

**BIT BANK FOR
TECH-III- SELECTION
UNDER
25% LDCE QUOTA**

**SOUTH CENTRAL RAILWAY
SECUNDERABAD DIVISION
ELS/KZJ**

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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.

C) **Electrical Safety and ACTS and Rules.**

1. Electricity act and safe rules and Shock treatment, first aid and use of Fire Extinguishers.

D) **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 Locomotives (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.

10. Study of circuit, analysis of WAP4 & WAG5/7 Locomotive i.e., study of circuits, cabling Index and other drawings.
11. Study of WAP-4 & WAG5/7 Bogie, wheel arrangements, suspension arrangements and all mechanical features like elements of Vibration, Oscillation, Damping devices, Elasticity etc.
12. Study of Sander gear and Brake rigging, various types of brake systems in Conventional Loco (WAG-7).
13. Study of Pneumatic circuitry of WAP-4 & WAG5/7, Study of various Pneumatic Valves, braking system (E-System).
14. Study of maintenance schedules for various equipment in the Conventional Locomotive, its periodicity.
15. Different lubricants used in WAG 5/7 & WAP 4 locomotives
16. Study of Conventional Locomotive, testing, engine fitness and troubleshooting procedure.
17. RDSO Modification and SMIs implementation and maintenance of various records of Conventional Locomotives.
18. Maintenance of records in PPO
19. Study of new equipments in Loco such as MPCS, SIV, VCD and WMUCS.
20. 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.

13. 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 & LSFL
14. 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.
15. Study of Sander gear and Brake rigging, various types of brake systems in 3phase Loco.
16. Different lubricants used in WAP 7/ WAG9 locomotives
17. Study of Pneumatic circuitry of WAG-9, Study of various Pneumatic Valves, braking system (E-System).
18. Study of maintenance schedules for various equipment in the 3phase Locomotive, its periodicity.
19. Study of 3phase Locomotives, testing, engine fitness and troubleshooting procedure.
20. RDSO Modification and SMIs implementation and maintenance of various records for 3phase Locomotives.
21. Study of Electronic devices i.e., IGBT and GTOs as control switches in power circuitry and auxiliary circuitry of 3phase Locomotives.
22. Study of new equipments in Loco such as CVVRS, Vacuum Toilet, VCD and DPWCS.

PART -C

1. 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

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

[a] 2.5V [b] 3V [c] 10V [d] 0.7V

Ans: D

(3) 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

(5) A semiconductor diode has forward resistance of order of ohms(Ω)

Options:[a] kohms($K\Omega$) [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

(6) 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

(7) 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

Ans4

(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

AnsA

(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:A

[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: B

[7] The energy stored in a 10F 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 C (b) 0.1 C (c) 0.1 C (d) 0.01 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 90° (b) Is in phase with the voltage (c) Leads the voltage by 45° (d) Lags the voltage by 90°

Ans: D

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

Ans: B

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

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

4. _____ Conductors offer little resistance to the flow of electric current.
5. _____ Cord and plug equipment should have a three prong plug or be double insulated.
6. _____ Only authorized employees are permitted to work on electrical systems and equipment.
7. _____ Electrical shock can cause damage to tissue, muscle, and internal organs.
8. _____ 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. $15\frac{1}{3} + 3\frac{3}{4}$ of $425 + ? = 400$
(1) $66\frac{1}{3}$ (2) $67\frac{2}{3}$ (3) $66\frac{2}{3}$ (4) None of these
2. $140\sqrt{?} + 315 = 1015$
(1) 5 (2) 16 (3) 25 (4) 36
3. $(12.19 - 0.22) + 0.03 = ?$
(1) 0.399 (2) 39.9 (3) 3.99 (4) None of these
4. 45% of $? + 30\%$ of $90 = 30\%$ of 210
(1) 120 (2) 80 (3) 60 (4) 90
5. $88044 + 44 + 17 \times 23 = ?$
(1) 2392 (2) 2291 (3) 592 (4) 412
6. $\frac{4}{5} + 2\frac{1}{5} + 2\frac{2}{3} = ?$
(1) $6\frac{1}{5}$ (2) $6\frac{1}{3}$ (3) $6\frac{1}{15}$ (4) None of these
7. $\frac{(11)^2 - (4)^2 \times 2}{4 \times 2} = ?$
(1) 11 (2) $1\frac{1}{4}$ (3) $11\frac{1}{8}$ (4) 121
8. $\frac{9}{4} - \frac{?}{4} = 2$
(1) 1 (2) 4 (3) 8 (4) 18
9. $40.07 \times 1.43 = ?$
(1) 57.31 (2) 57.301 (3) 5.7301 (4) None of these
10. $852.2109 + 106.78 - 59.157 = ?$
(1) 899.8339 (2) 889.8339 (3) 899.9833 (4) None of these
11. 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) 45
12. Recurring part of non-terminating recurring decimal is called _____
13. The number of digits in the recurring part is called _____
14. In $\frac{1}{3} = 0.3$
Period = ? Periodicity = ?
15. $\sqrt{324} = ?$
(a) 18 (b) 14 (c) 28 (d) 38
16. $\sqrt{3} = ?$
(a) 1.732 (b) 1.6 (c) 4 (d) 3

