (b) 1911 (c) 1912 (d) 1913
 3. The first Muslim ruler of India was (a) Mahmud Ghazni (b) Muhammad Ghori (c) Babar (d) Muhammad Bin Tughlaq
 4. Nadir Shah invaded India in (a) 1705 (b) 1739 (c) 1801 (d) 1839
 5. Kalinga war changed the life of (a) Chandragupta Maurya (b) Ashoka the Great (c) Lord Buddha (d) Akbar
 6. Who was the Guru of Swami Vivekananda? (a) Dayanand Saraswati (b) Raja Raj Mohan Roy (c) Rama Krishna Paramahansa (d) None of these
 7. Bhakti Movement aimed at
 - (a) forming a correlation between Islam and Hinduism
 - (b) building of temples © introducing reform in the Hindu religion
 - (d) None of these
-
1. Gaya is associated with Lord Buddha, where he (a) was born (b) attained enlightenment (c) died (d) delivered the first sermon
 2. Who, of the following encouraged remarriage of the widows most? (a) Ahilya Bai (b) Raja Ram Mohan Roy (c) Gandhiji (d) None of them
 3. Which of the following places was known as centre of learning in ancient India? (a) Nalanda (b) Ujjain (c) Allahabad (d) None of these
 4. Who was the first woman ruler of India? (a) Noor Jehan (b) Razia Sultan (c) Chand Bibi (d) Mumtaz Mahal
 5. The Tenth Schedule of the Constitution of India relates to
 - (a) National Languages of India
 - (b) Administration of Scheduled and tribal areas © judicial Review (d) Anti – defection law

Answers to General Knowledge

- | | | |
|-----|---|-------|
| 1. | 3 | 51. b |
| 2. | 2 | 52. b |
| 3. | 1 | 53. b |
| 4. | 1 | 54. c |
| 5. | 3 | 55. a |
| 6. | 1 | 56. b |
| 7. | 2 | 57. b |
| 8. | 2 | 58. a |
| 9. | 3 | 59. b |
| 15 | | |
| 1. | 4 | 60. d |
| 2. | 2 | |
| 3. | 1 | |
| 4. | 3 | |
| 5. | 4 | |
| 6. | 2 | |
| 7. | 4 | |
| 8. | 3 | |
| 9. | 4 | |
| 10. | 1 | |
| 11. | 3 | |
| 12. | 2 | |
| 13. | 2 | |
| 14. | 2 | |
| 15. | 3 | |
| 16. | 4 | |
| 17. | 4 | |
| 18. | 1 | |
| 19. | 4 | |
| 20. | 4 | |
| 21. | 1 | |
| 22. | 3 | |
| 23. | 3 | |
| 24. | 3 | |
| 25. | 2 | |
| 26. | 4 | |
| 27. | 1 | |
| 28. | 2 | |
| 29. | d | |
| 30. | d | |
| 31. | a | |
| 32. | c | |
| 33. | c | |
| 34. | b | |
| 35. | b | |
| 36. | a | |
| 37. | a | |
| 38. | c | |

- 39. c
- 40. d
- 41. b
- 42.

Conventional Locomotives(WAG7) and Three phase Locomotives(WAG-9)

Choose the right answer.

1. Current is collected from OHE to A.C.loco through () (a) Transformer (b) circuit breaker (c) Pantograph (d) servo motor Ans: (C)
2. Taps on auto winding of TFP are provided for () (a) speed control (b) protection from surges (c) shorting of windings (d) avoiding overloading of TFP Ans: (a)
3. QOP relay is used to detect () (a) Earth fault in auxiliary circuit (b) Over current (c) Earth fault in power circuit (d) Surges Ans: (C)
1. For converting a.c. to d.c., following equipment is used in locos () (a) Transformer (b) Smoothing reactor (c) Silicon Rectifier (d) Circuit breaker Ans: (C)
2. Which one of the following is not a safety item () (a) ACP Unit (b) Hand brake (c) Head Light (d) Corridor Light Ans: (d)
3. The continuous rpm of a Hitachi Traction Motor is () (a) 895 rpm (b) 100rpm (c) 110rpm (d) 125rpm Ans: (a)
4. MVRH is a () (a) D.C.Motor (b) A.C.Motor (c) Universal Motor (d) None of the above Ans: (b)
8. Wheel slipping occurs () (a) due to Down gradient (b) due to poor brake power (c) if applied tractive effort is more than adhesive weight of loco (d) none of the above Ans: (c)
9. KVA rating of TFP used in WAG-7 WAP4 locos is () (a) 3460KVA (b) 3900KVA (c) 5400KVA (d) 6000KVA Ans(C)
10. In Traction Transformer () (a) A33-A0 Auto Transfer Winding (b) A34-A0 Primary Winding (c) a0-a1 Auxiliary Winding (d) All are correct Ans(d)
11. ARNO is used for () (a) cooling T.M. (b) converting 1 to 3 phase a.c. (c) cooling TFP oil (d) converting a.c. to d.c. Ans(b)
1. For changing direction of loco movement, following is used () (a) CTF (b) Reverser (c) Shunting contactor (d) Pantograph Ans(b)
2. In WAG-7 loco following Smoothing Reactor is used () (a) SL-30 (b) SL-40 (c) SL-42 (d) None Ans(a)
3. Twin Beam Head Light bulb has twin filament of () (a) 100 and 110watts (b) 100 and 120watts (c) 100 and 90watts (d) 80 and 100watts Ans: (C)
4. BA are used for powering () (a) ARNO convertor (b) Traction Motor (TM) (c) Cab heater (d) Auxiliary compressor (MCPA) Ans: (d)
16. Hydrometer is used for measuring () (a) level of electrolyte in BA (b) total charge stored in BS (c) specific gravity of electrolyte (d) terminal voltage of BA Ans: (C)
17. Maximum air pressure in electric loco brake cylinder with A9 application with cast iron brake blocks is () (a) 2.5 kg/cm² (b) 3.5 kg/cm² (c) 2. kg/cm² (d) 5. kg/cm²

Ans: (C)

1. Disturbance of neutral axis of rocker ring in a DC motor will result in () a) poor commutation (b) increase in voltage (c) jamming of bearing (d) None of the Above Ans: (A)
2. Gear ratio of WAG7 loco is ()
a) 18: 14 b) 23: 58 c) 17: 57 d) 16:65

Ans: (D)

1. Maximum allowed wheel dia variation in service of WAG7 Locos () (a) on same axle is 2.5 mm (b) one same bogie is 8 mm (c) Both (a) (b) (d) None Of the above Ans: (A)
2. The requisition No. for a N.S.item is ()
(a) S 1313 (b) S 1302 (c) S 1315 (d) S 1305 Ans:

(B)

3. Maximum Tractive effort of a loco is the () (a) maximum power developed by the loco (b) maximum torque developed by the loco at 5KMPH

- (a) maximum starting torque developed by the loco without wheel slipping
- (b) None is

correct Ans: (C)

1. Relay to detect abnormalities in TFP is ()

(a) QRSI (b) QOP (c) QLM (d) QOA Ans:

(C)

2. For protection of traction motors against over voltage, following relay is () used

(a) QOP (b) Q20 (c) QD (d) QRSI

Ans: (B)

25. AFL circuit works in case of ()

(a) train parting (b) chain pulling (c) brake application (d) both (a) (b) Ans:

(D)

1. The insulation class of an auxiliary motor is ()

(a) H Class (b) B Class (c) F Class (d) C Class

Ans: (C)

2. Panto raising time is adjusted between () (a) 6 to 10sec. (b) 5 to 1sec. (c) 5 to 8 sec. (d) None Ans: (A)

3. Centre pivot of Bogies of WAG7 is

a) for Tractive effort transfer (b) Weight of Loco body sharing (c) Both (a) and (b) (d) None of the above Ans: (A)

1. In a WAG7 loco the no. of brake cylinders are ()

(a) 8 (b) 1 (c) 12 (d) 16 Ans: (A)

2. Traction motors are oriented in one direction per bogie in the following class of locos ()

(a) WAG5 (b) WAM4 (c) WAG7 (d) WAP4 Ans: (C)

3. MU2B and F1 Selector Valves are used to isolate () rear loco

a) A9 and SA9 of rear loco (b) RSI block in MU operation (c) None of the above (d) Both (a) and (b) Ans:

(A)

32. DP Test is done to detect ()

a) Acetylene content in oil (b) Methane level (c) inside void in axle (d) surface crack Ans:

(D)

33. Field shunting in loco is done to ()

a) increase tractive effort (b) increase power of loco (c) increase speed (d) both (b) (c) are correct Ans: (C)

1. QLM setting of WAG-7 loco is () a.

9Amp. b. 8 Amp. c. 7 Amp. d. 1Amp. Ans:

(A)

2. Noise / vibration level of bearing is measured in ()

a. DB b. dB c. GB d. BD Ans: (B)

1. EFDJ coil of DJ in WAG-7 loco is () a. holding coil b. closing coil c. None d.Both (a) (b) Ans: (B)
2. Hitachi Traction Motor is a ()
a.4 Pole DC Motor b.6 Pole AC Motor c.4 Pole AC Motor d.6 Pole DC Motor Ans: (D)
38. In MVMT bearing used is ()
a.6313 with C3 clearance b.6312 with C4 clearance c.6312 with C3 clearance d.6313 with C4 clearance Ans: (A)
39. Minor penalties can be imposed to withhold ()
a.2 sets of passes b.2 increments for one year c.promotion for one year d. all the above Ans: (D)
1. Opening of the AAL Make VCB is done through () a. air pressure b. charged spring c.both (a) (b) d.none of the above. Ans: (A)
2. What type of bearing is used in WAG-7 loco axle box? () a. ball bearing b. roller bearing c. tapered bearing d. needle bearing Ans: (B)
3. In a failed WAP-4 loco, it is found that in TM5 carbon brush was touching () to the TM body, which relay would have been operated a. QLM b. QRSI c.QOP1 d.QOP2 Ans: (D)
4. What is the voltage of OHE feeding power to WAG-7 loco ()
a. 25KV AC b. 150V DC c. 11 KV ACd. 44V AC Ans: (A)
5. MVRH is provided to cool the ()
a. Traction Motor b. RSI block c. TFP Radiator d. Compressor Ans: (C)
1. What is the time interval between IA and IB schedule of WAG-7 loco is () days
a. 45 b. 60 c. 90 d. 30 Ans: (B)
2. Loco brake applies ..kg pressure ()
a.2.0 b. 3.5 c. 1.5 d.7.0 Ans: (B)
3. Back lash term is related to. () a. TFP b. Battery c. CBC d. Gears Ans: (D)
4. There are .. nos. of main poles (MP) in a Hitachi TM. ()
a. 6 b. 4 c. 2 d.12 Ans: (A)
5. The Lubricant used in Suspension Bearing of a Hitachi Motor
a.170-T b. SP57 c.Servo RR3 d.Minerol Oil Ans: (C)
50. Multimeter is used to measure ()
a. voltage only b. current only c. resistance only d. all of the above Ans:(D)
51. WAG-7 loco is using .. type of bogies ()
a. flexicoil co-co b. Tetra mounted High adhesion fabricated Bogie c. trimounted co-co d. any of the above Ans: (B)
1. Loco TFP has . Nos. of taps for voltage control of Conventional Loco(WAG5, WAP4 , WAG7) () a. 16 b. 32 c. 12 d. depending upon the type of loco Ans: (B)
2. What are the time delays of Q118, Q44 and QTD Relays? ()
a. 5 sec, 5 sec, 1 sec b. 5 sec, 5 sec, 5 sec c. 5 sec, 0.6 sec, 5 sec d. 1 sec, 0.6 sec, 5 sec Ans: (C)
1. Sand is used in locomotives to avoid. () a. wheel skidding b. wheel slipping c. brake failure d. all the above Ans: (B)
2. Leakage Test is conducted to find out leakage in ()
a. CP b. MR c. BP d. b&c Ans: (D)

55. Safety Relays are

a) All DI type b) All DU type c) All DI & DU type d) Some are DU type and some are DI type. Ans: (C)

56. DI Type safety relays are

a) QOP, QOA b) QRSI, QLA, QLM c) QOP, QPDJ d) Q44, Q118 Ans: (B)

57. DU type safety relays are

a) QOP, QOA b) QLM, QRSI c) Q44 d) Q118 d) none of the above Ans: (A)

58. CT ratio of RSILM:

a) 1000: 5 b) 2000: 5 c) 4000: 5 d) 1000: 15 Ans: (C)

1. CT ratio of TFILM a) 50: 5 b)

100: 5 c) 250: 5 d) 200: 5 Ans: (C)

2. Pick up voltage of Q20 in WAG7

locos: a) 750V b) 800V c) 865 V d) 850V

Ans: (C)

3. While RB is in service which relay will act if any earth fault occurs in the power circuit in WAG7 Loco

a) QOP1 b) QOP2 c) QOA d) (a) or (b) or (c) Ans: (D)

4. The resistance value of RU in WAG7 locos is a)

88 kohms b) 10kohms c) 120Kohms d) 22kohms Ans:

(A)

5. The resistance value of RQ20in WAG7 locos or 6P locos

a) 2.4 kohms b) 13.2 kohms c) 24 kohm d) 10koh Ans: (B)

6. The setting value of Q44 is a) 1

sec b) 2 sec c) 5 sec d) 0.6 sec Ans: (D)

65. The setting value of Q118 is a) 2.5 sec

b) 5.sec c) 0.6 sec d) 1.5 sec Ans: (B)

66. In twin Beam headlight the rating of bulb is

a) 24V, 70/75W b) 24V, 90/100W c) 110V, 70/75W d) 110V, 90/100W Ans:

(B)

67. The input / output voltage ratings of the DC-DC converter are:

a) 110V / 110V b) 110V/50V c) 110V / 24V d) 110V/20V

Ans: (C)

68. In a twin beam Headlight, what is the voltage of bulb in dimmer operation. a) 110V

b) 55V c) 24V d) 12V Ans: (C)

69. What is the advantage of twin beam headlights system:

a) Headlight glows while passing on neutral section. B) Headlight focusing is good. c)

Even one bulb fuses also, it will not effect the running of loco to destination. (d) All the

above Ans: (A)

70. The rating of a cab heater is.

a) 500 Ohms, 500W (b) 40,500W(c) 10,500W(d) 5,500W Ans: (A)

1. How many CPs are required for Air brake WAG7 Loco: (a) Minimum 2 CPs (b) Maximum 2 CPs (c) Minimum 3 CPs (d) Maximum 3 CPs Ans: (a)

2. What is class of Insulation specified for 180degrees temperature: (a)

B class (b) A class (c) H class (d) Y class. Ans: (C)

3. The object of sanders is to

(a) Improve the adhesion (b) Avoid wheel slipping (c) To have momentum (d) All the above Ans:

(B)

74. Maximum tractive effort at wheel rim of WAG7 loco is

(a) 34.3 tonnes (b) 30 tonnes (c) 20.5 tonnes (d) 44 Tonnes:

Ans: (D)

1. The specific gravity of Electrolyte of a lead acid battery at 27 C should be (a)

1.250 (b) 1.200 (c) 1.100 (d) 1.180 Ans: (A)

2. Specific gravity of electrolyte is measured using. (a)

Thermometer (b) Hygrometer (c) Hydrometer (d) Lactometer Ans: (C)

3. DC series motor is used for traction purpose because:

(a) High speed (b) High starting torque (c) Low starting torque (d) Constant torque at all speeds. Ans: (B)

1. Size of each cable connected to Traction Motor of WAG7 is

(a) 120 Sq.mm (b) 150 Sq.mm (c) 300 Sq.mm (d) 200 Sq.mm Ans: (C)

2. Size of each cable connected to MVMT1/MVMT2/MRH in AC locomotive is (a) 3

sq.mm (b) 10 sq.mm (c) 25 sq.mm (d) 50 Sq.mm Ans: (C)

3. Size of each cable connected to MCP/MPH is (a) 3

Sq.mm (b) 10 Sq.mm (c) 25 Sq.mm (d) 50 Sq.mm Ans: (B)

4. Size of cable used in control circuits is (a) 3 Sq.mm

(b) 10 Sq.mm (c) 25 Sq.mm (d) 50 Sq.mm Ans: (A)

5. Size of cable connected to Arno

(a) 100 Sq.mm (b) 150 Sq.mm (c) 120 Sq.mm (d) 150 or 120 Sq.mm Ans:

(B)

83. Breaking excitation transformer purpose is to.

(a) Excitation of armature (b) Excitation of field (c) Excitation of both (d) Excitation of TFP Ans: (B)

84. BP1 DJ is pressed

(a) To start the loco (b) To stop the loco (c) To close DJ (d) To trip DJ Ans:

(D)

84. HQOP HQOA are

(a) Earth fault relay by pass

switches (c) Earth fault relays

(b) Earth fault relay isolation switches (d) All the above.

Ans: (A)

85. Flasher light is provided in loco/MEMU a) To communicate with the loco driver coming in the opposite direction about any difficulty.

a) To communicate with the loco driver coming in the same direction, about any Difficulty.

b) To inform the opposite coming loco driver about the abnormality noticed about OHE/Track.

c) All

above. Ans: (D)

86. EM contactor pressure is

(a) 650 to 800 gms (b) 600 to 700 gms (c) 600 to 750 gms (d) 900 to 1100 gms Ans: (D)

87. Electrolyte used in a lead acid battery is

(a) Concentrated sulphuric acid (b) Diluted sulphuric acid (c) Nitric acid (d) None

of above. Ans: (B)

88. The active material used for positive plate of lead acid battery is ----(lead peroxide) PbO_2

89. The fuse rating of CCPT is a) 6 AMPS (b) 1 Amps

(c) 16 Amps (d) 35 Amps Ans: (C)

90. CHBA function is normally

a) To supply the DC charging current to batteries b) To supply the D.C. load current to various control circuits

c) To supply the current to Auxiliary motors d) Both (a) (b) Ans: (D)

91. The purpose to RSI Block is
(a) To convert AC to DC (b) To convert DC to AC (c) To generate AC (d) To generate DC Ans: (A)
1. Battery negative is connected to loco body through
(a) HQOP (b) HQOA (c) HOBA (d) HQCVAR Ans: (C)
2. MVMT1/MVMT2 are meant for cooling of
(a) Armature of TM (b) Field coils of TM (c) Stator of TM (d) All of these Ans: (D)
94. Shunting contactors are provided in the loco for the purpose of
(a) Increasing the speed (b) To decrease the speed (c) To stabilize the speed (d) to stop the train. Ans: (A)
95. The speed control method used in AC locomotive/MEMU
(a) Voltage control (b) Current control (c) Rheostatic control (d) Regenerative control Ans: (A)
1. The type of Electric braking system used in WAG7 locomotive is
(a) Regenerative (b) Rheostatic (c) Both (d) None of the above Ans: (B)
2. Instrument used to measure contact resistance
(a) Whetstone bridge (b) Multi meter (c) Micro ohmmeter. (d) Ammeter Ans: (C)
98. Action in lead acid cell
a) Reversible (b) Irreversible (c) Both a&b (d) None of a& b Ans: (A)
99. Purpose of inter pole in the traction motor
a) To avoid sparking on the commutator (b) To avoid bad commutation
c) To divert field current (d) Both a & b
Ans: (D)
1. During rheostat braking traction motor works as a
a) Generator (b) Converter (c) Motor (d) Inverter Ans: (A)
2. The relay QOP/QOA is the relays of sensing
a) Voltage (b) Current (c) Resistance. (d) Inductance Ans: (A)
3. IN WAG-7 BP pressure not building up due to
a) A9 defective (b) C3W defective (c) SA9 defective (d) R6 defective (e) None of the above Ans: (A)
103. IN WAG7 MR pressure not building up
a) A8cock closed condition (b) Bogie cocks closed condition (c) VEAD cock closed (d) MR drain cock not closed
e) None of the above Ans: (D)
104. IN WAG7 MCPA pressure not building up on run
a) VESA air leaking (b) VEAD air leaking (c) IP (E) air leaking (d) DJ oil separator drain cock not closed (e) None of the above Ans: (D)
105. In MU loco, driver experienced Rear loco brakes are not applying found the following trouble
a) MU2B leading loco in leading (b) MU2B trailing loco in leading (c) A9 differential cock closed
d) SA9 problem (e) None of the above
Ans: (B)
106. Duplex check valve defective in WAG7 loco which resulted to
a) Horn/wiper not working (b) Horn / sanders not working (c) Horn/FP not working (d) All the above
e) None of above
Ans: (D)
107. Type of three phase locomotive available on Indian Railways
a) WAP1/WAP5/WAP4 (b) WAG7/WAG9/WAP7 (c) WAP5/WAP7/WAG9 (d) None of the above Ans: (C)

108. Type of motor used in 3 phase locomotives

- a) DC series motor b) Three phase IM c) Single phase IM d) DC Shunt Motor

Ans: (B)

109. Advantage of three phase locos.

- a) Regenerative basis b) UPF c) Both a & b d) None of the above.

Ans: (C)

110. In 3 phase locomotives, three phase indicates?

- a) Three phase OHE supply system b) Three phase supply to the motor c) Both a & b d) None of the above

Ans: (B)

111. Higher horse power locomotive available with type of locomotive on Indian Railways.

- a) WAG9 b) WAP7 c) Both d) WAP4

Ans: (A)

112. Important power device used in three locomotive for power conversion

- a) IGBT b) GTO c) a & b d) IGCT

Ans: (C)

113. Type of Pantograph used in 3 phase Locomotives

- a) AM12 b) AM92 c) IR03 d) All the above

Ans: (D)

114. Different gear ratios in WAG9 loco is

- A 15:77, 18:64 b. 15:77, 20:72 c. 15:77, 21:107 d. 15:77, 17:77

Ans: (C)

115. Maximum braking effort of WAG-9 Loco is

- a. 260KN b. 458KN c. 182KN d. None of the above

Ans: (A)

1. Voltage applied to Traction Motors (Phase to Phase) in WAG9-loco is a.

- 2180Volts b. 2800Volts c. 750Volts d. None of the above Ans: (A)

2. If ZBAN is switched ON

- a) FP drops to zero b) BP drops to zero c) Over charging of BP takes place d) BP & FP drops to zero Ans: (B)

118. Machine Room blower-I receives supply from

- a. BUR-1 b. BUR-2 c. 415 Volts directly from Transformer d. 110Volts directly from Transformer Ans: (C)

119. Machine Room blower works

- a. In cooling mode b. In driving mode c. In cooling and Driving modes d. In Driving and self hold mode Ans:

(C)

120. Minimum Voltage relay in 3 phase locos is for

- a. Sensing of OHE Voltage in driving mode b. Sensing of OHE Voltage in Cooling mode c.

Voltage protection in self hold mode d. Over voltage protection in simulation mode Ans: (B)

121. Purpose of using single phase machine Room blower in 3 phase locos

- a. Facilitating to work in driving mode for cooling machine room
b. Facilitating to work in self hold mode for cooling machine room
c. Facilitating to work in simulation mode for cooling machine room
d. Facilitating to work in cooling mode for cooling machine room

Ans: (D)

1. Minimum voltage relay in three phase locos a. 86 in

- SB-2 b. 78 in SB-1 c. 86 in SB-1 d. 78 in SB-2 Ans: (C)

2. For working in cooling mode BL is to be operated from a.

- D-OFF-C b. OFF-C c. D-OFF-C-OFF-C d. b & c Ans: (D)

3. Continuous glowing of LSFI indicates

- a. Any of the sub-system is isolated b) A priority-II fault c. Any auxiliary motor is isolated d) None

of the above Ans: (A)

125. DC Link voltage of Traction Converter is

- a. 1172 Volts b. 2180Volts c. 2800Volts d. None of the above

Ans: (C)

126. Traction Motors in three phase loco are

- a. 3 Phase slip ring induction motor b) 3 Phase squirrel cage induction motors c) 3 Phase synchronous motor
d) DC series motor

Ans: (B)

127. Battery charger rectifier in 3 phase locos:

- a. Half Wave b. Bridge Full wave c. Full Wave center tap d. Both b & c Ans: (B)

1. BUS STATION cooling fans work on

- a. 110Volts b. 48Volts DC c. 24Volts DC d. 110Volts AC Ans:

(B)

2. VCB trips when transformer oil temperature rises to a.

- 80degrees b. 84 degree c. 75 degrees d. 70degrees Ans: (B)

1. Output of Auxiliary winding is a. 415Volts b.

- 1000Volts c. 2100Volts d. 1200Volts Ans: (B)

2. In three phases locos Priority-II message means

- a. Trips VCB b. Shut down loco c. Isolates sub-system d. Allows normal functioning Ans: (D)

1. VCB trips when auxiliary circuit current exceeds a.

- 280Amps b. 400Amps c. 500Amps d. 1000Amps Ans: (B)

2. Output frequency of a Traction Converter is a. 60-120HZ b.

- 62-132HZ c. 50-100HZ c. None of the above Ans: (B)

3. ZTEL switch is used in

- a. Banking mode b. Inching mode c. Simulation mode d. None of the above Ans: (B)

1. Type of batteries used in three phase locos a. NiCd b.

- Both a & c c. Lead Acid d. None of the above Ans: (A)

2. Primary over current relay is a.

- 89.7 b. 78 c. 89.6 d. 86 Ans: (B)

3. Time delay of Timer relay in MR Blower

- a. 08 Sec b. 10Sec c. 12 Sec d. 05 Sec Ans: (B)

4. Current rating of OCB MCB is a. 40Amps b.

- 63 Amps c. 80Amps d. 16 Amps Ans: (B)

5. The brake application time through DBC in WAG-9 locos is a. 06 to

- 10secs b. 10to 15 secs c. 15 to 20secs d. none of the above Ans: (D)

6. Number of electronic cards available in E-70panel a.

- 4 b. 6 c. 2 d. 3 Ans: (A)

7. The pressure switch associated with working of Baby compressor is a. Pn

- 26 b. Pn 60 c. Pn 59 d. Pn 6 Ans: (A)

8. The number of PBU available in WAG9 locos is a.

- 04 b. 12 c. 02 d. 08 Ans: (A)

9. The number of sanders to be kept in service in WAG9-locos is a. 08

- b. 12 c. 04 d. None Ans: (A)

145. In E-70 brake system locos the coc-47 is used for
a. Moving the loco dead b. Application of brakes through A9 c. Operation/Isolation of PBU d. Operation/Isolation of sanders Ans: (A)
1. The size of choke available in sander circuit in WAG-9/WAP-7 locos is a. 5.5mm b. 2mm c. 3 mm d. 4mm Ans: (C)
2. The switch used for isolation of vigilance control device is a. 125 b. 154 c. 160 d. 237.1 Ans: (D)
3. The operating pressure of contactors in TC1, 2 HF a. 10kg/sqcm b. 6kg/sqcm c. 5kg/sqcm d. 8kg/sqcm Ans: (D)
4. The pressure switch used for monitoring working of pantograph is a. Pn 44 b. Pn 60 c. Pn 09 d. Pn 26 Ans: (C)
150. After completion of self-test in 3 locomotives following node will appear a. 590 b. 570 c. 550 d. 504 Ans: (D)
151. Conversion of BP control pressure into electrical signal in 3 locomotives is done by
a. Pressure sensor b. Pressure switch c. Pressure transducer d. None of the above Ans: (C)
152. 260 indicate equipment.
a. Filter block b. SR rack c. Pneumatic panel d. BUR Ans: (C)
153. MU is not possible if card is defective in any one of the 3 locomotives.
a. SLG1 b. ALG1 c. FLG1 d. SLG2
Ans: (C)
154. If MVR is not picking up then
a. Traction not possible b. RB not possible c. Cooling mode not possible d. Driving mode not possible Ans: (C)
155. & processor cards present only in VCU1 and VCU2 respectively.
a. FBV, DIA b. STB, FBV c. ZBV, DIA d. STB, ZBV
Ans: (C)
156. no. of processor cards is interchangeable between VCU1 and VCU2 after reloading the appropriate software. a. 2 b. 5 c. 6 d. 3 Ans: (B)
157. SLG1 SLG2 is interchangeable by changing
a. Hex address Software b. Software c. Hex address only d. Not interchangeable Ans: (A)
158. TM speed sensor output is connected to card in the rack.
a. ASC PERI, SR b. NSC PERI, SR c. STB, VCU d. HBB, VCU
Ans: (A)
159. Number of TFP and SR oil pressure sensors available in loco are and respectively.
a. 4, 4 b. 4, 2 c. 2, 4 d. 1, 2
Ans: (B)
160. BUR 1 2 operate at Frequencies.
i) 37 Hz ii) 50Hz iii) 44 Hz
a. I II b. I, II III c. II only d. I, III
Ans: (A)
161. Consider following activities
1) SR changing 2) SRMPH changing 3) OCB radiator changing 4) VCB changing

.Which of the above activities requires roof lifting?

- a. 1 4 b. 2 3 c. 2 4 d. 1 3

Ans: (D)

161.Consider following activities

- 1) TM changing 2) Wheel Set changing 3)Axle damper changing 4) PHS changing

Which of the above activities requires loco lifting?

- a. 1& 4 b. 3& 4 c. 2& 3 d. 1& 2

Ans: (D)

162. Correct arrangement of foot switches in 3 locomotives from Left to right in loco cab is

L M R

- a.PVCD PVEF PSA b.PSA

PVCD PVEF c.PVEF PSA

PVCD d.PSA PVEF

PVCD Ans: (D)

163. In SR1 rack of 3 locomotives, speed sensor connected to Sub-D, it “C” senses speed of

- a. TM 3 b. TM 2 c. TM 1 d. TM 4

Ans: (B)

164. Following combinations of gear ratios are used for WAG9 locomotive

- a. 23:58 20:72 b. 23:72 20:58 c. 20:72 21:107 d. 15:77 21:107 Ans:

(D)

165.For performing shunting switch to be kept in position and the speed limit is kmph.

- a) 154, I, 1kmph b) 152, 0, 5 kmph c) 160, I, 15 kmph d) 162, 0, 5 kmph Ans:

(C)

166.While working loco in mode, VCD need not be acknowledged.

- a. Shunting b. Constant Speed c. Inching mode d. Braking mode

Ans: (C)

167.Which of the following statement is correct.

- a) Teeth of bull gear of WAG9 < Teeth of bull gear of WAP7

- b) Teeth of pinion of WAG9 > Teeth of pinion of WAP7

- c) Teeth of bull gear of WAG9 > Teeth of bull gear of WAP7

- d) None of the

above Ans: (C)

168.The number of teeth on the M/s ARC make Hall effect speed sensor ring are

- a. 30 b. 120 c. 60 d.90

Ans: (B)

169. If the TM rotates at a speed of 600rpm then the frequency of pulse generated by ARC make speed sensor is

- a.1.8 KHz b.0.6KHz c.0.3 KHz d.1.2 KHz

Ans: (D)

170 Consider following statements for healthy motor

1. No Inductance variation between different phases of motor

2. Low IR value

1. Low Temp. rise above ambient during run test 4.

Low dB level recorded during run test

- a. 1, 2 3 b. 2, 3 4 c. 1, 3 4 d. 1, 2 4 Ans:

(C)

171. Contactor 52/2 in auxiliary circuit is used for redistribution of

- a. MRB b. SCTMB c. TMB d. Battery Charger Ans: (D)

172. If any one the BURs isolated which of the following indicates correct position of 52.4/1, 52.4/2, 52.5/1 &52.5/2 Contactors.

52.4/1 52.4/2 52.5/1 52.5/2

- a. close close close open

- b. close open close open

- c. close open close close

- d. close open open close

Ans: (D)

173. Which of the following statements is correct?

- a) 89.5 Earth fault relay in auxiliary converter and it is located in HB1 panel
- b) 89.5 Earth fault relay in 415/110v and it is located in HB2 panel
- c) 89.5 Earth fault relay in auxiliary converter and it is located in HB2 panel
- d) 89.5 Earth fault relay in 415/110v and it is located in HB1 panel

Ans: (D) 174
24V and 48V DC-DC converter feeds and respectively.

- a) Electronic rack cooling fan Indication lamps
- b) Indication lamps Electronic rack cooling fan
- c) Indication lamps Head light
- d) Head light Indication lamps

Ans: (B)

175. Transformer in 3 locomotives is having number of windings.

- a. 5 b. 6 c. 7 d. 8

Ans: (C)

176. MCB for machine room lightning is

- a. 310.1/1 b. 310.7 c. 338.1 d. 310.4

Ans: (D)

177 number of change over contactors are provided in auxiliary circuit of 3 locomotives.

- a. 6 b. 9 c. 10 d. 8

Ans: (B)

OBJECTIVE TYPE QUESTIONS: ELECTRICAL

1. DU type safety relays are
a) QOP, QOA b) QLM, QRSI c) Q44 d) Q118
2. CT ratio of TFILM
a) 50 : 5 b) 100 : 5 c) 250 : 5 d) 200 : 5
3. While RB is in service which relay will act if any earth fault occurs in the power circuit
a) QOP1 b) QOP2 c) QOA d) QLM
4. The resistance value of RQ20 in WAG locos or 6P locos
a) 2.4 k Ω b) 13.2 k Ω c) 24 k Ω d) 10 k Ω
1. The setting value of Q44 is a) 1 sec b) 2 sec c) 5 sec d) 0.6 sec
2. The purpose of SL is
(a) To smoothen the pulsated DC
(b) To smoothen the pulsated AC
(c) To convert AC to DC
(d) To convert DC to AC
1. The input / output voltage ratings of the DC-DC converter are: a) 110V / 110V b) 110V/50V
c) 110V / 24V d) 110V/20V
2. What is the advantage of twin beam headlights system:
a) Headlight glows while passing on neutral section.
b) Headlight focusing is good.
c) Even one bulb fuses also, it will not effect the running of loco to destination.
d) All the above
1. What is class of Insulation specified for 180 degree temperature:
(a) B class (b) A class (c) H class (d) Y class.
1. The specific gravity of Electrolyte of a lead acid battery at 27 °C should be
(a) 1.250 (b) 1.200 (c) 1.100 (d) 1.180
2. DC series motor is used for traction purpose because: (a) High speed (b) High starting torque (c) Low starting torque (d) Constant torque.
12. Breaking excitation transformer purpose is excitation of
(a) armature (b) field (c) armature & field (d) TFP
13. BP1 DJ is *pressed*
(a) to starts the loco (b) to stop the loco (c) to close DJ (d) to trip DJ
14. HQOP & HQOA are
(a) Earth fault relay by pass switches (b) Earth fault relay isolation switches
(c) Earth fault relays (d) All the above.
15. Flasher light is provided in loco to communicate
(a) With loco driver coming in the opposite direction about any difficulty.
(b) With the loco driver coming in the same direction, about any difficulty. (c) The opposite coming loco driver about the abnormality noticed about OHE/Track. (d) All above.

16. Electrolyte used in a lead acid battery is
(a) concentrated sulphuric acid (b) diluted sulphuric acid (c) Nitric acid (d) none
17. The fuse rating of CCPT is
(a) 6 AMPS (B) 10 Amps (c) 16 Amps (d) 35 Amps
18. CHBA function is normally
a) To supply the DC charging current to batteries
b) To supply the D.C. load current to various control circuits
c) To supply the current to Auxiliary motors
d) Both (a) & (b)
19. The speed control method used in AC locomotive/MEMU
(a) Voltage control (b) Current control
© Rhoestafic control (d) Regenerative control

1. Battery negative is connected to loco body through (a) HQOP (b) HQOA (c) HOBA (d) HQCVAR
1. Under charging of batteries results....
2. DGA stands for
23. Purpose of inter pole in the traction motor
 - a) To avoid sparking on the commutator
 - b) To avoid bad commutation
 - c) To divert field current
 - d) None.
24. The protection against safety for equipment as well as human in the locomotive.
 - A) ETRFP b) ET1 &2 c) HOM d) None
 1. Q20 will pickup at----- Drop out at -----for 6P combination locos.
 2. FRPCPY -----
1. Shock pulse meter to check (a) Condition of bearing b) condition of axle c) Condition of gear d) condition of SL
2. PHGR works between --- to ---- notches.
- 29. Current is collected from OHE to AC loco through**
 - a) Transformer b) Circuit breaker c) Pantograph d) Servomotor.
30. Arc horn gap for Hitachi motor -----
- 31 Relay to detect abnormalities in TFP is
 - A) QLM b) QOA c) QRSI d) QOP
32. The input supply of CHBA -----and output voltage is -----
 - (a) 380 VDC , 110 V DC (b) 380 VAC , 110 V AC (c) 380 VAC , 110 V DC (d) 380 VDC , 110 V AC
33. QOP relay is used to detect
 - a) Earth fault in auxiliary circuit b) Over current c) Earth fault in power Circuit d) Surges
34. Hydrometer is used to measure -----of electrolyte.
35. The setting value of QLM is
 - a) 6 amps b) 9 amps c) 5 amps d) 5.5 amps
36. MVRH is a a)DC motor b) 3 ϕ AC motor c) Universal motor d) 1 ϕ AC motor.
37. In Traction Transformer
 - a) A33-A0 is Auto Transformer winding
 - b) A34-A0 is Primary winding
 - c) a0-a1 is Auxiliary winding
 - d) All are correct
38. MVRH is provided to cool the
 - a) Traction Motor b) RSI block c) TFP Radiator d) Compressor
1. Multi meter is to measure-- a) Voltage only b) current only c) resistance only d) all of the above
2. Loco TFP has No.s of taps for voltage control a) 16 b) 32 c) 12 d) depending upon

the type of loco

3. What are the time delays of Q118, Q44 and QTD Relays?
- a) 5 sec, 5 sec, 1 sec
 - b) 5 sec, 5 sec, 5 sec
 - c) 5 sec, 0.6 sec, 5 sec
 - d) 1 sec, 0.6 sec, 5 sec
42. When the DJ of the locomotives opens following pilot lamps will glow
- a) LSDJ, LSGR, LSB & LSCHBA
 - b) LSDJ, LSGR, LSB & LSP
 - c) LSDJ, LSGR, LSB & LSOL
 - d) LSDJ & LSGR only
43. The relay QOP/QOA is the relay of sensing
- a) Voltage b) current c) resistance
44. The number of auxiliary motors starts along with arno
- a) 6 b) 3 c) 4 d) 5

45. LECC is provided in the loco to indicate

- a) Lamp condition
- a) Fuse condition and + ve bonding
- b) Fuse condition and –ve bonding
- c) None

46. The QD-1 relay is connected in between ____ and ____ Traction Motors.

- a) 2 and 3
- b) 3 & 4
- c) 5 & 6
- d) 4 & 5

47. Current transformers are used to measure _____ in AC systems.

- a) Small currents
- b) Large currents
- c) voltage
- d) None

1. What is the voltage of OHE feeding power to WAG7 loco a) 25 KV AC b) 1500 V DC c) 11 KV AC d) 440 V AC

2. The purpose of RSI block is

- a) To convert AC to DC
- b) To convert DC to AC
- c) To generate AC
- d) To generate DC

50. There are ----- nos. of main poles (MP) in a Hitachi TM.

- (a) 6
- (b) 4
- (c) 2
- (d) 12

ANSWERS TO OBJECTIVE TYPE QUESTIONS: ELECTRICAL

1. Ans: [a]

1. Ans: [c]

2. Ans: [a]

3. Ans: [b]

5. Ans: [d]

6. Ans: [a]

1. Ans: [c]

2. Ans: [d]

3. Ans: [c]

1. Ans: [a]

2. Ans:[b]

3. Ans:[b]

4. Ans:[d]

5. Ans:[b]

6. Ans: [d]

7. Ans:[b]

8. Ans:[c]

9. Ans:[d]

10. Ans:[a]

11. Ans: [c]

12. Low specific gravity

13. Dissolved Gas analysis

14. Ans:[b]

1. Ans: [c]

2. 865 V DC and 740 V DC

1. Failure rate percentage per year
2. Ans: [a]
3. 6 to 32
4. Ans: [c]
5. $10\text{mm} \pm 1\text{mm}$
6. Ans: [a]
7. Ans: [c]
8. Ans: [c]
9. Specific gravity
10. Ans: [b]
11. Ans: [b]
12. Ans: [d]
13. Ans: [c]
14. Ans: [d]
15. Ans: [b]
16. Ans: [c]
17. Ans: [a]
18. Ans: [a]
19. Ans: [d]
20. Ans: [c]
21. Ans: [a]
22. Ans: [b]
23. Ans: [a]
24. Ans: [a]
25. Ans: [a]
- 26.