17. 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
18. 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
19. $\sqrt{2}$ is a
 1) Natural Number (2) Rational Number (3) Irrational Number (4) Whole Number
20. 4:9 can be written as 2:3
 (a) True (b) False
21. If price of 3 books is 12, then price of 6 books should be
 (a) 24 (b) 36 (c) 30 (d) 20
22. If purchasing cost is Rs.200/- and of selling price is Rs.220/-, then profit is
 (a) 10% (b) 30% (c) 20% (d) 15%
23. 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
27. GCM Stands for
 (a) Greatest Cost Multiple (b) Greatest Cost Minus (c) Greatest Common Multiple (d) None
28. $3 + (4(5-1)) - 4 =$
 (a) 15 (b) 16 (c) 0 (d) 1
29. $8 + (4(3 \times 4 \div 2)) + 1 =$
 (a) 30 (b) 20 (c) 23 (d) 33
30. The angle between two sides of a square is
 (a) 10 Deg (b) 45 Deg (c) 90 Deg (d) None
31. The two parallel line cut each other at
 (a) Crossing point (b) Inversion point (c) Infinity (d) None
32. $3 + (2 + 4(8 - 3 \times (6 \div 3)) + 1) \div 5 =$
 (a) 5 (b) 55 (c) 60 (d) 58
33. Angle between two parallel line is
 (a) 90 Deg (b) 45 deg (c) 0 (d) None
34. $(\sqrt{36} + \sqrt{25} + \sqrt{49}) - 8 =$
 (a) 12 (b) 14 (c) 10 (d) 16
35. If $x = 4$ & $y=5$, the value of $(x+y)^2 = ?$
 (a) 99 (b) 81 (c) 45 (d) 54

Answers for Numerical problems

1. 3
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
15. 18
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

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
3. First 'talkie' feature film made and shown in India
(1) Alam Ara (2) Raja Harischandra (3) Pundalik (4) Shakuntala
4. In which of the following do red blood cells originate?
(1) Bone marrow (2) Brain (4) Ligaments (4) Muscles
5. "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
6. 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
10. The Central Rice Research Institute is located in which of the following cities?
(1) Calcutta (2) Hyderabad (3) Chennai (4) Cuttak
11. Which among the following is a classic dance from Kerala?
(1) Kathak (2) Kathalaki (3) Bharata Natyam (4) Kuchipudi
12. Which of the following is the Headquarters of the World Bank?
(1) Washington (2) Hague (3) Paris (4) London
13. 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
14. Kalpana Chawla – one fame as
(1) Musician (2) Hockey player (3) Scientist (4) Astronaut
15. Which of the following is the best conductor of electricity?
(1) Copper (2) Silver (3) Iron (4) Steel
16. Which of the following is not a name associated with Computer?
(1) Pentium (2) HCL (3) Wipro (4) IMAI