Fill in the blanks

1. Pinion and bull gear ratio of a WAG 7 loco is **16:65**
2. The axle load of WAG9 is **20.5+-2%Tonnes**
3. Capacity of battery provided in electric loco(WAG-7) is **75A.H.**
4. Full form of MVRH is **Blowing for cooling Transformer Oil (through Radiator)**
5. Thickness of Flange at 3 mm Flange wear is **29mm**
6. RPS is used to **Parallel to** field of Traction Motor.
7. IP Coil is used to improve **Commutation**
8. Higher gear ratio is used for **Higher** starting torque.
9. Bibby/Disc Coupling is provided to couple **Main compressor and Motor**
10. DGA stands for **Dissolved GAS analysis**
11. Equivalent resistance of 5ΩResistor and 3ΩResistor connected in parallel is **1.875Ohms**
12. Type of Pantograph used for WAG-7 loco is **AM12**
13. RSI block is **Full Wave Bridge Rectifier.**
14. Q-20 Relay is a **Traction Motor Over Voltage Relay**
15. Bo-Bo bogies have **Two** no. of axles in each bogie.
16. In DBR operation, traction motor works as **Generator**
17. AM12, AM92 are the type of **PantoGraphs**
18. Every loco should be provided with **4 nos.** of Fire Extinguishers
1. Brake application and release timing through A9-should be **20/25 to 25/30 sec.** While dispatching the loco from shed.
19. Through SA9; B.C. Pressure is **3.5Kg/Cm2**
20. BC Piston travel should be **107 to 117 mm** for WAG7 locos.
21. Leak hole test is conducted for **Proportional** brake system.
22. With two CPs in working loco alone, the BP pressure should reach within **150 secs.**
23. **ZLS** switch is provided to switch off signaling lamp of rear loco in MU.
24. Rating of HS15250A is **630KW**
25. Minimum air pressure required to raise the panto is **4kg/cm2**
26. Opening time of VCB should be less than **45msec.**
27. Voltage operated relays are _____ type.(DU)
28. Current operated relays are _____ type.(DI)
29. Setting value of QRSI relay _____ in WAG7/WAG5 locos (5Amps)
30. The purpose of SL is to _____ Remove the pulses in DC output from the rectifier(AC Pulses)
31. The resistance value of RPGR is . _____ (One Lakh Ohms)
32. The resistance value of RGR is _____ (1.6Ohms)
33. The HP of MVSL is _____ (3HP)
34. LECC is provided in the loco to indicate. _____ (continuity of Fuse)
35. LSCHBA is provided in the loco to indicate _____ (Charger working)
36. **Additional CCBA** provided to protect batteries from fire
2. DC-DC converter provided to use head lamps of loco in _____ section(In all sections including Neutral Section)
37. Over charging of batters results _____ .(Gasing)
38. Under charging of batters results. _____ (Suplphation)
39. Tan delta being measured to monitor _____ (Dielectric heat dissipation factor)
40. DGA being measured for insulating oil.. _____ (To monitor the health of TFP)
41. Transformer breather used for . _____ (To give Dry air and absorb the moisture in TFP Oil)
1. Traction Motor natural axes set by method _____ (KICK)
2. Current transformers are used to measure _____ .in AC systems.(High Currents)
46. _____ equipment offers protection against safety for equipment as well as human in the locomotive. **(HOM)**
1. The number of auxiliary motors starts along with ANNO _____ (5)
2. SJ is connected in series with... _____ (RS Shunting Resistor)
3. Tolerance of voltage in static converter _____ (415+-5%) .
50. _____ is .used as insulation and coolant in the Transformer of conventional Locomotives(**Inhibited Minerol oil as per IS12463**)
51. Tan delta test to detect. _____ (**Dielectric strength of Equipment |Health of**

Insulation]

1. Expand FRPCPY **.(Failure Rate percentage per year)**
2. Effective value of RC-network across a3,a4&a5,a6 in WAG7loco
(Resistance 1.5Ohms, Capacitance: 50Micro Farads)
 1. Type of traction motor bearing (Cylindrical Roller Bearings)- ..
 2. Shock pulse meter to.. (to check the vibration level of Bearings)
 3. Class of insulation for auxiliary motors winding (H)
4. UA is connected to **ARNO U&V phases** to read auxiliary power voltage corresponding to **Auxiliary winding voltage**
58. .. is used to estimate moisture content in transformer oil.(BDV Test)
59. Water content allowable in the transformer oil max .. in service oil, new filtered oil (35PPM, 25PPM)
60. Specific resistance at 90 C (OHM-cm) new oil 35x 1ohm Cm (min) (1X10¹² Ohm Cm)
61. Die electric dissipation factor (Tan delta) at 90c (IS-6267 71) for in service oil new filtered oil. (1.0max, 0.002max)
62. Acidity 0.5 mg KOH / Gm (max) in service for new filtered oil KOH/gm (0.05mg KOH/Gm)
 1. Sediments and perceptible sludge allowable in TFP oil .. (0.10% by mass)
 2. Transformer oil flash point minimum for serviceable oil and for new filtered oil. (140⁰ C, above 140⁰ C)
 1. Interfacial tension at 27degrees for new filtered oil (0.04 Neuton Meters)
 2. Oxidation inhibitor by mass (max) (>0.02%)
 3. Arc horn gap for WAG-7 Hitachi Traction Motor is ..(11.5mm to 13.5mm)
 4. The purpose of star delta starter for induction motor is to ..on line. (To reduce starting current)
69. VCB pressure switch setting cut in in M/s Schneider Make VCBs (4 to 4.5Kg/Cm²)
 1. PHGR oil strokes (40-60 per Minute)
 2. Tightness (torque) of GR segments (3.5Kg-m)
 3. Minimum thickness of GR segments . (7.8+/-20%)
 4. Main contact pressure of reverser/CTF (10+/-1Kg)
 5. Effective value of CAPTFP 3,4,5&6 .. (0.83micro Farad)
 6. EM contact pressure .. (900 to 1100gms)
 7. EM contactor main contact air gap (8.5+/-1mm)
 8. C118 contactor pressure contact (C118) air gap (5 to 8Kg Contact(C118) air gap 16 to 18mm)
 1. CGR contactor pressure.. (7.8+/-20%Kg)
 2. Transformer oil used for (Cooling of Insulation and winding.)
 3. Pyrometer is used to measure.. (Temperature)
 4. Specific gravity of fully charged cell .. (1240)
 5. Contact used for AC MVRF (C108)
 6. Hydrometer is used to measure. (Specific Gravity)
 7. CGR contacts thickness (46/36mm)(New/Condemned)
 8. CGR contacts opening . (29-33mm)
 9. The rating of ATFEX .. (60KVA)
 10. The current through RGR flows when ..are closed.(CGR 1—2 closed)
 11. Fully charged cell gives off at cathode and . at anode.(Water, Electrons)
89. The input supply of CHBA ..output .(380 to 415V, Output:110V)
90. Class of insulation class of material can with stand highest temperature. (C)
 1. TFVT input ..output 110V A.C (230VAC)
 2. The air gap between stator and rotor of MVRH .. (2mm)
 3. The air gap between stator and rotor of MVMT is .. (2mm)
 4. The size cable connected to ARNO .. (150Sqmm)
 5. Two pole synchronous motor runs at .. rpm(3000RPM)
 6. Un serviceable scrap is placed . on the form (DS dead stock) (DS-8)
 7. Class of insulation and temperature

Y= 90c A=105c E=120c B=130c F= 155c. H=180c, C=225c

1. RGR Resistance value .. (1.6Ohms)
2. R QOP resistances valve .. (3X3200Ohms)
3. R118 resistance (0.47Ohms)
4. RHOBA r
5. Resistance.. (210Ohms)
6. QOP/QOA coil resistance value . (1800Ohms)
7. Q30 coil resistance (1190Ohms)
8. Q44 /Q118 coil resistance value (3.8Ohms)
9. QLM/QE/QF/QRSI relays resistance..
(0.03ohms/0.03ohms/0.03ohms/0.03ohms)
1. RPS permanent field weakening resistance. (0.285Ohms)
2. Continuous current permissible through RPS (216Amps)
3. Meter used to check inter turn shorts in EP coils .. (Surge Comparison Tester)
1. Rating of HRC fuses used in series with RPS. ((100A,660V)
2. QVMT cut in pressure 15mm WG cut out (30mm)
3. QVRH cut in pressure 6 to 10mm WG cut out . (18mm)
4. QVSL cut in pressure 6mm cut out. (18mm Wire Gauge)
5. FYFR .. (First year Failure Report)
6. In WAG7 loco the BP drop is allowed up to .. (0.7Kg/cm2 for 5mins.)
7. In WAG7 loco the FP leak hole drop is allowed up to . (0.2Kg/cm2 for one minute)
117. In WAG7 loco the Standard setting of RGCP is cut in/cut out (8Kg/cm2(Cut in)/9.5Kg/cm2(cut out))
118. In WAG7 loco the standard setting of SWC cut in/cut out . (1Kg/cm2, 0.2Kg/cm2)
1. In WAG7 loco the standard setting of QPH is cut in/cut out .. (0.6/0.4Kg/Cm2)
2. In WAG7 loco the standard setting of RGAF is cut in/cut out.. (4.0/3.5)
3. In WAG7 loco the standard setting of P1 is cut in/cut out .. (4.8/4.6)
4. In WAG7 loco the standard setting of P2 is cut in/cut out . (4.6/4.4)
5. In WAG7 loco the standard setting of MR Safety Valve (SS2) is (10.5(+/-1)Kg/Cm2)
6. In WAG7 loco the BP Charging Time through A9 Emergency to release position should be .. (3 to 6Sec)
1. In WAG7 loco the Brake application/release time through SA9 is (8sec/12sec)
2. In WAG7 loco the Brake application/release time through A9 for goods loco is (15 to 25/25 to 40sec)
1. In WAG7 loco the raising / lowering time of pantograph is . (6 to 10sec)
2. In WAG7 loco the Metalised carbon strips in all pantographs are provided **for Current collection and with self lubricating characteristics**
3. In WAG7 loco the Duplex check valve is set at . (4.9Kg/cm2(+/-0.1))
4. In WAG7 loco the minimum pressure required to raise pantograph AM12 is (6Kg/cm2)
131. In WAG7 loco the lowering time of pantograph AM 12 is adjusted through.. (Throttle Valve)
1. In loco motives Air dryers are provided to adsorb moisture from -----(**MR1 &2 air.**)
2. RDSO SMI NO 197 is tells about. (Driving Techniques and use for Proportional brakes to prevent Wheel skidding on Electrical Locomotives)
1. In WAG7 SMGR PRV setting is .. (3.5Kg/cm²)
2. RDSO SMI NO 11 is for the (procedure for cleaning the pneumatic pipelines of Electric Locomotives by Blowing through)
1. Periodicity of AOH/TOH schedule for freight locos(WAG-7) (2Years)
2. Periodicity of IOH schedule for freight locos(WAG-7) (6Years)
3. Periodicity of POH schedule for freight locos(WAG-7) (10years+/-3Months)
4. Periodicity of IC schedule for freight locos(WAG-7) (180Days)
5. Periodicity of IB schedule for freight locos(WAG-7) (120Days)
6. Maintenance of transformer Tap changer is being done by section in electric loco sheds. (E5)

section)

142. equipments is carried out by sheds.(M3M5) Over hauling of pneumatic section by electric loco
143. bogies mechanical complaints are being carried out by electric loco sheds.(M6(Bogie Section) Heavy repairs of Section in
1. Planning dispatch of locos being done by section in electric loco sheds.(PPO section)
 2. Loco failures and analysis is being done by section in electric loco sheds.(Investigation section)
146. investigation of unusual occurrence is being done by. electrical loco sheds. (Investigation Section) Troubleshooting & Section in
147. measured during .. schedules) Wheel set clearances is being Schedule. (All minor
148. is being carried out by loco sheds.(E3TM section) Traction Motors over hauling ..section in electrical
149. section in electrical loco sheds.(E7 section) Electronic PCBs components are checked by
150. .section in electrical loco sheds.(M1 Section) Under frame inspection is carried out by
151. Material procurement of stores, updating of specification and test trail are maintained by section in electrical loco sheds (Stock and Non Stock stores section)
152. Full form of the following abbreviations.
1. CLW – Chittaranjan Locomotive Works
 2. COFMOW –Central Organisation for Modernization of Workshops
 3. DGS&D – Director General of supply and disposal
 4. M&P Items – Machinery and Plant items
 5. RSP – Rolling stock program
 6. PAC –Proprietary article certificate
 7. PL No. –Price List no.
 8. RITES – Rail India Technical Economic Services Limited
1. In STB1 signal AMSB_0102 LVCB on L Stands for (Driver's wish)
 2. Horse power of a WAG-9loco is (6000HP)
 3. Gear ratio in WAG-9 loco is (15:77)
 4. Type of Traction motors used in WAG9-locos (3Phase Squirrel Cage Induction Motor)
 1. Maximum tractive effort of a WAG9 -loco is (458KN)
 2. Maximum speed of a WAG9-loco is (100KMPH)
 3. Maximum braking effort of a WAG9 -loco is (260KN)
 4. Ampere- Hour capacity of a WAG-9 loco battery is (199AH)
 5. Parking brakes are provided on wheel no in WAG-9 loco (2,6,7,11 Wheels)
 6. Lubricant used in gear cases of three phases locos is (RR 460 Oil)
 7. Number of Bus stations available in three phase locos is (7 Bus stations available)
 8. For isolating VCD, switch no is to be placed on (237.1 is to be put on Zero position)
165. Switch no 154 has positions. (Three postions, Position-1 for Bogie-1 isolation, Position-II for Bogie-2 Iolation, Position-0 for both bogies in service)
166. in three phase locos is to SR coolant in Three phase locos) Purpose of oil cooling blowers (to Cool Both TFP oil and
167. Traction motor mounting

arrangements in three phase locos is
Brackets)

(On Two mounting

168. For raising PT-1 only from both cabs, switch is to be placed in

position.((Panto selector Switch) to be on One position)

169. For switching over to failure mode operation switch is to be placed in

position(152, to 1).

1. Constant speed (BPCS) activates at KMPH and above.(5KMPH)
2. Parking brakes will not apply through `BPPB if speed is more than KMPH.(2Kmph)
3. Number of DC to DC converters available in a three phase loco are (4)
4. VCB trips when SR oil temperature rises above degrees. (50⁰C)
5. In FTIL locos feed pipe coc number is (COC-136)

1. While moving a three phase loco as dead the position of following cocs shall be COC-47 , COC-70 , COC-74 , COC-136 . (open, close, close, close)
2. Maximum BC pressure applied when DBC is kept in full service position is (2.5Kg/cm²)
3. The brake release time through DBC in WAG-9 is Seconds.(45 to 60sec)
4. Anti-compounding valves are located near (Cab-1 &2 ALP side, top of Foot steps)
5. The pressure switch used for vigilance control is .(BC pressure switch: Pn.60)
6. The settings of compressor governors in WAG-9locos are And (8 & 10Kg/cm²)
1. The number paring brakes units available in WAG-9locos is **4**and available on wheel no.s **2,6,7,11**
2. In release position of DBC, BP is charged up to **5.4Kg/cm²**
3. KW rating of a Oil Cooling Blower motor in three phase loco is (30KW)
4. Instrument lamps works on **24V/110VDC** volts.
5. Rating of head light lamp in three phase locos is volts and Watts.(110VDC, 100W)
1. Capacity of a battery in three phase loco is AH.(199AH)
2. Primary Over current relay in three phase locos is (78A).
3. Power converter is isolated by switch No. (154)
4. Sub-system '06 corresponds to (BUR-1)
5. Power factor in three phase locos is (Unity Power factor)
6. Input and output of potential transformer is and respectively.(25KV, 200V)
1. Oil used in gear case of WAG9 & WAP7 locos **RR460**.
2. In 3Phase Locomotives, The acronym TCN stands for .(Train Communication Network)
1. In M/s BHEL make IGBT locomotives, TM1 firing is controlled by .(DCU2)
2. 25A8 module is controlled by M/s BHEL make IGBT SR.(DCU-3)
3. Pre charging contactor in SR is used for **(for Reducing Inrush current)**
4. When MCB 63.1/2 is tripped, It will consequently lead to (Bogie isolation due to High converter coolant temperature)
1. 411 location indicates .(VCU1 Rack)
2. Limits of OHE voltage during working of WAGlocomotive is kV to ___kV. **(17.5KV and 30KV)**
200. If temperature of SR exceeds degrees then TE/BE is reduced to 0 and exceeds degrees VCB will be off. **(64,80)**
1. The letters V-O-F on cab buzzer indicates (Vigilence, Overspeed, Fire)
2. Self hold mode means . (CEL will remain active for 10Mins)
3. The fault message F0101p1 results in .(Main Power Off)
4. S/R interlock activates after attaining a speed of kmph.(10Kmph)
5. In mode, working of VCD can be tested on standstill position in 3 locomotives.(Simulation)
1. ZBV stands for .(MU Train BUS)
2. The grease used for lubrication of bearings of FRA 6068 is .(SHC-120)

SIV,MPCS, VCD and control circuits:

Q.No.1	VCD is provided in the locomotive to		Ans: A
	A) monitors alertness of the crew	B) Monitor the Signals	
	C) Monitor Traction Motors	D) Monitor the Brakes	
Q.No.2	Duration of VCD vigilance cycle is		Ans: A
	A) 60 Secs	B) 39 Secs	
	C) 8 secs	D) 10 Secs	
Q.No.3	Duration of VCD warning cycle 2 is		Ans: A
	A) 08 Secs	B) 60 Secs	
	C) 32 Secs	D) 10 Secs	
Q.No.4	Duration for PB reset is		Ans: A
	A) 32 Secs	B) 60 secs	
	C) 10 Secs	D) 8 secs	
Q.No.5	Rating of Static converter used in WAG-7 locomotive is		Ans: A
	A) 180KVA	B) 100 KVA	
	C) 500 KVA	D) 1000KVA	
Q.No.6	Input voltage of SIV is		Ans: A
	A) 830V	B) 415V	
	C) 630V	D) 1000V	
Q.No.7	Equipment is used in SIV to detect the earth fault		Ans: A
	A) ZCT	B) CT	
	C) PT	D) None of the above.	
Q.No.8	Equipments used in Rectifier section of Static converter		Ans: A
	A) Diodes & Thyristors	B) Diodes & IGBT's	
	C) Thyristors & IGBTs	D) IGBT's	
Q.No.9	Rectifier used in static converter is to convert		Ans: A
	A) AC to DC	B) DC to AC	
	C) AC to AC	D) DC to DC	
Q.No.10	DC link voltage of SIV is		Ans: A
	A) 760V	B) 960 V	
	C) 800V	D) 600 V	
Q.No.11	Equipments used in Inverter section of SIV		Ans: A
	A) IGBTs	B) SCR's	
	C) Diode	D) Transmitters	
Q.No.12	Function on Inverter is to convert		Ans: A
	A) DC to AC	B) DC to DC	
	C) AC to AC	D) None of the above	
Q.No.13	IGBT stands for		Ans: A
	A) Insulated gate bipolar transistor	B) Integrated Bipolar Transmitter	
	C) Intellegent Gate Bipolar transmitter	D) None	
Q.No.14	GDU full form		Ans: A
	A) Gate drive unit	B) Gate Divider Unit	
	C) all of the above	D) none of the abpve	

Q.No.15	MPFDCS stands for		Ans: A
	A) Microprocessor based fault diagnosis and control system	B) Microprocessor speed recording system.	
	C) Mini portable fixed digital control system.	D) none of the above	
Q.No.16	ISCU 1 and 2 are provided in the locomotive to measure the currents of		Ans: A
	A) Traction motors	B) Auxiliary motors	
	C) Tap changer	D) none of the above	
Q.No.17	Equipment is provided in MPFDCS locos to measure TM and CHBA voltages		Ans: A
	A) SCU	B) ISCU	
	C) Display unit	D) CPU	
Q.No.18	Number of output cards available in MPFDC System		Ans: A
	A) 5 cards	B) 3 cards	
	C) 1 card.	D) 20 cards	
Q.No.19	Number of input cards available in MPFDCS		Ans: A
	A) 8 cards	B) 5 cards	
	C) 6 cards	D) 7 cards	
Q.No.20	Rating of main Transformer of WAG 9H Locomotive		Ans: A
	A) 6531 KVA	B) 5374 KVA	
	C) 6600 KVA	D) 6746 KVA	
Q.No.21	Input voltage of Traction converter of 3- ph locomotive		Ans: A
	A) 1269V	B) 2800 V	
	C) 300V	D) 3000 V	
Q.No.22	DC link voltage of Traction converter is		Ans: A
	A) 2800V	B) 1400 V	
	C) 3000 V	D) 1600 V	
Q.No.23	Voltage of Harmonic filter winding is		Ans: A
	A) 1154V	B) 1200 V	
	C) 900 V	D) 600 V	
Q.No.24	Rating of Traction converter is		Ans: A
	A) 1142 Amperes	B) 1242 Amperes	
	C) 1342 Amperes	D) 1042 Amperes	
Q.No.25	Number of I/O cards available in MICAS based 3 phase locomotive		Ans: A
	A) 8 Cards	B) 6 cards	
	C) 7 cards	D) 5 cards	
Q.No.26	Speed of 3- ph locomotive can be controlled by varying the _____ of the supply.		Ans: A
	A) Voltage and Frequency	B) Current	
	C) Resistance	D) none of the above	
Q.No.27	Number of power modules used in BHEL (IGBT)Traction converter of 3 ph locomotive		Ans: A
	A) 9 modules	B) 6 modules	
	C) 10 modules	D) 18 modules	
Q.No.28	DDU full form is		Ans: A
	A) Driver Display unit	B) Driver Desk Unit	
	C) Display display unit	D) none of the above	

Q.No.29	Full form of FDU		Ans: A
	A) Fire Detection unit	B) Fire Dissolving unit	
	C) Fire Developing unit	D) none of the above	
Q.No.	Match the following		Ans:
30	A) VCD	1) AC to DC conversion	A-6
31	B) Rectifier	2) DC link	B-1
32	C) Static converter	3) Over current protection	C-2

33	D) ISCU	4) Zero current transformer	D-5
34	E) Earth fault	5) TM currents	E-4
35	F) Fuse	6) Penalty brake	F-3

CONTROL CIRCUITS OF CONVENTIONAL LOCOMOTIVES AND BATTERIES

Q.No.1	For changing direction of loco movement, following is used		Ans: B
	A) CTF	B) Reverser	
	C) Shunting contactor	D) Pantograph	
Q.No.2	Twin Beam Head Light bulb has twin filament of		Ans: C
	A) 100 and 110 watts	B) 100 and 120 watts	
	C) 100 and 90 watts	D) 80 and 100 watts	
Q.No.3	Hydrometer is used for measuring		Ans: C
	A) level of electrolyte in BA	B) total charge stored in BS	
	C) specific gravity of electrolyte	D) terminal voltage of BA	
Q.No.4	Relay to detect abnormalities in TFP is		Ans: C
	A) QRSI	B) QOP	
	C) QLM	D) QOA	
Q.No.5	For protection of traction motors against over voltage, following relay is used		Ans: B
	A) QOP	B) Q20	
	C) QD	D) QRSI	
Q.No.6	AFL circuit works in case of		Ans: D
	A) train parting	B) chain pulling	
	C) brake application	D) both (a) & (b)	
Q.No.7	What is the voltage of OHE feeding power to WAG-7 loco		Ans: A
	A) 25 KV AC	B) 1500 V DC	
	C) 11 KV AC	D) 440 V AC	
Q.No.8	In DBR operation, traction motor works as		Ans: D
	A) AC motor	B) Alternator	
	C) DC motor	D) DC generator	
Q.No.9	In twin Beam headlight the rating of bulb is		Ans: B
	A) 24V, 70/75W	B) 24V, 90/100W	
	C) 110V, 70/75W	D) 110V, 90/100W	
Q.No.10	The input / output voltage ratings of the DC-DC converter of WAG - 7		Ans: C
	A) 110V / 110V	B) 110V/50V	
	C) 110V / 24V	D) 110V/20V	

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Q.No.11	In a twin beam Headlight, what is the voltage of bulb in "dimmer" operation?		Ans: C
	A) 110V	B) 55V	
	C) 24V	D) 12V	
Q.No.12	Position No. of Battery supply control MCB in SB – 2		Ans: B
	A) 110	B) 112.1	
	C) 100	D) 112	
Q.No.13	How many CPs are required for WAG – 7 loco for normal working of loco		Ans: A
	A) Minimum 2 CPs	B) Maximum 2 CPs	
	C) Minimum 3 CPs	D) Maximum 3 CPs	
Q.No.14	The specific gravity of Electrolyte of a lead acid battery at 27 °C should be		Ans: B
	A) 1.250	B) 1.200	

	C) 1.100	D) 1.180	
Q.No.15	Specific gravity of electrolyte is measured using.		Ans: C
	A) Thermometer	B) Hygrometer	
	C) Hydrometer	D) Lactometer	
Q.No.16	EM contactor pressure is		Ans: A
	A) 650 to 800 gms	B) 600 to 700 gms	
	C) 600 to 750 gms	D) 600 to 800 gms	
Q.No.17	Shunting contactors are provided in the loco for the purpose of		Ans: A
	A) Increasing the speed	B) To decrease the speed	
	C) To stabilize the speed	D) to stop the train.	
Q.No.18	The voltage of the each battery in WAG – 7 Locomotive is		Ans: A
	A) 11 v	B) 110 v	
	C) 4.2 V	D) 2.2 V	
Q.No.19	The voltage of the each battery in WAG – 9 Locomotive is		Ans: C
	A) 11 v	B) 4.2 v	
	C) 3.6 V	D) 2.2 V	
Q.No.20	In WAG – 9 loco 48 v DC - DC converter is used for		Ans: C
	A) Head lights	B) cab lights	
	C) churning fans	D) for angle transmitter	
Q.No.21	WAG – 9 locomotive battery capacity		Ans: C
	A) 75 AH	B) 100 AH	
	C) 200 AH	D) 400 AH	
Q.No.22	The Electrolyte used for NI- CD batteries		Ans: C
	A) Concentrated sulphuric Acid	B) Diluted Sulfuric ACID	
	C) potassium Hydroxide	D) None of the above	
Q.No.23	Breaking excitation transformer ATFEX purpose is to :		Ans: B
	A) Excitation of armature	B) Excitation of field	
	C) Excitation of both	D) Excitation of TEP	
Q.No.24	The fuse rating of CCPT is		Ans: C
	A) 6 AMPS	B) 10 Amps	
	C) 16 Amps	D) 35 Amps	

Q.No.25	the minimum pick up voltage of the SR contactor is		Ans: A
	A) 60 +/- 5 v	B) 65 +/- 5 v	
	C) 70 +/- 5 v	D) 75 +/- 5 v	
Q.No.26	Rating of the cab heaters		Ans: A
	A) 415 v, 500W	B) 230 V 500 W	
	C) 415 V, 250 W	D) 230 V , 250 W	
Q.No.27	Harmonic filter contactor is		Ans: D
	A) 8.41	B) 8.1	
	C) 8.2	D) all the above	
Q.No.28	TMB MCB current rating is		Ans: B
	A) 40 A	B) . 63 A	
	C) 32 A	D) 4.5 A	
Q.No.29	MCP MCB position number of MCB used for MCPs		Ans: A
	A) 47.1/1 & 47.1/2	B) 47.2/ 1& 47.2/2	
	C) 47.3/1 & 47.3/2	D) 47.4/1 & 47.4/2	
Q.No.30	Switch used for failure mode operation		Ans: C
	A) 154	B) 160	
	C) 152	D) 150	
Q.No.31	Max allowable speed , if harmonic filter is isolated		Ans: C
	A) 20 Kmph	B) 30 Kmph	
	C) 40 Kmph	D) 50 Kmph	
Q.No.32	The contactor is use for the function of Head light in WAG – 9		Ans: C
	A) 126	B) 218	
	C) 338	D) 48.2	
Q.No.33	The normal rated current range of Angle transmitter is		Ans: B
	A) 0 – 20 ma	B) 2 -20 ma	
	C) 0 -10 ma	D) 2 – 10 ma	
Q.No.34	The time setting of MRB timer to dis connect the starting capacitor is		Ans: B
	A) 5 Sec	B) 10 Sec	
	C) 15 Sec	D) 20 Sec	
Q.No.35	The rating of the fuse provided for Auxiliary winding in 3phase loco.		Ans: C
	A) 20 A	B) 30 A	
	C) 40A	D) 50A	
Q.No.36	the contactor BPS 15.15 is		Ans: A
	A) convertor contactor	B) pre charging contactor	
	C) Harmonic filter contactor	D) main CP contactor	
Q.No.37	The windings available in auxiliary transformer of WAP-4 loco are		Ans: A
	A) one primary – two secondaries	B) one primary – one secondary	
	C) two primary – two secondary	D) two primary – one secondary	
Q.No.38	Which switch is used to isolate traction motors		Ans: A
	A) HMCS	B) HVSI	
	C) HVMT	D) ALL THE ABOVE	

Q.No.39	which relay will pick up for earth faults during RB		Ans: D
	A) QOP1	B) QOP2	
	C) QOA	D) QOP1&2	
Q.No.40	BP1DJ is used for		Ans: A
	A) to trip DJ	B) to close DJ	
	C) to trip the pantograph	D) to stop the loco	
Q.No.41	The position No. of Panto selection Switch		Ans: C
	A)154	B)156	
	C)129.1	D)170	
Q.No.42	How many position for 154 switch		Ans: B
	A)5	B)4	
	C)3	D)1	
Q.No.43	MCB for machine room lighting		Ans: D
	A) 310.1/1	B) 310.7	
	C) 338.1	D) 310.4	
Q.No.44	correct arrangement of foot switches in WAG-7 & 9 from left to right in cabs		Ans: D
	A) PVCD PVEF PVSA	B) PVSA PVCD PVEF	
	C) PVEF PVSA PVCD	D) PVSA PVEF PVCD	
Q.No.45	RPS is used in loco for		Ans: B
	A) Field weakening resistor	B) Field diverting Resistor	
	C) Shunting resistor	D) Breaking Resistor	
Q.No.46	Battery negative is connected to loco body through		Ans: C
	A) HQOP	B) HQOA	
	C) HOBA	D) HQCVAR	
Q.No.47	Buzzer used in WAG – 9 loco is for		Ans: D
	A) Fire Alarm	B) For vigilance	
	C) For ACP	D) All the Above	
Q.No.48	Potential transformer provided on the roof of WAG – 9 loco		Ans: B
	A) For the functioning of BUR	B) to deviate UA meter	
	C) to deviate TE/BE meteres	D) All of the above	
Q.No.49	how many shunting contactors are provided in WAG – 7 loco		Ans: C
	A) 6 Nos	B) 12 Nos	
	C) 18 NOs	D) 24 nos	
Q.No.50	C118 contactor chromatic interlock time delay		Ans: B
	A) 4 Sec	B) 5 Sec	
	C) 6 Sec	D) 7 Sec	

AUXILIARY MOTORS OF CONVENTIONAL Locomotives:

Q.No.1	What is the use of ARNO converter in Locos	Ans: B
	A)DC to AC conversion	B)1Φ to 3Φ conversion
	C)AC to DC conversion	D)Cooling of RSI.
Q.No.2	What is the use of SIV in Locomotive	Ans: B
	A)DC to AC	B) 1ΦAC to 3ΦAC
	C)AC to DC	D)None of the above
Q.No.3	How 3ΦAC is generated in WAG-7 locos for Auxiliary cooling motors	Ans: C
	A)SIV	B)ARNO
	C)Bothe of the above	D) None of the above
Q.No.4	How many 3ΦAC motors available in WAG-7 Locos	Ans: C
	A)10	B)11
	C)12	D)13
Q.No.5	Which motor is used for cooling of Traction motor in WAG-7 Locos	Ans: C
	A)MVRH	B)MCP
	C)MVMT	D)MVSL
Q.No.6	MVRH motor is used to cooling of	Ans: C
	A)Smoothing Reactor	B)RSI
	C)Radiator	D)Traction Motor
Q.No.7	MVSL is used for cooling of	Ans: A
	A)Smoothing Reactor	B)RSI
	C)Radiator	D)Traction Motor
Q.No.8	MVSI is used for cooling of	Ans: B
	A)Smoothing Reactor	B)RSI
	C)Radiator	D)Traction Motor
Q.No.9	How many compressors available in WAG-7 locos	Ans: B
	A)2	B)3
	C)4	D) None of the above
Q.No.10	Pump used for circulating transformer oil is	Ans: A
	A)MPH	B)MVRH
	C)MVSI	D)MCPA
Q.No.11	MVRF used for cooling of	Ans: A
	A)RF elements	B) Radiators
	C)RSP	D)RS elements
Q.No.12	Auxiliary Motors run on	Ans: B
	A)1Φ AC 110 V supply	B) 3Φ AC 440 supply
	C) 110V DC supply	D)230V AC supply
Q.No.13	Baby compressors is used for	Ans: A
	A)Initial pressure for panto raising & VCB closing	B) For closing Line contactors
	C)For creating brake pressure	D)for operating Reversers/CTFS
Q.No.14	Baby compressor input supply is	Ans: A
	A)110V DC	B)110 V AC
	C)230V AC	D)430V AC
Q.No.15	Which type of motor is Baby compressor	Ans: A
	A)DC series	B)DC shunt wound

	C)Compound wound	D)None of the above.	
Q.No.16	All Aux motors excluding Baby compressor , basically these are motor		Ans: D
	A)3 Φ synchronous induction motor	B)DC series motor	
	C)Universal motor	D)3 Φ Asynchronous Induction motor	
Q.No.17	Instrument used for Air delivery measurement		Ans: B
	A) Non Contact Thermometer	B)Anemometer	
	C) Non metal speedometer	D) Multimeter	
Q.No.18	Bearing used for MVSI/SL		Ans: D
	A)6316	B)6305	
	C)6304	D)6306	
Q.No.19	Maximum allowable temperature of Bearing 6313 on running		Ans: A
	A)80°C	B)50°C	
	C)60°C	D)100°C	
Q.No.20	What effects due to unbalance of an impeller		Ans: D
	A)Heating of winding	B)Vibration of motor	
	C)Bearing damage	D)Vibration of motor & Bearing damage.	
Q.No.21	Tests on auxiliary motor stators		Ans: D
	A)PI	B)Surge test	
	C)Megger	D)All of the above	
Q.No.22	Tests on rotor of Induction motor		Ans: B
	A)Megger	B)Growler	
	C)Surge test	D)PI	
Q.No.23	Vibration is measured in		Ans: B
	A)db	B)mm/sec	
	C)Amps	D)Grams	
Q.No.24	Purpose of scavenger motors in WAG-9 locos		Ans: C
	A)Cooling	B)Air sucking	
	C)Dust collection	D)None of the above	
Q.No.25	Location of compressors in WAG-7 & WAG-9 locos		Ans: A
	A)Inside the loco, under slung	B)Under slung, inside	
	C)Inside, Inside	D)Under slung, under slung	
Q.No.26	How many compressors provided in WAG-9 locos		Ans: A
	A)2	B)3	
	C)4	D)None of the above	
Q.No.27	Compressor rating in WAG7 & WAG9 respectively		Ans: D
	A)1750 LPM, 1000 LPM	B)1000 LPM,1000 LPM	
	C)1750 LPM,1750 LPM	D)1000 LPM, 1750 LPM	
Q.No.M	Match the following		Ans
Q.No.28	A)Arno	1)6305	A-6
Q.No.29	B)MVMT	2)6306	B-5
Q.No.30	C)MVSL/SI	3)6304	C-2
Q.No.31	D)MCP	4)6310	D-4
Q.No.32	E)MPH	5)6313	E-I

Q.No.33	F)MCPA	6)6316	F-3
Q.No.M	Match the following Bearings used in 3Phase locos		Ans
Q.No.34	A)OCB	1)6206	A-3
Q.No.35	B)TMB	2)6312	B-2
Q.No.36	C)MRB	3)6313,6316	C-4
Q.No.37	D)SCTMB	4)6208	D-I
Q.No.M	Match the following test on various parts		Ans
Q.No.38	A)Stator	1)Growler	A-2
Q.No.39	B)Rotor	2)Surge test	B-I
Q.No.40	C)Impeller	3)Bore dia measurement	C-4
Q.No.41	D)End shields	4)DPT	D-3
Q.No.M	Match the following		Ans
Q.No.42	A)OCB	1)Traction motor cooling	A-4
Q.No.43	B)TMB	2)SR Oil/ Water circulating	B-I
Q.No.44	C)MRB	3)Transformer oil Circulating	C-5
Q.No.45	D)TFPMPH	4)Radiator Cooling	D-3
Q.No.46	E)SRMPH	5)Machine Room Cooling Purpose.	E-2
Q.No.47	VPI stands for	Ans: Vaccumm Pressure Impregnation	
Q.No.48	Bearing sound measured in	Ans: Decibels (DB)	

TRANSFORMERS, SMGR, GR OF CONVENTIONAL LOCOMOTIVES:

1. Current is collected from OHE to A.C.loco through
 - (c)
 - (a) Transformer
 - (b) circuit breaker
 - (c) pantograph
 - (d) servo motor
2. Taps on autowinding of TFP are provided for
 - (a)
 - (a) speed control
 - (b) protection from surges
 - (c) shorting of windings
 - (d) avoiding overloading of TFP
3. KVA rating of TFP used in WAG-7 locomotives
 - (d)
 - a) 3460 KVA
 - b) 3900 KVA
 - c) 6531 KVA
 - d) 5400 KVA
4. KVA rating of TFP used in WAG-9 locomotives
 - (c)
 - (a)3460 KVA
 - (b)3900 KVA
 - (c)6531 KVA
 - (d)5670 KVA
5. In Traction Transformer
 - (d)
 - a) A33-A0 is Auto Transfer Winding
 - b) A34-A0 is Primary Winding
 - c) a0 – a1 is Auxiliary Winding
 - d) All are correct

6. Relay to detect abnormalities in TFP is

(c)

- (a) QRSI
- (b) QOP
- (c) QLM
- (d) QOA

7. DP Test is done to detect

(d)

- (a) Acetylene content in oil
- (b) Methane level
- (c) inside void in axle
- (a) surface crack 8.. Minor penalties can be imposed to withhold

(d)

- a. 2 sets of passes
- b. 2 increments for one year
- c. promotion for one year
- d. all the above

9. What is the time interval between IA and IB schedule of WAG-7 loco is

(b)

..... days

- a. 45
- b. 60
- c. 90
- d. 30

10. Multimeter is used to measure

(d)

- a. voltage only
- b. current only
- c. resistance only
- d. all of the above

1. In WAG-7 Loco, TFP has Nos. of taps for voltage control

- (b) a. 16
- b. 32
- c. 33
- d. 22.

2. Pressure setting of PRV is

- (a) a. 3.5 kg/cm²
- b. 3.0 kg/cm²
- c. 2.0 kg/cm²
- d. depending upon the type of loco

3. PRV is located in

- (b) a. BA panel
- b. ZSMGR panel
- c. DRIVER CAB
- d. depending upon the type of loco

1. Quantity of oil in transformer of WAG -7 loco is approximately

- (b) a. 2500 ltrs
- b. 2000 ltrs
- c. 1500 ltrs
- d. 1200 ltrs

2. Quantity of oil to be filled in GRADUATOR of wag 7 loco is

- (c) a. 56 ltrs
- b. 65 ltrs
- c. 70 ltrs
- d. 85 ltrs

16.. Minimum BDV of the oil to be used in transformer and graduator is

(c)

- a. 80 KV
- b. 50 KV
- c. 60 KV
- d. 65 KV

17.. RCAPTFP 1 and RCAPTFP 2 damping panel value are

(c)

- a. 40 uf ±10 %
- b. 45 uf ±10 %
- c. 50 uf ±10 %
- d. 55 uf ±10 %

1. RCAPTFWA damping panel values are

- (a) a. 25 uf ±10 %
- b. 30 uf ±10 %
- c. 50 uf ±10 %
- d. 45 uf ±10 %

2. CAPTFP 1 and CAPTFP 2 damping panel value is

- (a) a. 0.08 uf ±10 %
- b. 0.10 uf ±10 %
- c. 0.06 uf ±10 %
- d. 0.04 uf ±10 %

3. CAPTFWA damping panel value in ARNO loco is

- (a) a. 1 uf ±10 %
- b. 0.47 uf ±10 %
- c. 50 uf ±10 %
- d. 25 uf ±10 %

4. CAPTFWA damping panel value in SIV loco is

- (b) a. 1 uf ±10 %
- b. 0.47 uf ±10 %
- c. 50 uf ±10 %
- d. 25 uf ±10 %

(c) (a)

(b)

(b)

22. NR stands for a.non reversible

b.not reducing c. notch repeater d.notch reverser

c. pressure	
	(a)
c.	
	(c)
c.	
	(a)
c. 4.7 Ω	
	(b)
	(a)
	(a)
	(a)
	(a)
	(a)
c.10	
	(a)
	(b)
c. 1	
	(c)

1. QPH relay is a.Relay for checking working of MPH b. Relay for checking working of TFP c.Relay for checking working of SRMPH d. Relay for checking working of NR.

2. PRV stands for a.Pressure releasing valve b. pressure regulating valve retaining valve d. pressure reducing valve

25 RGR stands for

b. Regulating resistance d. Reciprocating resistance

b. Regulating resistance d. Reciprocating resistance

a.Resistance for graduator Permanent resistance for graduator

b. 100 k Ω

1. RPGR stands for a.Resistance for graduator Permanent resistance for graduator

2. RGR value in ohms is a.1.61 Ω d. 1.5 Ω

28. RPGR value in ohms is

a.1.61 Ω \pm 10 %

b. 100 k Ω \pm 10 %

c. 4.7 Ω \pm 10 %

d. 1.5 Ω \pm 10 %

29. Normal oil level for GR is

a.Above +20 C

b.below +20 C

c.Between +20 C To -20 C

d. Above +60 C

30. Complete transformer along with all accessories weighs around

a.13 tonne

b.10 tonne

c.20 tonne

d. 5 tonne

31. Complete transformer along with all accessories weighs around
 a.13 tonne c.20 tonne
 b.10 tonne d. 5 tonne
32.
 b.break down value d. bi dielectric value
- b. 50 strokes/minutes 100 strokes/minutes
 BDV stands for a.Break down voltage c.Break
 dual voltage
1. Per minute strokes for PHGR are a.60 strokes/minutes
 strokes/minutes d.
2. Ideal pressure for working of SMGR is a. 3.5 kg/cm² b.3.0
 kg/cm²
 c. 2.0 kg/cm² d. depending upon the type of loco
35. How many CGRs are there in a locomotive
 a. 2 b.3
 d. 4
36. For converting a.c. to d.c., following equipment is used in locos
 (a) Transformer
 (b) Smoothing reactor
 (c) Silicon Rectifier
 (d) Circuit breaker
37. For changing direction of loco movement, following is used
 a) CTF b) Reverser
 b) Shunting contactor d) Pantograph

OF THE ABOVE

8. PHGR starts working after

(d) (a) 1st notch
notch

(b) 18 notch (c) 16th notch

(d) 6th

E6 Section

: (CONTROL CIRUITS)

Q.No.1	Size of each cable connected to Traction motor in WAP-4 is		Ans: D
	A) 120 Sqmm	B) 150 Sqmm	
	C) 200 Sqmm	D) 300 Sqmm	
Q.No.2	Size of each cable connected to MVMT 1&2 / MVRH in AC locomotive is		Ans: C
	A) 3 Sqmm	B) 10 Sqmm	
	C) 25 Sqmm	D) 50 Sqmm	
Q.No.3	Size of each cable connected to MCP/MPH is		Ans: B
	A) 3 Sqmm	B) 10 Sqmm	
	C) 25 Sqmm	D) 50 Sqmm	
Q.No.4	Size of cable used in control circuit is		Ans: A
	A) 3 Sqmm	B) 10 Sqmm	
	C) 25 Sqmm	D) 50 Sqmm	
Q.No.5	Size of cable connected in ARNO		Ans: D
	A) 3 Sqmm	B) 10 Sqmm	
	C) 25 Sqmm	D) 120 Sqmm	
Q.No.6	Resistance value of RQOP is		Ans: D
	A) 150 Ω	B) 210 Ω	
	C) 3900 Ω	D) 3200 Ω	
Q.No.7	Resistance value of RPQOP is		Ans: A
	A) 150 Ω	B) 210 Ω	
	C) 3900 Ω	D) 3200 Ω	
Q.No.8	Resistance value of RQ30 is		Ans: B
	A) 150 Ω	B) 3900 Ω	
	C) 210 Ω	D) 680 Ω	
Q.No.9	Relay based conventional WAG-7 Locos CCLS fuse rating is		Ans: D
	A) 6 Amps	B) 35 Amps	
	C) 16 Amps	D) 10 Amps	
Q.No.10	The rating of cab heater is		Ans: A
	A) 500 Q, 500 W	B) 400 Q, 500 W	
	C) 100 Q, 500 W	D) 50 Q, 500 W	
Q.No.11	BP1 DJ is pressed		Ans: D
	A) to start the Loco	B) to stop the Loco	
	C) to Close DJ	D) to trip DJ	
Q.No.12	BP2 DJ is pressed		Ans: C
	A) to start the Loco	B) to stop the Loco	
	C) to Close DJ	D) to trip DJ	
Q.No.13	DPWCS full form		Ans:A
	A) Distributed Power Wireless Control System.	B)	
	C)	D)	

Q.No.14	TCAS full form		Ans:A
	A) Train Collision Avoidance System	B)	
	C)	D)	
Q.No.15	No. of Roof bars used in WAG-7		Ans: C
	A) 4	B) 6	
	C)8	D) 10	
Q.No.16	Cleats used for TM Cable		Ans: C
	A) Wood	B) Iron	
	C) SRBGF	D) SR	
Q.No.17	In WAG-7 LSGR0 indication lamp is used for		Ans:A
	A) Position of GR of Trail Loco in MU Loco.	B) GR not working condition	
	C) Battery OFF-Condition	D) SMGR not working condition	
Q.No.18	ET-1 gap is		Ans:A
	A) 210 mm	B) 90 mm	
	C) 100mm	D) 280mm	
Q.No.19	Breaking excitation transformers purpose is to		Ans:C
	A) Auxiliary motors control	B) Brake application	
	C) Excitation of field	D) SMGR control	
Q.No.20	LECC is provided in the Loco for		Ans:A
	A) Check the Healthiness of fuse.	B) Head Lights	
	C) Relays	D) Horn application	

M1&M6 Section.

Q.No.1	Type of Bogies used in WAG-7		Ans: B
	A)B-B Bogie	B)CO-CO Bogie	
	C)BO-BO Bogie	D)None of the above	
Q.No.2	No. of sand boxes in WAG-7		Ans: C
	A)6	B)9	
	C)8	D)2	
Q.No.3	Hand brake will be provided on	wheel No.	Ans: D
	A) Wheel No 9	B) Wheel No 6	
	C) Wheel No 1	D) Wheel No 2	
Q.No.4	The type of lubricant used in W	AG-7 Gear case	Ans: A
	A)Cadmium compound	B)Block compound	
	C)TAR	D)S.P.150 Oil	
Q.No.5	D.P.T used to detect		Ans: A
	A)Surface crack	B)Blow hole	
	C)Internal Flaw	D)None of the above	
Q.No.6	No of axle boxes in WAG-7 loco		Ans: C
	A)6	B)16	
	C)12	D)24	

Q.No.7	MPT test full form		Ans: C
	A)Magnetic powder test	B)Magnetic liquid test	
	C)Magnetic particle test	D)Metal particle test	
Q.No.8	Range of B.C piston travel		Ans: B
	A)100-110mm	B)107-117mm	
	C)80-100mm	D)90-107mm	
Q.No.9	Height of rail Guard		Ans: B
	A)103-118mm	B)104-119mm	
	C)105-118mm	D)102-116mm	
Q.No.10	Wheel to wheel distance		Ans: B
	A)1596 to 1600mm	B)1595.5-1599mm	
	C)1594-1600mm	D) None of the above	
Q.No.11	No. of brake blocks required per loco in WAG-7		Ans: D
	A)20	B)19	
	C)22	D)24	
Q.No.12	Diameter of New wheel of WAG	-7	Ans: A
	A)1097	B)1087	
	C)1077	D)1066	
Q.No.13	Buffer height range		Ans: A
	A)1030-1105 mm	B)1036 - 1100mm	
	C)1035-1200mm	D)1040-1100mm	
Q.No.14	Full form of CBC		Ans: B
	A)Cylindrical buffer coupling	B)Centre buffer coupling	
	C)Centre body coupling	D)Centre bogie coupling	
Q.No.15	Permissible wheel diameter difference between bogie to bogie		Ans: D
	A)5-10mm	B)15-30mm	
	C)20-25mm	D)15-20mm	
Q.No.16	Condemned size of wheel diameter in WAG-7		Ans: B
	A)1105mm	B)1016mm	
	C)1030mm	D)1000mm	
Q.No.17	Gear ratio of WAG-7 Loco is		Ans: B
	A)21:107	B)16:65	
	C)17:55	D)18:96	
Q.No.18	Back lash is the measure of gap between		Ans: A
	A)Bull gear and pinion teeth	B)Bogie and Axle box	
	C)S.T and T.M	D)None of the above	
Q.No.19	No. of teeth measured for "k" value of WAG-7 Bull gear.		Ans: D
	A)10	B)12	
	C)26	D)08	
Q.No.20	In WAG-7 centre pivot is used to		Ans: C
	A)Transfer vertical load	B)Transfer lateral load	
	C)Transfer tractive and braking forces during run.	D)None of the above	

Q.No.21	Slack adjuster is used to adjust		Ans: C
	A)Adjust buffer height	B)Brake power adjustment	
	C)Brake cylinder piston lengths	D)Adjust rail guard	
Q.No.22	Diameter of wheel is measured by		Ans: C
	A)Profile gauge	B)screw gauge	
	C) wheel gauge	D)tong tester	
Q.No.23	Measuring Instrument to measure R.W,F.W&T.W is		Ans: C
	A)Profilometer	B)"D" gauge	
	C)Profile Gauge	D)Wire gauge	
Q.No.24	'D' shackles are connected between		Ans: D
	A)Wheel to Wheel	B)Body to Body	
	C)Bogie to Bogie	D)Body to Bogie	
Q.No.25	No of pull rods present in WAG	-7 loco	Ans: B
	A)16	B)08	
	C)32	D)12	
Q.No.26	No of primary vertical shock absorbers per bogie in WAG-7		Ans: B
	A)2	B)4	
	C)6	D)10	
Q.No.27	Type of Bogie OF WAG-7		Ans: B
	A)Casting	B)Fabricated Bogie	
	C)Cast Iron	D)None of the above	
Q.No.27	Axle box grease used in WAG-7		Ans: B
	A)RR460	B)RR3	
	C)RR5	D)RR600	
Q.No.28	Types of Bearings in WAG-7 axle box		Ans: B
	A)Conical	B)Rollar	
	C)Taper roller	Needle rollar	
Q.No.29	Type of bearing used in suspension tube WAG-7		Ans: C
	A)Roller	B)Conical	
	C)Taper roller	D)Needle bearing	
Q.No.30	Gap between brake block and condition of WAG-7	wheel interface on released	Ans: C
	A)20mm	B)15mm	
	C)10mm	D)5mm	
Q.No.31	Gap between sander nozzle to wheel face WAG-9		Ans: D
	A)48	B)32	
	C)30	D)40	
Q.No.32	Sand nozzle height above rail WAG-7		Ans: D
	A)120	B)100	
	C)80	D)60	
Q.No.33	No of outer helical springs per bogie WAG-7		Ans: C
	A)02	B)06	

	C)08	D)10	
Q.No.34	No of inner helical springs per bogie WAG-7		Ans: B
	A)10	B)08	
	C)16	D)02	
Q.No.35	Draft gear is present in		Ans: B
	A)Centre pivot	B)CBC	
	C)Compressor	D)SIV	
Q.No.36	SWL full form		Ans: C
	A) shot work load	B)Slow work load	
	C)safe working load	D)None of the above	
Q.No.37	No of color codes given for tested helical springs of WAG-7		Ans: C
	A) 2	B)5	
	C)4	D)7	
Q.No.38	1 Inch is equal to		Ans: B
	A) 24.5mm	B) 25.4mm	
	C)23.5mm	D)26.5mm	
Q.No.39	Type of TM provision in bogie WAG-7		Ans: A
	A) Axle Hung Nose suspended	B)Axle having bogie fixed	
	C)Torque arm	D)None of the above	
Q.No.40	Conical rubber pads are provided for WAG-7		Ans: A
	A) End axle box	B)middle Axle box	
	C)all axle boxes	D)None of the above	
Q.No.41	The type bushes used in Eq beam +compensating beam		Ans: C
	A) Iron bush	B)Plastic Bush	
	C)Polyamide self lubricating bush	D)Nylon bush	
Q.No.42	No of side bearers provided for WAG-7 loco		Ans: A
	A) 08 Per loco	B)6 Per loco	
	C)5 Per loco	D)4 Per loco	
Q.No.43	Racers and throwers are provided on		Ans: C
	A) Centre pivot	B)Side bearers	
	C)On the journal	D)on the bogie	
Q.No.44	No of brake cylinder provided per bogie in WAG-7 Loco.		Ans: B
	A) 08	B)04	
	C)06	D)07	
Q.No.45	Strongest weld joint is obtained by		Ans: B
	A) Gas welding	B)MIG welding	
	C)Arc welding	D)None of the above	
Q.No.46	MIG welding stands for		Ans: B
	A) Material inert gas welding	B)metal inert gas welding	
	C)Molten inert gas welding	D)None	
Q.No.47	Match the following		Ans
	A) Slack adjuster	1)Side Bearer base plate	A-4

B)Taper roller

B-3

2)Equalizer beam

	C)Spigot	3)Suspension tube	C-1
	D)Polyamide self lubricating bush	4)For brake adjustment	D-2
	E)Bottom stopper plate	5)Centre pivot	E-5

M6 section : **WAG-9**

Q.No.01	No of parking brakes in WAG-9		Ans: C
	A) 02	B)03	
	C)04	D)05	
Q.No.02	TBU Stands for		Ans: B
	A) Thread brake unit	B)Tread brake Unit	
	C)Top brake unit	D)None of the above	
Q.No.03	PBU stands for		Ans: B
	A) poor brake unit	B)Parking brake unit	
	C)Parallel brake unit	D)None of the above	
Q.No.04	In WAG-9 loco TM is connected to Bogie by		Ans: B
	A) Rocker arm	B)Torque arm	
	C)Axle guide	D)Centre pivot	
Q.No.05	In WAG-9HC 'C' stands for		Ans: B
	A) Compressor	B)Conventional brake rigging	
	C)CBC	D)None of the above	
Q.No.06	Type of axle box bearing used inWAG-9		Ans: A
	A) CRU (Cylindrical roller unit) – 150 Type	B)wiring type	
	C)Tapper roller	D)None of the above	
Q.No.07	In WAG-9 grease used on non gear end of suspension tube		Ans: A
	A) SHC-120	B)RR3	
	C)Shell gadus	D)None of the above	
Q.No.08	Axle box grease used in WAG-9		Ans: C
	A) SHC-120	B)RR3	
	C)Shell gadus	D)RR460	
Q.No.09	Parking brake units are available on wheel No.		Ans: B
	A) 1,5,7&12	B)2,6,7&11	
	C)All the wheels	D)3,6,8&9	
Q.No.10	Lubrication oil used in WAG-9 gear case.		Ans: D
	A) RR360	B)RR260	
	C)RR560	D)RR460	
Q.No.11	Types of dampers available in WAG-9		Ans: D
	A) 2	B)5	
	C)8	D)4	
Q.No.12	Type of gears used in WAG-9 TM, Pinion & bull gear		Ans: A
	A)Helical gear	B)Spur gear	
	C)Bevel gear	D)Rack and pinion	
Q.No.13	Gear ratio of WAG-9H , TM and bull gear		Ans: B
	A) 200:107	B)21:107	

	C)23:108	D)24:125	
Q.No.14	No of 'D' shackle in WAG-9		Ans: C
	A) 5	B)3	
	C)4	D)7	
Q.No.15	No of sand boxes in WAG-9 per bogie		Ans: C
	A) 5	B)3	
	C)4	D)7	
Q.No.16	No of traction link housing per loco		Ans: B
	A) 2	B)4	
	C)5	D)1	
Q.No.17	No of spher blocks required for Torque arm.		Ans: C
	A) 4	B)3	
	C)2	D)5	
Q.No.18	The specified torque for tightening axle guide and torque arm bolts		Ans: B
	A) 540NM	B)640NM	
	C)440NM	D)740NM	
Q.No.19	The specified torque for tightening traction link bolts		Ans: A
	A) 110NM	B)150NM	
	C)120NM	D)116NM	
Q.No.20	No of spheriblocks used for one axle guide		Ans: A
	A) 2	B)1	
	C)3	D)4	
Q.No.21	Type of nuts used to tightened axle guide bolts torque arm bolts		Ans: B
	A) Nylock nut	B) F-S steel locknut	
	C)M.S nut	D) None of the above	
Q.No.22	The specified torque for tightening retaining plate		Ans: A
	A) 80NM	B)60NM	
	C)90NM	D)50NM	
Q.No.23	How many number of brake blocks are provided on a wheel of WAG-9		Ans: C
	A) 2	B)6	
	C)4	D)5	
Q.No.24	How many brake keys required for WAG-9 loco per wheel		Ans: C
	A) 3	B)4	
	C)2	D)1	
Q.No.25	The reason for converting TBU/PBU brake system in WAG-9 to conventional brake rigging		Ans: D
	A) Simple design to maintain	B)Low cost components	
	C)Less weight when compared to TBU & PBU	D)All of the above	
Q.No.26	Match the following		Ans
	A) Spheriblocks	1)Traction link housing	A-5
	B)'V' ring	2)0.20 o 0.97mm	B-1
	C)TBU provided on W.No	3)SHC-120	C-4
	D)WAG-9 TM pinion and bull gear backlash	4)1,3,4,5& 8,9,10,12	D-2
	E))Non gear end suspension tube grease of WAG-9	5)Torque arms & axle guides	E-3

M2 Section :

Q.No.1	Rail Guard height		Ans: A
	A) 119mm to 104mm	B) 106mm to 118mm	
	C) 110mm to 125mm	D) 108mm to 120mm	
Q.No.2	Buffer Height		Ans: A
	A) 1105mm to 1030mm	B) 1108mm to 1020mm	
	C) 1100mm to 1010mm	D) 1104mm to 1040mm	
Q.No.3	Knuckle Hole Dia		Ans: A
	A) 40.0mm to 48.0mm	B) 41.0mm to 49.0mm	
	C) 42.0mm to 50.0mm	D) 39.0mm to 47.0mm	
Q.No.4	Clevis hole Dia		Ans: A

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	A) 37.0mm to 45.0mm	B) 38.0mm to 46.0mm	
	C) 39.0mm to 47.0mm	D) 40.0mm to 48.0mm	
Q.No.5	Yoke Pin hole Dia		Ans: A
	A) 95.02mm to 99.9mm	B) 96.02mm to 98.9mm	
	C) 97.02mm to 99.9mm	D) 98.02mm to 99.9mm	
Q.No.6	Knuckle nose wear limit gauge.		Ans: A
	A) 9.5mm	B) 8.4mm	
	C) 9.6mm	D) 9.4mm	
Q.No.7	Yoke pin dia in mm new?		Ans: A
	A) 88.9mm	B) 100mm	
	C) 101mm	D) 102mm	
Q.No.8	How many types of Draft gears,		Ans: A
	A) 2	B) 4	
	C) 6	D) 8	
Q.No.9	Number of Look Out glasses in Locomotive.		Ans: B
	A) 2	B) 4	
	C) 8	D) 16	
Q.No.10	What is CBC Stands for		Ans: B
	A) Center Body Coupler	B) Centre Buffer Coupler	
	C) Center Bogie Coupler	D) None of them	
Q.No.11	How many Air filters are there in WAG-7 locomotive		Ans: A
	A) 24 nos	B) 12 nos	
	C) 20 nos	D) 15 nos	
Q.No.12	CBC Height from Rail Guard.		Ans: C
	A) 1050mm to 1109mm	B) 1015mm to 1105mm	
	C) 1040mm to 1105mm	D) 1060mm to 1110mm	
Q.No.13	In WAG-7 use of Cattle Guard		Ans: B
	A) Loco Balancing	B) To protect under body Equipments.	
	C) 1 and 2	D) none	
Q.No.14	In WAG-7 Air Filter make		Ans: A
	A) FILTECH	B) HTEA	
	C) FAS	D) SIL	

Q.No.15	CBC Knuckle wearing Instrument Gauge	Ans: A
	A) Knuckle stretch and nose wear gauge	B) Contour worn limit
	C) Contour worn limit gauge No.2	D) None of them
Q.No.16	In WAG-7 CBC weight	Ans: B
	A) 150Kgs	B) 200 Kgs
	C) 225Kgs	D) 250 Kgs
Q.No.17	CBC Sticker casting wear plate thickness new ?	Ans: D
	A) 8mm	B) 5mm
	C) 10mm	D) 6mm
Q.No.18	CBC Sticker casting "worn out" thickness	Ans: A
	A) more than 5mm	B) more than 6mm
	C) more than 4mm	D) more than 3mm
Q.No.19	Knuckle pin dia in mm new	Ans: A
	A) 41.2mm	B) 41.6mm
	C) 36.5mm	D) 40.2mm
Q.No.20	Clavish pin dia in mm new?	Ans: A
	A) 38.0mm	B) 36.0mm
	C) 35.0mm	D) 34.0mm

M3&M5 Section: Question Bank.

Q.No.1	Type of pantographs used for WA-7 loco is	Ans: A
	A)AM12	B)AM92
	C)IR03	D)PAN-03
Q.No.2	AM12, AM92 are types of equipments used in WAG-7 loco	Ans: A
	A)Pantographs	B)Transformer
	C)Servomotor	D)DJ
Q.No.3	Brake applicaton time through A9 in WAG-7 Loco	Ans: D
	A)18 to 24 sec	B)10 to 15sec
	C)5 to 10 sec	D)15 to 25sec
Q.No.4	BC pressure through SA9 applied condition.	Ans: C
	A) 1.8 kg/cm ²	B)2.0 kg/cm ²
	C)3.5 kg/cm ²	D)2.5 kg/cm ²
Q.No.5	BC pressure through A9 applied condition.	Ans: C 1
	A)2.2 kg/cm ²	1 B)3.5 kg/cm ²
	C)1.8 kg/cm ²	1 D)3.0 kg/cm ²
Q.No.6	Nominal pressure to Raise pantograph	Ans: D
	A)8.0 kg/cm ²	B)2.0 kg/cm ²
	C)7.0 kg/cm ²	D)4.5 kg/cm ²
Q.No.7	The standard setting of Brake Pipe pressure in WAG-7 loco	Ans: B 1
	A)6.0 kg/cm ²	B)5.0 kg/cm ²
	C)5.5 kg/cm ²	D)4.5 kg/cm ²
Q.No.8	Standard setting of feed pipe pressure in WAG-7	Ans: A
	A)6.0 kg/cm ²	B)5.0 kg/cm ²

	C)6.5 kg/cm ²	D)8.0 kg/cm ²	

Q.No.9		Ans: C
	A)0.3 kg/cm ²	B)1.0 kg/cm ²
	C)0.7 kg/cm ²	D)2.0 kg/cm ²
Q.No.10	Maximum MR pressure drop is allowed for 5 min is	Ans: D
	A)1.2 kg/cm ²	B)1.0 kg/cm ²
	C)1.5 kg/cm ²	D)0.8 kg/cm ²
Q.No.11	The standard setting of RGCP in WAG-7 loco is	Ans: C
	A)8.0 kg/cm ² to 10 kg/cm ²	B)7.5 kg/cm ² to 8.5 kg/cm ²
	C)8.0 kg/cm ² to 9.5 kg/cm ²	D)6.5 kg/cm ² to 7.5 kg/cm ²
Q.No.12	In WAG-7 standard settings of RGEB	Ans: A
	A)3.0 kg/cm ² to 4.2 kg/cm ²	B)3.0 kg/cm ² to 4.0 kg/cm ²
	C)3.0 kg/cm ² to 5.0 kg/cm ²	D)5.0 kg/cm ² to 6.0 kg/cm ²

Q.No.13	In WAG-7 standard settings of SWC s		Ans: B
	A)05 kg/cm2 to 1.5 kg/cm2	B)0.2 kg/cm2 to 1 kg/cm2	
	C)0.6 to 1.5 kg/cm2	D)1 kg/cm2 to 1.5 kg/cm2	
Q.No.14	In WAG-7 standard setting of RGAF is		Ans: A
	A)3.5 kg/cm2 to 4 kg/cm2	B)3.0 kg/cm2 to 4.2 kg/cm2	
	C)1.5 kg/cm2 to 2 kg/cm2	D)2.5 kg/cm2 to 4.2 kg/cm2	
Q.No.15	In WAG-7 standard setting of P1 is		Ans: C
	A)4.3 kg/cm2 to 4.5 kg/cm2	B)4.5 kg/cm2 to 4.7 kg/cm2	
	C)4.6 kg/cm2 to 4.8 kg/cm2	D)4.4 kg/cm2 to 4.6 kg/cm2	
Q.No.16	In WAG-7 standard setting of P2 is		Ans: C
	A)4.6 kg/cm2 to 4.8 kg/cm2	B)3.5 kg/cm2 to 4.0 kg/cm2	
	C)4.4 kg/cm2 to 4.6 kg/cm2	D)3 kg/cm2 to 4.2 kg/cm2	
Q.No.17	Standard setting of MCPA (SS1) safety valve is		Ans: C
	A)7.5 kg/cm2	B)8.5 kg/cm2	
	C)9.6 kg/cm2	D)10 kg/cm2	
Q.No.18	Standard setting of MR safety valve SS2		Ans: B

	A)9.5 kg/cm ²	B)10.5 kg/cm ²
	C)11 kg/cm ²	D)12 kg/cm ²
Q.No.19	Brake application time through SA9 in WAG-7 is	
	A)5 to sec	B)6 to 9 sec
	C)10 to 15 sec	D)4 to 6 sec
Q.No.20	Brake releasing time through SA9 in WAG-7 is	
	A)9 to 12 sec	B)8 to 15 sec
	C)15 to 20 sec	D)15 to 25 sec
Q.No.21	Raising and lowering time of pantograph should be in time limit of	
	A)6 to 15 sec	B) 6 to 10 sec
	C)10 to 15 sec	D) 0 to 6 sec
Q.No.22	The condemn size of panto pan carbon strip is	
	A)5.0mm	B)4.0 mm
	C)3.5 mm	D)6.0mm

Q.No.23	In WAG-7 loco the Duplex valve is set at		Ans: B
	A)6.0 kg/cm ²	B)4.9 kg/cm ²	
	C)7.5 kg/cm ²	D)8.5 kg/cm ²	
Q.No.24	In WAG-7 loco auto drain valve is provided to		Ans: A
	A)Drain moisture from MR1& MR2	B)Increase the pressure	
	C)Drain excess pressure	D)None of the above	
Q.No.25	In WAG-7 loco the permissible limit of transverse flexibility of pantograph is		Ans: A
	A)36mm ± 5mm	B)40 mm ± 5mm	
	C)30 mm ± 5mm	D)45 mm ± 5mm	
Q.No.26	RDSO SMI No 184 stands for		Ans: B
	A)Malfunctioning of QRS relay due to GEB	B)Proper functioning of NRVS	
	C)Avoiding of wheel skid	D)None of the above	
Q.No.27	Swivel angle of panto pan is		Ans: A
	A)7° ± 1°	B)10°	
	C)5° ± 1°	D)12° ± 1°	
Q.No.28	The purpose of unloader valve is to		Ans: A
	A)Avoid burning of MCPSS	B)Avoid burning of MCPA	
	C) Avoid burning ofMVMT	D) Avoid burning of ARNO	
Q.No.29	The unit of compressed air pressure is		Ans: D
	A)kg/cm ²	B)PSI	
	C)Bar	D) All of the above	
Q.No.30	The unit of sound is		Ans: C
	A)kg/cm ²	B)Amperes	
	C)Decibel	D)Gallons	
Q.No.31	For quick charging of BP pressure valve is provided in WAG-7 Loco		Ans: B
	A)R-6 valve	B)MV-4 valve	
	C)Limiting valve	D)Feed valve	
Q.No.32	C2A relay valve is for		Ans: A
	A)BP Charging	B) FP Charging	
	C)Brakes releasing	D)None of the above	
Q.No.33	C2B relay valve is for		Ans: C
	A)FP Charging	B)BP dropping	
	C)Brakes application	D)None of the above	
Q.No.34	DBR will cut off by relay is SA-9 applied		Ans: B
	A)RGAF	B)SWC	
	C)RGEB	D)RGCP	
Q.No.35	AFMV is connected from which reservoir		Ans: D
	A)MR1	B)MR4	
	C)MR2	D)MR3	
Q.No.36	In trailing loco MU2B should be kept in		Ans: A
	A)Trail	B)Lead	
	C)Open	D)None of the above	

Q.No.37	Air dryer is provided between which reservoir in WAP-4		Ans: C
	A)MR3& MR4	B)MR1 & MR2	
	C)MR2& MR3	D)RS&CR	
Q.No.38	BP and FP angle cocks are painted with colours respectively		Ans: C
	A)Red and Green	B)Green and Black	
	C)Green and White	D)Blue and White	
Q.No.39	MR and BC equalizing cocks are painted with colours respectively		Ans: B
	A)Red and Green	B)Red and White	
	C)Blue and white	D)None of the above	
Q.No.40	Governor for MCP is		Ans: A
	A)RGCP	B)RGEB	
	C)MCPA	D)VCP	
Q.No.41	The normal position of A-8 cock is		Ans: B
	A)Close	B)Open	
	C)Semi-Open	D)None of the above	
Q.No.	Match the following		Ans:
Q.No.42	A)A9	1)Feed valve	A-3
Q.No.43	B)SA9	2)3054	B-5
Q.No.44	C)BP	3)Automatic Brake Valve	C-6
Q.No.45	D)Plunger Box	4)High reach Panto	D-7
Q.No.46	E)PT1	5)Independent brake valve	E-I
Q.No.47	F)RGCP	6)Brake Pressure	F-9
Q.No.48	G)Duplex Piston valve	7)Pantograph	G-8
Q.No.49	H)NBI 85HR	8)Air Dryer	H-4
Q.No.50	I)IP Valve	9)Pressure switch	1-2
Q.No.51	J)Solenoid	10)Magnet valve	J-10

TM Section WAG-7 Question bank.

Q.No.1	No of Traction motors available in WAG-7 Locomotive		Ans: B
	A)4	B)6	
	C)3	D)8	
Q.No.2	Type of motor used in WAG-7 locomotive		Ans: A
	A)DC Series motor	B)AC motor	
	C) Induction motor I-Phase	D)3 Phase induction motor	
Q.No.3	No. of brush holder available in WAG-7 Traction motor		Ans: D
	A)02	B)04	
	C)08	D)06	
Q.No.4	No. carbon brushes available in traction motor		Ans: C
	A)10	B)15	
	C)18	D)20	
Q.No.5	New size of carbon brush is		Ans: C
	A)25 mm	B)40 mm	
	C)57 mm	D)60 mm	
Q.No.6	Arc horn gap in Traction motor		Ans: A
	A)11.5 to 13.5 mm	B) 12.5 to 14.5 mm	
	C)11.5 to 12.5 mm	D) 13.5 to 14.5 mm	
Q.No.7	Hitachi model traction motor used in WAG-7 locomotive		Ans: A
	A)HS 15250 A	B)HS 25350 A	
	C) HS 15350 A	D)HS 35250 A	

Q.No.8	Continuous current rating of Traction motor in WAG-7 Locomotive		Ans: A
	A)900A	B) 800A	
	C)700A	D)650A	
Q.No.9	Type of bearing used in Traction motor pinion end of WAG-7 Locomotive		Ans: B
	A)NU2236	B)NU330	
	C)NJ324	D)NJ 320	
Q.No.10	Type of bearing used in Traction motor Commutator end of WAG-7 Locomotive		Ans: B
	A)NU2236	B)NU330	
	C)NJ324	D)NJ 320	
Q.No.11	Commutator dia New of Hitachi Traction motor		Ans: C
	A)380mm	B) 350mm	
	C) 400mm	D) 420mm	
Q.No.12	No. of Carbon brushes available in each brush holder of Hitachi Traction Motor		Ans: A
	A)03	B)04	
	C)05	D)06	
Q.No.13	Grease used in Hitachi Traction motor for lubrication		Ans: C
	A)RR-460	B) SHC-120	
	C)RR-3	D)SAE-40	
Q.No.14	Teeth pinion used in Traction Motor of WAG-7 Locomotive		Ans: D
	A)65 Teeth	B)20 Teeth	
	C)21 Teeth	D)16 Teeth	
Q.No.15	Clearances between carbon brush holder bottom and commutator in Hitachi Traction motor		Ans: D
	A)5 to 6 mm	B)6 mm	
	C)5 mm	D)2 to 4 mm	
Q.No.16	Cleaning solvent used in Hitachi Traction motor for cleaning		Ans: D
	A) HSD Oil	B) SP-57 Oil	
	C) SP-1500M	D) Orion-77	
Q.No.17	Type of insulation used in Hitachi Traction motor		Ans: D
	A)C Class	B) Y Class	
	C)B Class	D) H Class	
Q.No.18	Quantity of grease used (pinion end) in Hitachi Traction motor		Ans: B
	A)100 gms	B)925 gms	
	C) 800 gms	D) 864 gms	
Q.No.19	Quantity of grease used (commutator end) in Hitachi Traction motor		Ans: D
	A)100 gms	B) 925 gms	
	C)800 gms	D)864 gms	
Q.No.20	No. of main poles(MD) available in Hitachi Traction motor		Ans: C
	A)02	B)04	
	C)06	D)08	
Q.No.21	No. of commutating/Interpoles (IP Coils) available in Hitachi Traction motor		Ans: B
	A)02	B)06	
	C)08	D)04	
Q.No.22	Baking of armature and stator should be done at temperature.		Ans: A
	A)120°C	B)100°C	
	C)150°C	D)80°C	

Q.No.23	Type of varnish used in Hitachi Traction motor for insulation (while baking)	Ans: A
	A)TVA1410	B)Red Oxide
	C)Beetol Red	D)Red paint
Q.No.24	Width of mica groove in commutator of Hitachi Traction motor	Ans: A
	A)1.1mm	B)1.2mm
	C)1.3mm	D)1.4mm
Q.No.25	method used for removing of pinion in Hitachi Traction motor	Ans: C
	A)Heating	B)Cutting
	C) Grease injection	D) Tapping
Q.No.26	Big inspection cover is provided with No. of bolts in Hitachi Traction motor	Ans: B
	A)04 Nos	B)02 Nos
	C)06 Nos	D)08 Nos
Q.No.27	Size bolt is used for fixing of big inspection cover in Hitachi Traction motor	Ans: D
	A)M20	B)M30
	C)M12	D)M18
Q.No.28	Inspection covers rubber gaskets to be replaced in which schedule of Hitachi Traction motor	Ans: B
	A)IA	B)TOH
	C)IC	D)IB
Q.No.29	Condemn size of carbon brush in Hitachi Traction motor	Ans: C
	A)64mm	B)20mm
	C)25mm	D)40mm
Q.No.30	Motor rating used in WAG-& locomotive	Ans: C
	A)600KW	B)680KW
	C)630KW	D)750KW
Q.No.31	Minimum usable diameter of commutator in Hitachi Traction motor	Ans: A
	A)380mm	B)400mm
	C)360mm	D)420mm
Q.No.32	Greasing of Hitachi Traction motor to be carried out in which schedule	Ans: A
	A)Every IC	B)Every IA
	C)Every IT	D)Every IB
Q.No.33	No of smoothening Reactors (SL's) available in WAG-7 locomotive	Ans: A
	A)02	B)04
	C)06	D)03
Q.No.34	No. of bellows available in WAG-7 locomotive	Ans: D
	A)04	B)08
	C)02	D)06
Q.No.35	No. of terminal covers available in Hitachi Traction motor	Ans: C
	A)06	B)03
	C)02	D)04
Q.No.36	No. of shunt insulators available in Hitachi Traction motor	Ans: B
	A)04	B)02
	C)03	D)04
Q.No.37	No of brush holder base insulators available in Hitachi Traction motor	Ans: B
	A)02	B)06
	C)04	D)01
Q.No.38	Weak brazing joints in Hitachi Traction motor can be detected by test	Ans: C
	A)Tan-Detla test	B)Meggering

	C)High current Injection Test	D) Run test	
Q.No.39	No. of segments available in commutator		Ans: A
	A)285	B)385	
	C)200	D)400	
Q.No.40	No of conductors available in Hitachi Traction motor		Ans: A
	A)57	B)47	
	C)67	D)37	
Q.No.41	_____ will be done to detect Insulation resistance values (IR values) of Hitachi Traction motor		Ans: D
	A)Run Test	B)Drop Test	
	C) UT	D)Meggering	
Q.No.42	_____ meter is used to check/temperature of Bearings.		Ans: B
	A)Echometer	B)Thermometer	
	C)Multimeter	D)LCR meter	
Q.No.43	_____ meter is used to check speed/(RPM) of Hitachi Traction motor while doing run test		Ans: D
	A)Multimeter	B)Thermometer	
	C)Manometer	D)Tachometer	
Q.No.44	_____ is used while assembling of Traction motor to ensure proper tightness of bolts.		Ans: C
	A)Rachet	B)Load pipe	
	C)Torque handle	D)Impact wrench	
Q.No.45	No. of bearings available in Hitachi Traction motor		Ans: A
	A)02	B)03	
	C)04	D)06	
Q.No.46	Commutator dia will be checked by using		Ans: C
	A)Vernier	B)Inside micrometer	
	C)Outside micrometer	D)Bore guage	
Q.No.47	No. of earth brushes available in Hitachi Traction motor		Ans: A
	A)01	B)02	
	C)03	D)04	
Q.No.48	Size of new earth brush available in Hitachi Traction motor		Ans: D
	A)45mm	B)57mm	
	C)64mm	D)53.5mm	
Q.No.49	Metal content limit allowed (maximum) in Hitachi Traction motor		Ans: D
	A)1000 ppm	B)1500 ppm	
	C)3000 ppm	D)2500 ppm	
Q.No.50	Ultrasonic test (UT) will be done to armature shaft to detect		Ans: B
	A)wear rate	B) Internal flaws	
	C)Outside crack	D)shaft length	
Q.No.51	_____ test will be done on magnet frame/ stator to detect (external) cracks.		Ans: C
	A)UT	B)Drop Test	
	C)DPT/MPT	D)High current Test	

E-4 SECTION RELAYS, SPEEDOMETER, VCBS

Q.No.1	Safety relays are		Ans: C
	A) DI type only	B) DU type only	
	C) Some DU & some DI	D) None of the above	
Q.No.2	DI Type safety relays are		Ans: B
	A) QOP, QOA	B) QRSI, QLA, QLM	
	C) QOP, QPDJ	D) Q44, Q118	
Q.No.3	DU type safety relays are		Ans: A
	A) QOP, QOA	B) QLM, QRSI	
	C) Q44	D) Q118	
Q.No.4	CT ratio of TFILM		Ans: C
	A) 50: 5	B) 100: 5	
	C) 250: 5	D) 200: 5	
Q.No.5	Pick up voltage of Q20 in WAG7 locos:		Ans: D
	A) 750 V	B) 900 V	
	C) 700 V	D) 865 V	
Q.No.6	While RB is in service which relay will act if earth fault occurs in the Power Circuit of WAG7 loco:		Ans: B
	A) QOP1	B) QOP 2c	
	C) QOA	D) QLM	
Q.No.7	The setting value of Q44 is		Ans: D
	A) 1 sec	B) 2 sec	
	C) 5 sec	D) 0.6 sec	
Q.No.8	The setting value of Q118 is		Ans: B
	A) 2.5 sec	B) 5 sec	
	C) 0.6 sec	D) 1.5 sec	
Q.No.9	The purpose of RSI block is		Ans: A
	A) To convert AC to DC	B) To convert DC to AC	
	C) To generate AC	D) To generate DC	
Q.No.10	QOP relay is used to detect		Ans: C
	A) Earth fault in auxiliary circuit	B) Over current	
	C) Earth fault in power Circuit	D) Surges	
Q.No.11	For converting AC to DC following equipment is used in locos		Ans: C
	A) Transformer	B) Smoothing reactor	
	C) Silicon Rectifier	D) DJ	
Q.No.12	QLM setting of WAG7 loco is		Ans: A
	A) 9 amps	B) 8 amps	
	C) 7 amps	D) 10 amps	
Q.No.13	Multi meter is used to measure.....		Ans: D
	A) Voltage only	B) current only	
	C) resistance only	D) All of the above	
Q.No.14	When QVSI2 is defective it may give following problem		Ans: C
	A) DJ will not close	B) DJ will close but immediately open	
	C) DJ will close but open on 1 st Notch	D) None of the above	
Q.No.15	LSRSI will glow when		Ans: B
	A) Earth fault in rectifier takes place	B) Tell tale fuse of RSI blows	
	C) When QRSI relay drops	D) None of the above	

Q.No.16	The relay QOP/QOA is the relay of sensing		Ans: A
	A) Voltage	B) current	
	C) resistance	D) All the above	
Q.No.17	After DJ close Lamp will be extinguished		Ans: B
	A) LSGR	B) LSDJ	
	C) LSB	D) All of the above	
Q.No.18	CT ratio of ELM is		Ans: C
	A) 500: 5	B) 2000: 5	
	C) 1000: 5	D) 4000: 5	
Q.No.19	Q51 is a		Ans: B
	A) Progression relay	B) Auto regression relay	
	C) Over Voltage relay	D) None of the above	
Q.No.20	RQ 20 Resistance value is		Ans: C
	A) 9.5KQ±5%	B) 10KQ±5%	
	C) 13.2KQ±5%	D) 100Q±5%	
Q.No.21	What is the setting value of QRSI in WAP4/ WAG7 locos		Ans: D
	A) 9 amps	B) 8 amps	
	C) 10amps	D) 5 amps	
Q.No.22	The QD-1 relay is connected in between		Ans: A
	A) TM 2 & 3	B) TM 3 & 4	
	C) TM 4 & 5	D) TM 5& 6	
Q.No.23	QLA setting is		Ans: D
	A) 9 amps	B) 8 amps	
	C) 7 amps	D) 5 amps	
Q.No.24	Q-20 Relay is a		Ans: B
	A) TM over current relay	B) TM over voltage relay	
	C) RSI protection relay	D) TFP over current relay	
Q.No.25	The pick up/ drop out setting value of QD relays is a)200/170 Amps DC		Ans: D
	A)160/150 Amps DC	B) 100/70 Amps DC	
	C) 180/150 Amps DC	D) 160 / 130 Amps DC	
Q.No.26	ZTEL switch is used for		Ans: B
	A) cooling mode	B) Inching mode	
	C) Banking mode	D) None of these	
Q.No.27	Primary over current relay is		Ans: C
	A) 66	B)86	
	C)78	D)84	
Q.No.28	In WAG-9 locos the 3 Phase output of AUX- Converter is		Ans: D
	A) 380V	B) 230V	
	C) 600V	D) 415V	
Q.No.29	The location of Harmonic filter Resistance is		Ans: B
	A) In Cab	B) On Roof	
	C) In Corridor	D) Under Gear	

Q.No.30	Minimum voltage relay in 3 phase locos is for		Ans: A
	A) Sensing of OHE Voltage in driving mode	B) Sensing of OHE voltage in Cooling mode	
	C) Voltage protection in self hold mode	D) Over voltage protection in simulation mode	
Q.No.31	RSI block is a _____ rectifier		Ans: B
	A) Half Wave	B) Bridge Full wave	
	C) Full Wave center tap	D) Both b & c	
Q.No.32	Input of Auxiliary converter is		Ans: B
	A) 415Volts	B) 1000Volts	
	C) 2100Volts	D) 1200Volts	
Q.No.33	ERC Cable connected to axle box No.		Ans: A
	A) 1,6,7,12	B) 1,2,11,12	
	C) 5,6,7,8	D) 3,4,9,10	
Q.No.34	Minimum Voltage relay is		Ans: B
	A) 66	B) 86	
	C) 78	D) 84	
Q.No.35	In WAG-9 Speedometer MCB is		Ans: B
	A) 237	B) 127.92	
	C) 137.11	D) 122.1	
Q.No.36	ZBAN switch is used for		Ans: C
	A) cooling mode	B) Inching mode	
	C) Banking mode	D) None of the above	
Q.No.37	In WAG-9 Battery Charger MCB No is		Ans: A
	A) 100	B) 127	
	C) 137	D) 120	
Q.No.38	In WAG-7 Ammeter connected to TM no		Ans: B
	A) 1&2	B) 3&4	
	C) 5&6	D) 1&6	
Q.No.39	No voltage relay (Q-30) pick up at		Ans: B
	A) 100V	B) 215V	
	C) 415V	D) 48V	
Q.No.40	BLRA switch is for		Ans: B
	A) cab fan	B) Cab heater	
	C) Head Light	D) Meter Lamp	
Q.No.41	Q-44 & Q118 are		Ans: A
	A) Time lag relay	B) time delay relay	
	C) functional relay	D) Current relay	
Q.No.42	VCB Pressure Regulator setting is		Ans: B
	A) 10 Kg/cm ²	B) 5.2 kg/cm ²	
	C) 6 Kg/cm ²	D) 7.1 Kg/cm ²	
Q.No.43	The signaling relay used to indicate LSCHBA		Ans: B
	A) QV60	B) QV61	
	C) QV62	D) QV64	

Q.No.44	QCVAR relay pickup at		Ans: A
	A) 155 to 160 V	B) 195 to 200V	
	C) 115 to 120V	D) 95 to 100V	
Q.No.45	The latest speed limit of WAG7 loco		Ans: B
	A) 160Kmph	B) 105 Kmph	
	C) 90Kmph	D) 120Kmph	
Q.No.46	If RSI-1 draws over current, DJ will trip through _____ relay		Ans: A
	A) QRSI-1	B) QLA	
	C) QLM	D) QRSI2	
Q.No.47	For isolation of AUX- Converter No. 1 trip MCB No.		Ans: B
	A) 237	B) 127.22/1	
	C) 137.11	D) 112.1	
Q.No.48	Relay to detect abnormality in TFP is		Ans: A
	A) QLM	B) QOA	
	C) QOP	D) QLA	
Q.No.49	Full form of ESMON		Ans: C
	A) Current Monitoring System	B) Voltage Monitoring System	
	C) Energy cum Speed monitoring System	D) None of the above	
Q.No.50	VCB will close when QPDJ pressure is at _____ Kg/cm ² and will trip when at comes to _____ Kg/cm ²		Ans: B
	A) 5/4	B) 4.6/4	
	C) 3/3.5	D) 6/5.2	

OFFICIAL LANGUAGE(HINDI):

(A) Write suitable English words for the following

- | | | |
|----|--------------|-------------|
| 1) | Jjuicidl | QUALITY |
| 2) | 3H-M)fdlcil- | USEFUL |
| 3) | 3WTSTW- | MAINTENANCE |
| 1) | <d\$-Mcr> | AUXILIARIES |
| 4) | 33^?^- | PURPOSE |

(B) Write correct Hindi designations for the following

- | | | |
|----|--------|------------------------------|
| 1) | ADRM | 3FK ZTSpT W W?T^T |
| 2) | Sr.DAO | cihVci ff^r £fw Sff^RF^T |
| 3) | Sr.DPO | cihVci ff^r chfdW 3fftlRF3T |
| 4) | Sr.DSO | cih\«^6 JTScT ^T^ST Sff^RF^T |
| 5) | Dy.CEE | 3^T W^T t^TcT foT^fM |

(C) Write correct Hindi designations for the following

- | | | |
|----|--------|------------------------------------|
| 1) | SDGM | cihVci 3q" 3=r^T ^TOftT^ |
| 2) | COM | "H^-M Hh\^H(H<H ^3fSW |
| 3) | cso | zrszr ^<<r arftj^t)' |
| 1) | CSTE | <H<(srfJ k1<*<t (H ^^T?raTTfoT^TT. |
| 2) | Dy.CEE | 3^T W^T t%fTcT foT^fM |

(D) Translate into English

- | | | |
|----|------------------|------------------------------|
| a) | feld^d #Tfinir | ELECTRICAL PROTECTION/SAFETY |
| b) | ST^TOTtT | MAINTENANCE |
| c) | 3TRT <^iαll | FIRE ACCIDENT |
| a) | iHK^fcl tfofFCT- | ATTENDANCE REGISTER |
| b) | qfRTT | EXAMINATION |

(E) Translate into Hindi

- | | | |
|----|----------------------------|-----------------|
| a) | Electrical Charge man | ^tfcT ^TT^ 3^T |
| b) | Earthing | U3Tf\$^T |
| c) | Divisional Railway Manager | <HS<H TeTW?^ |
| a) | Approved | <Hol<l ^T |
| b) | Casual Leave | <H<H^.->J *\$£& |

Latest Questions

- 1 .Formula for calculation of AAC (A)
 P=population of Loco. Q=Quantity for Loco. L=periodicity Y=POH
 (A) $\frac{PXQ}{L} \frac{PXQ}{L} \left(1 - \frac{2}{Y}\right) \left(1 - \frac{2}{Y}\right)$ (B) $\frac{QXL}{P} \left(1 - \frac{2}{Y}\right) \frac{QXL}{P} \left(1 - \frac{2}{Y}\right)$ (C) $\frac{PXL}{Q} \left(1 - \frac{2}{Y}\right) \frac{PXL}{Q} \left(1 - \frac{2}{Y}\right)$ (D) Non of the above
2. The E70 term is very popular in the brake system. What is meant by "70" there (A)
 (A) 1970 developed technology (B) 70 value (C) 70cock (D) None of the above
3. Full form of CCB (B)
 (A) CGL control brake system (B) computer control brake system
 (C) Contactor control brake system (D) converter control brake system
4. Full form of PTDC (A)
 (A) Pneumatic time dependent control (B) Pneumatic train dependent control
 (C) Pneumatic time develops control (D) none of the above
5. Battery charger input and output MCB'S respectively in 3- Ø loco are (A)
 (A) 100 & 110 (B) 110 & 100 (C) 112.1& 112 (D) 112 &100
- 6 .output voltage of Hotel load converter in WAP7 loco is (B)
 (A) 700V (B) 750V (C) 415V (D) 230V
- 7 .Un Balanced current limit in Hotel load converter of WAP7 is (C)
 (A) 100A (B) 75A (C) 50A (D) 150A
8. Full form of MICAS (C)
 (A)Multiple computer auto system (B) Mini controller automation system
 (C) Micro computer automation system (D) Micro controller automation system
9. Traction motor used in WAP7 locos (D)
 (A) DC series motor (B) 3- Ø Slip ring induction motor
 (C) Stepper motor (D) 3-Ø squirrel cage induction motor
10. No. of traction motor used in WAP5 loco (B)
 (A) 6 (B) 4 (C) 5 (D) 7
- 11 .Type of Bogies used in WAP5 loco (A)
 (A) BO.BO (B) CO.CO (C) B-B (D) C-C

12. Parking brakes are available to the wheel no of WAG9 loco is (C)
 (A)1,5,7,9 (B)1,2,6,9 (C)2,6,7,11 (D)2,5,7,11
13. No. of Roof Bars used 3-Ø loco motive is (A)
 (A) 3 (B) 2 (C) 5 (D) 6
14. No. of AuX motors working with 3-Ø supply in WAG9 is (B)
 (A) 6 (B) 12 (C) 8 (D) 16
15. No of Aux motors' working with 1-Ø supply in WAG9 is (D)
 (A) 1 (B) 2 (C) 3 (D) 4
16. Output voltage of BUR in WAG9 loco is (A)
 (A) 41 5V (B) 230V (C)750 V (D)1000V
17. Standard measurement of OCB air flow (m/sec) in3-Ø loco is (A)
 (A) 8 (B) 6 (C)12 (D)14
18. Aux contactor for VCB in 3-Ø loco is (D)
 (A) 126 (B) 218 (C) 130.1 (D) 136.4
19. Full form of IGBT is (D)
 (A) Integrated Bipolar Thyristor (B) Insulator bistable Transistor
 (C)Integrated bistable thyristor (D) Insulated gate bipolar transistor
20. Which one of the below is Contactor power supply cab (A)
 (A) 126.7 (B) 126.6 (C) 126 (D) 136.4
21. Which is the "Contactor control circuit ON" contactor (B)
 (A) 126.6 (B) 126 (C) 130.1 (D) 126..7
22. Which is the "Relay control Electronics OFF" contactor (C)
 (A) 130.1 (B) 126.7 (C) 126.5 (D) 126.6
23. Which is the "contactor control Electronics" contactor (A)
 (A) 218 (B) 126 (C) 130.1 (D) 211
24. which is the "Relay temperature Electronics" contactor (A)
 (A) 211 (B) 218 (C)126 (D)126.6
25. Which is the "Safety relay control electronics ON" contactor (A)
 (A) 126.6 (B)126.7 (C)126 (D)318
26. In E70 system, what happens when transducer is removed (B)
 (A) MR uncontrolled (B) BP overcharges (C) FP overcharges (D) PB pressure uncontrolled
27. In IGBT, Gate is controlled with (B)
 (A) current (B) voltage (C) power (D) none
28. GTO gate requires _____ for switch (B)
 (A) high current for ON (B) high current for off (C) high voltage for ON (D)high voltage for OFF
29. "S/R interlock MR low" pressure switch is (A)
 (A) 269.4 (B) 269 .41 (C) 269.2 (D) 269.42
30. "SR interlock MR low" messageat displayed at node no .590 when MR reaches (A)
 (A) <5.6 kgcm2 (B) >6.4kg/cm2 (C) <6.4kg/cm2 (D) >5.6kg/cm2

31. Dimensions of WAG9 loco in mm is (D)
 (A) 20562,3150,4255 (B) 20500,3150,4200 (C)20692,3200,4255 (D) 20562, 3152,4255
32. No.of secondary helical spring available in WAG9 (B)
 (A) 10 (B) 8 (C) 12 (D) 6
33. Full form of ESMON is (D)
 (A)Energy speed maintain (B) Emergency speed monitoring
 (C)Energy speed control (D) Energy Speed monitoring
34. Interrupter used in which equipment (C)
 (A) SPM (B) VCU (C) VCB (D) SR
35. What is the meaning of H in WAG9H loco (B)
 (A) Heavy control (B) High adhesion (C) High power (D) High capacity
36. How many secondary spring used in WAG9H loco (A)
 (A) 16 (B) 8 (C) 12 (D) Non of the above
37. In PTDC operation loco works with -----speed (B)
 (A) 30kmph (B) 10kmph (C) 30kmph (D) 40kmph
38. Type of coolant used in IGBT traction converter is (A)
 (A) Ethylene Glycol (B) Acetylene Glycol (C) Distilled water (D) Heavy water
39. Wheel dia of new commissioned loco of WAG9/ WAP7 is (B)
 (A)1097 mm (B) 1092 mm (C)1107mm (D)1062mm
40. Total weight of WAG9H loco (in tonnes) is (B)
 (A) 125 (B) 135 (C) 150 (D) 120
41. Rating of OCB MCB is (C)
 (A) 40A (B) 80A (C) 63A (D)20A
42. Subsystem Number of Aux conv.3 is (D)
 (A) SS01 (B) SS05 (C) SS06 (D) SS08
43. Subsystem number of speedometer is (C)
 (A)SS14 (B) SS15 (C) SS16 (D) SS17
44. Earth fault Relay of Harmonic filter (C)
 (A) 89.2 (B) 89.5 (C) 89.6 (D) 89.7
45. Over current relay in 3-Ø loco (A)
 (A) OCR 78 (B) OCR 78.1 (C) OCR 86 (D) OCR 86.1
46. Horse power of WAG 9 loco is (B)
 (A) 5660HP (B) 6120HP (C) 6400HP (D) 5800HP
47. Condemned wheel dia of WAP 7 (A)
 (A) 1016MM (B) 1026MM (C) 1019 MM (D) 1022 MM
48. MRT922 is the model of (B)
 (A)VCB (B) SPM (C) VCU (D) BUR
49. DDU (Driver display unit) is provided in which panel (C)

(A) A panel (B) B panel (C) C panel (D) D panel

50. The master processor in MICAS VCU is (C)
(A) STB (B) HBB (C) FLG (D)FBV

51. How many primary springs used in WAG9/WAP7 locos (B)
(A) 16 (B) 32 (C) 48 (D) 24

52. what is maximum inching mode speed (A)
(A) 1.5 kmph (B) 1.8 kmph (C) 0.8 kmph (D) 1kmph

53. Inching made activated when (A)
(A) Both SR's in service (B) SR 1 only in service (C) SR 2 only in service (D) none

54. What could be the probable reason for main power getting off with BUR1 followed by BUR2 isolations? (A)
(A) OCB 1or2 (B) TMB 1or2 (C) MCP 1or2 (D) SCTMB1or2

55. How many primary springs used in WAG9H locos (C)
(A) 24 (B) 32 (C) 48 (D) 40

56. What could be the probable reason for main power getting off with BUR2 followed by BUR1 isolation (A)
(A) TMB 1or2 (B) Any MPH (C) MCP (D) OCB 1or 2

57. Full form of RTIS (B)
(A) Real time Information system (B) Real time train information system
(C) Railway train information system (D) Railway time information system

58. Full form of TPWS (B)
(A) Train power works system (B) Train protection and warning system
(C) Train plan and warning system (D) none of the above

59. Full scale deflection of SPM in WAP7(in kmph) (A)
(A) 180 (B) 160 (C)120 (D)200

60. In 3-Ø locos BP drops when speed exceeds _____ percentage in SPM (C)
(A) 100% (B) 105% (C) 110% (D) 120%

61. 8.2 contactor closes when _____ in service (C)
(A) SR1 only (B) SR2 only (C) SR1&2 (D) None of the above

62.8.1 Contactor closes when _____ in service (D)
(A) SR 1 only (B) SR2 only (C) SR1&2 (D) All above

63. Purpose of 8.41contactor is (B)
(A) Charges HF capacitors (B) discharges HF capacitors
(C) Charges SR DC link capacitors (D) discharges SR DC link capacitors

64. Auxiliary winding voltage in 3-Ø loco is (C)
(A) 750V (B) 1500V (C) 1000V (D) 415V

65. In CCB2 loco "Brake electronics failed", message displayed when A9 selection switch position kept in lead cab _____ trail cab _____ position (B)
(A) Lead, trail (B) lead, leads (C) trail, lead (D) trail, trail.

66. 2111A & 2111B cables getting 110V supply in E70 locos will cause _____ (B)
 (A) BP will not create (B) brake electronics failed
 (C) Parking brake will not create (D) none
67. No. Of Hotel load converters available in WAP7 locos _____ (B)
 (A) 1 (B) 2 (C) 3 (D) 4
68. no. of Hotel load winding available in WAP 7 locos _____ (D)
 (A) 1 (B) 4 (C) 3 (D) 2
69. VCD Penalty time in CCB2.0 loco is _____ (B)
 (A) 60sec (B) 76 sec (C) 70 sec (D) 68 sec
70. "SR Interlock loco brake "message display after _____ speed _____ (C)
 (A) 15 kmph (B) 14 kmph (C) 10Kmph (D) 20kmph
71. VCD cycle starts after _____ speed in WAG9 locos _____ (C)
 (A) 2kmph (B) 5kmph (C) 1.5kmph (D) 2.5kmph
72. E70 COC in E70 system equal to _____ COC in Conventional loco _____ (B)
 (A)RAL (B) A8 (C) R1 (D) IP
73. Cooling mode works with the following relays _____ (A)
 (A) MVR, 126.6 (B) MVR, 211 (C) 126.5 (D) 218
74. CCB2 loco consists of the following _____ (B)
 (A) DBC (B) EBV (C) FDV (D) D2 Valve
75. Full form of EBV in CCB 2.0 is _____ (A)
 (A) Electronics brake value (B) Electric brake value
 (C) Exhaust brake value (D) Electronics Blending value.
76. Potential transformer ratio in WAP7 loco is _____ (B)
 (A) 112:1 (B) 125:1 (C) 87.5:1 (D) 150:1
77. output of Potential transformer in WAP7 connected to _____ (D)
 (A) SR 1&2 (B) MVR (C) U1&U2 (D) All the above
78. 89.6 Relay pick up current in WAP7 loco is _____ (B)
 (A) 100mA (B) 150 mA (C) 175 mA (D) 200 mA
79. Resonant filter frequency is _____ in SR _____ (B)
 (A) 50 Hz (B) 100Hz (C) 60Hz (D) 120Hz
80. 3-Ø loco consists _____ no. of change over contactors in Aux circuit _____ (D)
 (A) 8 (B) 4 (C) 6 (D) 9
81. Signal name 'B' indicates in WAG9 locos is _____ (B)
 (A) Driver command (B) output of processor (C) Input of processor (D) none
82. In hotel load converter, 3phase, 415V supply to the Fan is derived from _____ (A)
 (A) HOG converter output (B) BUR output (C) auxiliary winding (D) 1000V/415V,110V Transformer
83. MCE Reset circuit operates _____ contactor _____ (B)
 (A) 211 (B) 218 (C) 126 (D) 126.6
84. MCP contactor rating in WAG9 loco is _____ (A)
 (A) 80A (B) 150A (C) 100A (D) 125A

85. What is the node number in self hold mode (D)
 (A) 504 (B) 570 (C) 605 (D) 612
86. Voltage rating of QFL Relay in 3-Ø loco is (B)
 (A) 48 v (B) 24V (C) 110V (D) 12V
87. Wandler module used to measure _____ Voltage in SR (B)
 (A) D C link (B) OHE (C) battery (D) None of the above
88. GUSP output Voltage used for _____ in GTO SR locos (A)
 (A) Gate unit (B) GTO'S (C) cooling fans (D) SR Rack
89. Hotel load converter output Voltage is _____ system (A)
 (A) 3Ø 3wire (B) 3Ø 4wire (C) 1Ø 2 wire (D) All the above
90. 'ON' command to the HL converter is generated when (C)
 (A) BLHO 'ON' (B) pacco switch in power car 'ON' (C) both A&B (D) either A or B
91. Hotel load converter output phase sequence can be ensured by checking air circulation. (A)
 (A) Bottom to top duct (B) top to bottom duct (C) inlet from both duct (D) output from both duct
92. What does F0504P1 fault indicates (A)
 (A) Over current in HOG converter (B) Earth fault in aux. circuit (C) Over voltage in SR (D) both A&B
93. PT raising in cooling mode, but not raising in Driving mode, the probable cause could be (C)
 (A) VEPT (B) 130.1 (C) Input /output card (D) PT defective
94. In the commonly used term TCN-VCU what does TCN stands for (A)
 (A) Train communication net work (B) Train control net work
 (C) Train connect net work (D) None of the above
95. The word WTB is used widely in conjunction with push pull of loco operation. What does WTB means (A)
 (A) Wired train bus (B) wireless train bus (C) wide train bus (D) None of the above
96. Hotel load converter control supply MCB is located at (B)
 (A) SB1 (B) SB2 (C) HB1 (D) HB2
97. IGBT invented by (A)
 (A) Jayanth Baliga (B) Ramanujan (C) Gordon hall (D) John Ambrose
98. Cab AC works in 3Ø loco only when _____ working (C)
 (A) BUR3 (B) BUR2only (C) all BUR'S (D) BUR1
99. "8.41 stuck off" message generates in 3Ø loco when _____ defective. (A)
 (A) 8.1 NC or 8.41 NO (B) 8.1 NO or 8.41 NC (C) 8.1 NO or 8.41 NO (D) 8.1 NC or 8.41 NC
100. In MU operation of 3Ø locos _____ pantographs rises (C)
 (A) Both lead (B) both rear (C) Both end (D) none of the above
101. In MU operation of 3Ø locos _____ loco first kept in self hold mode _____ loco switched MCE 'ON' (B)
 (A) Lead, trail (B) trail, lead (C) Both A and B (D) none of the above
102. Height adjustment arrangement in H type CBC can be done by (C)
 (A) Adding liner plate (B) Removing liner plate (C) Adjustment by Spring (D) None of the above
103. If there is a brake binding on the wheel, it will cause (B)

- A) Wheel slip B) wheel skidding C) Both A and B D) None
104. Poor adhesion causes _____ (A)
A) Wheel slips B) wheel skidding C) Both A and B D) None
105. Rating of transformer in WAP7 with hotel load winding _____ (D)
A) 6130kVA B) 6531kVA C) 5400kVA D) 7775kVA
106. Conversion of BP control pressure into electrical signal in 3Ø locomotives is done by- (C)
a).Pressure sensor b).Pressure switch
c).Pressure transducer d).None of the above
107. TM speed sensor output is connected to _____ card in the _____ rack. (A)
a).ASC PERI, SR b).NSC PERI, SR c).STB, VCU d).HBB, VCU
108. Consider following activities _____ (D)
1. TM changing 2.Wheel Set changing 3.Axle damper changing 4.PHS changing
Which of the above activities requires loco lifting?
a.1 & 4 b.3 & 4 c. 2 & 3 d.1 & 2
109. Correct arrangement of foot switches in 3Ø locomotives from Left to right in loco cab is _____. (D)
a. PVCD PVEF PSA
b. PSA PVCD PVEF
c. PVEF PSA PVCD
d. PSA PVEF PVCD
110. While working loco in _____ mode, VCD need not be acknowledged. (C)
a).Shunting b).Constant Speed c).Inching mode d).Braking mode
111. If the TM rotates at a speed of 600 rpm then the frequency of pulse generated by ARC make speed sensor is _____. (D)
a)1.8 KHz b).0.6KHz c). 0.3 KHz d).2 KHz
- 112.In self hold mode means electronics will remain active for _____ min. (C)
(a) 15 min (b) 5 min (c) 10 min (d) 8 min
113. The fault message F0101p1 results in _____. (B)
(a) No effect (b) Main power off (c) Cab-1 off (d) Cab-2 off
114. ZBAN stands for _____ in WAG9 loco. (A)
(a) Switch for Banking (b) Switch for Vigilance
(c) Switch for Braking (d) Switch for constant speed
115. The brake rigging arrangement of WAP7 locomotives is similar to _____ locomotive. (C)
(a) WAG-5 (b) WAP-4 (c) WAG-7 (d) WAP-5
116. The grease used for lubrication of bearings of FRA 6068 is _____. (A)
(a) SHC 120 (b) Servo Gem 460 (c) Servo 65 (d) 170
117. The TE/BE throttle is having _____ positions. (A)
a) 4 positions 0, 1/3, 2/3, FULL b) 5 positions 1, 1/5, 2/3, FULL
c) 2 positions 0, 1/5, 2/3, FULL d) 4 positions 4, 1/5, 5/3, FULL
118. What is the condition monitoring test of TFP oil? (A)
a) DGA b) VGA c) BUR d) SMB
119. Pressure setting of DDBV (SA9) in WAG9 loco _____ (A)
a) 3.5 kg/cm² b) 1.5 kg/cm² c) 7.5 kg/cm² d) 5.5 kg/cm²

120. Pressure setting of DBC (A9) in WAG9 loco (D)
a) 5.5 kg/cm² b) 7.5 kg/cm² c) 1.5 kg/cm² d) 2.5 kg/cm²
121. Capacity of MR-1, 2 tanks in WAG9 loco? (D)
a) 350 ltrs b) 250 ltrs c) 150 ltrs d) 450 ltrs
122. Capacity of auxiliary reservoir in WAG9 loco? (D)
a) 140 ltr b) 440 ltrs c) 240 ltrs d) 640 ltrs
123. Capacity of Compressors in WAG9 loco? (D)
a) 1560 LPM b) 1250 LPM c) 1670 LPM d) 1750 LPM
124. Pressure Setting of SS-2 in WAG9 loco? (D)
a) 6.5kg/cm² b) 8.5kg/cm² c) 2.5kg/cm² d) 10.5kg/cm²
125. How many positions does DBC have in WAG9 loco? (A)
a) 05 b) 06 c) 08 d) 10
126. Parking brake PRV setting is in WAG9 loco? (A)
a) 6kg/cm² b) 4kg/cm² c) 8kg/cm² d) 10kg/cm²
127. Name of lubricating oil used in gear case of 3 phase locos..... (B)
a) SERVOSYN 220 RR b) SERVOSYN 460 RR
c) SERVOSYN 260 RR d) SERVOSYN 560 RR
128. Name of the grease used in axle boxes of 3 phase locos.... (D)
a) SHELL GUARRAGE b) SHUT GADUS
c) SHUT GUARRAGE d) SHELL GADUS
129. Name of the grease used in NDE side of Suspension tube bearings of WAG9 loco (C)
a) SERVOPLEX SHC-150 b) SERVOPLEX SHC-180
c) SERVOPLEX SHC-120 d) SERVOPLEX SHC-100
130. Name of the lubricant used for DE Side of suspension tube bearings of WAG9 loco (B)
a) SERVOSYN 170 RR b) SERVOSYN 460 RR
c) SERVOSYN 360 RR d) SERVOSYN 860 RR
131. Total number of dampers available in 3 phase loco..... (C)
a) 10 b) 15 c) 20 d) 25
132. Total number of secondary dampers provided in 3 phase loco.... (D)
a) 02 b) 06 c) 09 d) 04
133. Quantity of gear case oil added in 3 phase locos. (D)
a) 4 LTRS b) 6LTRS c) 8LTRS d) 5LTRS
134. Total number of additional load added in WAG 9 H Loco in form of dead weights (D)
a) 04 b) 05 c) 06 d) 02
135. Loco body is lowered on which part of bogies (C)
a) First helical springs b) secondary helical spares
c) Secondary helical springs d) semi helical spares
136. What ring is used in centre pivot housing..... (D)
a) ACETONE RANGE b) ACETONE RING c) ACLATHAN RANGE d) ACLATHAN RING

137. Which test is carried out for checking of rotor bars (A)
a) Growler test b) guard test c) German test d) growing test
138. In SGCI Labyrinth, SGCI stands for (A)
a) Spheroidal graphite cast Iron b) Spheroidal grap cast Iron
c) Spheroidal cast graphite Iron d) Spheroidal cast Iron graphite
139. The grease used for lubrication of bearings of 6FRA6068 (D)
a) Isoflex SHC110 b) Isoflex SHC140
c) Isoflex SHC150 d) Isoflex SHC120
140. SRBGF stands for (D)
a) Synthetic Rexine Based Glass Fibre
b) Synthetic Resin Based Glass Fibre
c) Synthetic Resin Bonded Guard Fibre
d) Synthetic Resin Bonded Glass Fibr
141. Type of bearings used in TM type 6FRA 6068 (D)
a) Cylindrical roller bearing (DS side NU2235 & NDE side NJ321)
b) Cylindrical roller bearing (DB side NU2238 & NDE side NJ322)
c) Cylindrical roller bearing (DS side NU2239 & NDE side NJ323)
d) Cylindrical roller bearing (DE side NU2236 & NDE side NJ320)
142. In SGCI Labyrinth, SGCI stands for (A)
a) Spheroidal graphite cast Iron b) Spheroidal grap cast Iron
c) Spheroidal cast graphite Iron d) Spheroidal cast Iron graphite
143. Maximum speed of TM type 6FRA6068 (A)
a) 2584 rpm b) 5864 rpm c) 8542 rpm d) 6458 rpm
144. Maximum current rating by TM type 6FRA 6068 (B)
a) 270 A b) 370 A c) 470 A d) 570 A
145. Maximum frequency out of traction converter in WAG9 loco. (D)
a) 102 HZ b) 112 HZ c) 122 HZ d) 132 HZ
146. Variation of resistance between two elements of a temperature sensor in a motor allowed (D)
a) 1.3 Ω b) 2.3 Ω c) 3.3 Ω d) 0.3 Ω
147. Quantity of grease required for TM re-greasing in WAP7/WAG9. (A)
a) DE side 400 grams and NDE side 130 grams as per ABB manual.
b) DE side 400 grams c) 130 grams as per ABB manual
c) 130 grams as per
d) 150 grams as per
148. Grease used in auxiliary motors of 3phase locomotives (B)
a) Servo gemRR5 b) Servo gem RR3 c) c Servo gemRR2 d) c Servo gemRR1
149. Lubrication Oil used in compressor of M/s. ELGI Model RR20100/RR20100 CG (M) (D)
a) Servo 75 b) Servo 65 c) Servo plus 100 d) Servo plus 150
150. Surge Comparison test on the stator of aux motor shall be conducted to detect (D)
A Turn to turn short B Improper coil connection C Open coil connection
a) A, B, C b) C, B, A c) B, A, C d) AC
151. Codal life of aux motor (A)
a) 15 Years b) 18 Years c) 16 Years d) 20 Years

152. Codal life of Speedo meter (a)
a) 15 Years b) 18 Years c) 16 Years d) 10 Years
153. Codal life of VCB (b)
a) 15 Years b) 18 Years c) 16 Years d) 20 Years
154. Full form of FDU is (B)
a) Friction development unit b) Fire deduction units
c) Force development unit d) Foundation disable unit
155. What is WRE module in BUR? (A)
a) Inverter module b) Inverter mobile c) Inverter batteries d) Inverter aux
156. What is G.G module in BUR? (B)
a) It is reflector b) It is a rectifier c) It is reachable d) It is discharge
157. Number of earth return brushes available in one brush holder WAG9 loco (B)
a) 02 b) 03 c) 04 d) 06
158. .What is the torque required for tightening of axle guide bolts. (D)
a) 540 N.M b) 340 N.M c) 240 N.M d) 640 N.M
159. In bearing 6312 Z suffix 'Z' stands for (A)
a) Bearing with a metal seal on one side, one side open. b) One side open
c) Metal seal d) Bearing with a metal seal
160. Compressor of M/s.ELGI Model RR20100/RR20100 CG (M) is (A)
a) 2 stage 3 cylinder compressor b) 3 stage 3 cylinder compressor
c) 1 stage 3 cylinder compressor d) 5 stage 3 cylinder compressor
161. What is the acceptable db loss range measured for fiber optic cable & optical cards? (B)
a) 13dBm to 16dBm b) 15dBm to 16bBM c) 15dBm to 18bBM d) 12dBm to 18dBm
162. LDS stand for? (B)
a) Local Diagnostic system b) Loco Diagnostic system c) Loco Digital system d) Loco Diagnostic set
163. DDS stand for (C)
a) Digital data system b) Double data set c) Diagnostic data set d) Dual data set
164. CCU stands for (A)
a) Convertor control unit b) conversation control unit
c) Component control unit d) Constant control unit
165. DBM stands for? (A)
a) Decibels/ milli watt. b) Decimal / milli watt.
c) Disable / milli watt. d) Discharge/ milli watt.
166. Unmodified torque arm bogie lug radius ... (D)
a) 4R b) 6R c) 7R d) 8R
167. .Modified torque arm bogie lug radius (B)
a) 10 R b) 15 R c) 20 R d) 25 R
168. Sequence of WAG9 loco Vertical load transferred to wheel set is (b)
1. Secondary springs 2. Bogie 3. Primary springs 4. Axle box
a) 2,3,4,1 b). 1,2,3,4 c). 4,2,3,1 d). 2,4,1,3
169. Sequence of load transferred from loco to load is (C)
1. Body 2. Bogie 3. Axle box 4. Traction link 5. Axle guide.

- A). 1,2,3,4,5 B). 2,3,4,5,1 c). 3,5,2,4,1 d). 5,3,2,4,1
170. Axle guides available in WAG9 locos are (b)
a). 10 b). 12. C). 8 d) None of above
171. Journal diameter on racer seating portion (d)
a)10.0.013 TO 120.058 b) 20.0.023 TO 110.068
c) 14.0.023 TO 110.060 d) 15.0.043 TO 150.068
172. Journal diameter on thrower seating portion (C)
a) 150.126 TO 159.176 b) 120.146 TO 159.126
c) 170.146 TO 179.186 d) 160.176 TO 189.199
173. Lipped/plain racer inner diameter (C)
a) 129.975 TO 130.00 b) 139.975 TO 180.00
c) 149.975 TO 150.00 d) 119.975 TO 160.00
174. Axle box housing Inner diameter (D)
a) 260 TO 270.046 b) 220 TO 240.046 c) 150 TO 210.046 d) 250 TO 250.046
175. What is the cleaner used for cleaning fiber optic connectors' tips? (A)
a) Acton b) Acetone. c) Axe tone d) Aces stone
176. Use of disc valves used in compressor is to -----compressed air (C)
a) Stop b) Allow c) Allow one side d) Exhaust
177. Signal Lamps working condition is observed in WAG9 loco during ----- (A)
a) Configuration b) AFL operation c) A9 operation d) none of the above
178. What is the probable cause for battery voltage becomes zero when MCP getting off in 3-Ø Loco (A)
a) 112 MCB tripped b) 112.1 MCB tripped c) 110 MCB tripped d) 100 MCB tripped
179. What is the probable cause for Main power getting off with BUR 1 & 2 isolation in IGBT BUR loco? (B)
a) MRB1 defective b) MRB2 defective c) SCMRB1 defective d) SCMRB2 defective
180. How many sensors available in Metallic AAL make SPM PG.? (b)
A) 1 b) 2 c) 3 d) 4
181. 126.5 Relay getting ON, when ---- switch operates in 3-Ø. (C)
a) ZPT b) ZBAN c) BL d) Simulation
182. 126.6 relay getting ON, when BL switch kept in -----position in 3-Ø. (b)
a). OFF b) D c)C d) None of the above.
183. In which make VCB, VCB holds on electrical supply only? (A)
a) BT b) AAL c) Schneider d) BHEL
184. How much current flows in earth fault relay of battery circuit, when no earth faults? (a)
a) 0 mA b) 100mA c) 150mA d) 218 mA
185. Earthing choke is connected to ----- wheel in 3-Ø loco. (a)
a)1 b) 6 c) 7 d) 12
186. In 3Ø MU locos, COCs to be opened and COCs to be closed in trailing loco (slave loco). (D)
a. 47; 70, 74 & 136 b. 70, 74 & 136; 47

c. 70 & 74; 136 & 47

d. 74, 70; 47 & 136

187. In 3Ø loco, AFL actions are (D)

- a. TE/BE drops to 'O' b. Flasher Light works c. BZ-V-O-F sounds d. All the above

188. In 3Ø loco, constant speed control will de-activate automatically if BC pressure increased above Kg/cm². (D)

- a. 1 b. 1.5 c. 0.25 d. 0.6

189. If BP is not charging beyond 3 kg/cm² in In 3Ø Knorr brake loco, keep auto brake valve(A9) in position for 10 seconds and bring back to Run. (B)

- a. Release b. Full Service c. Emergency d. Minimum reduction

190. In 3Ø loco, purpose of 'Hotel load' is (D)

- a. For working of MU b. For pneumatic supply to coaches
c. For working of coaches d. For electrical supply to complete formation of coaches

191. To apply parking brakes in 3Ø dead loco, press. side plunger of solenoid valve. (A)

- a. Left b. Right c. Any plunger d. None of the above

192. In 3Ø loco, during loco brake test, ensure BC gauge shows kg/cm², BP gauge shows kg/cm² and PB gauge shows kg/cm². (B)

- a. 3.5, 5 & 0 b. 3.5, 5 & 6 c. 0, 5 & 6 d. None of the above

193. In 3Ø loco, Constant speed control (CSC) will be de-activated automatically if BP pressure drops (with or without A9) more than kg/cm² (C)

- a. 1 b. 1.5 c. 0.25 d. 0.6

194. In 3 phase locos, Harmonic filter resistances are cooled by (A)

- a. Atmospheric air b. Blower c. Pneumatic pressure d. None of the above

195. In 3 phase locos, when parking brakes are released PB gauge shows Kg/cm² (C)

- a. 5 b. 0 c. 6 d. 3.5

196. During loco brake testing WAG 9 or WAP7 loco should not to move up to KN. (B)

- a. 100 b. 150 c. 300 d. 125

197. The pressure switch associated with working of Baby compressor is (A)

- a. Pn 26 b. Pn 60 c. Pn 59 d. Pn 6

198. TM speed sensor is connected ----- card of Traction converter. (b)

- a) ASC card b) ASC peri card c) NSC card d) NSC peri card

199. TE/BE meters is connected to ----- slot card of VCU in 3-Ø loco. (A)

- a) E b) J c) o d) Q

200. DG indicats in 3-Ø loco is (a)

- a) Bogie b) Roof c) Drivers cab d) Battery box