17. Which of the following gases used for the purification of water?
(1) Oxygen (2) Ammonia (3) Chlorin (4) Carbon Di Oxide
18. 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
19. Which of the following countries has the 2nd largest rail net work in the world?
(1) India (2) USA (3) Russia (4) China
20. 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
21. Arjun awards are given for excellence in which of the following fields?
(1) Arts (2) Sports (3) Social Service (4) Economics
22. The term of Off- SIDE is related to the game of
(1) Basket ball (2) Foot ball (3) Volley ball (4) Badminton
23. Saranath, a tourist spot which contains the ruins of Buddhist temple is located Near which place?
(1) Bhopal (2) Varanasi (3) Patna (4) Allahabad
24. Bismillah Khan is known for which of the following instruments?
(1) Tabala (2) Flute (3) Shehnai (4) Violin
25. The national fire service college is situated in which city?
(1) Chandigarh (2) Bhopal (3) Faridabad (4) None of these
26. The term biopsy is associated with which of the following field of study?
(1) Aeronautics (2) Social Science (3) Econometrics (4) Medical Science
27. "APSARA" is the name of the India's first
(1) Nuclear Reactor (2) Helicopter (3) Ground battle tank (4) Railway Locomotive
28. Numismatics is the study of
(1) Insects (2) Numbers (3) Stamps (4) Coins
29. "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
30. Which of the following explains that windows 2000 is
(1) Operating system (2) New Word Processor
(3) Financial package (4) New Computer language
31. 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.
32. Which of the following gases makes the major preparation of Air?
(1) Carbon dioxide (2) Argon (3) Nitrogen (4) Oxygen
33. 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) Boorkes (3) Nagapur (4) Bangalore
35. The capital of Assam is
(1) Shillang (2) Agartala (3) Ita Nagar (4) Dispur
36. 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
(c) He was assassinated in 1865
(d) He was the first President of the US
39. The first navigator to sail round the world was
(a) Marco Polo (b) Columbus (c) Amundsen (d) Magellan
40. Who was the first woman President of the Indian National Congress?
(a) Annie Besant (b) Sarojini Naidu (c) Vijayalakshmi Pandit (d) None of these
41. In which of the following fields did Tenzing Norgay distinguish himself?
(a) Boxing (b) Cycling (c) Mountaineering (d) Hockey
42. Aryabhatta was India's renowned
(a) Poet (b) Physicist (c) Mathematician (d) Medical Practitioner
43. 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
(c) 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
(c) High Pressure to those of moderate pressure
(d) Low Pressure to those of moderate pressure
45. Earthquakes & Volcanoes are associated with
(a) Folded & Faulted regions (b) deep sea plains (c) plateau regions (d) coastal region
46. 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
49. Ramanuja preached
(a) Satya (b) Ahimsa (c) Gyana (d) Bhakti
50. The capital of India was shifted from Calcutta to Delhi in
(a) 1910 (b) 1911 (c) 1912 (d) 1913
51. The first Muslim ruler of India was
(a) Mahmud Ghazni (b) Muhammad Ghori (c) Babar (d) Muhammad Bin Tughlaq
52. Nadir Shah invaded India in
(a) 1705 (b) 1739 (c) 1801 (d) 1839
53. Kalinga war changed the life of
(a) Chandragupta Maurya (b) Ashoka the Great (c) Lord Buddha (d) Akbar
54. Who was the Guru of Swami Vivekananda?
(a) Dayanand Saraswati (b) Raja Raj Mohan Roy (c) Rama Krishna Paramahansa
9d) None of these
55. 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
56. Gaya is associated with Lord Buddha, where he
(a) was born (b) attained enlightenment (c) died (d) delivered the first sermon
57. Who, of the following encouraged remarriage of the widows most?
(a) Ahilya Bai (b) Raja Ram Mohan Roy (c) Gandhiji (d) None of them
58. Which of the following places was known as centre of learning in ancient India?
(a) Nalanda (b) Ujjain (c) Allahabad (d) None of these
59. Who was the first woman ruler of India?
(a) Noor Jehan (b) Razia Sultan (c) Chand Bibi (d) Mumtaz Mahal
60. 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. 2 | 51. b |
| 2. 2 | 52. d |
| 3. 1 | 53. c |
| 4. 1 | 54. c |
| 5. 3 | 55. a |
| 6. 1 | 56. b |
| 7. 2 | 57. a |
| 8. 2 | 58. a |
| 9. 3 | 59. b |
| 10. 4 | 60. d |
| 11. 2 | |
| 12. 1 | |
| 13. 3 | |
| 14. 4 | |
| 15. 2 | |
| 16. 4 | |
| 17. 3 | |
| 18. 4 | |
| 19. 1 | |
| 20. 3 | |
| 21. 2 | |
| 22. 2 | |
| 23. 2 | |
| 24. 3 | |
| 25. 4 | |
| 26. 4 | |
| 27. 1 | |
| 28. 4 | |
| 29. 4 | |
| 30. 1 | |
| 31. 3 | |
| 32. 3 | |
| 33. 3 | |
| 34. 2 | |
| 35. 4 | |
| 36. 1 | |
| 37. 2 | |
| 38. d | |
| 39. d | |
| 40. a | |
| 41. c | |
| 42. c | |
| 43. c | |
| 44. b | |
| 45. a | |
| 46. a | |
| 47. c | |
| 48. c | |
| 49. d | |
| 50. b | |

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)

4. 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)

5. Which one of the following is not a safety item ()

- (a) ACP Unit (b) Hand brake (c) Head Light (d) Corridor Light

Ans: (d)

6. The continuous rpm of a Hitachi Traction Motor is ()

- (a) 895 rpm (b) 100rpm (c) 110rpm (d)125rpm

Ans: (a)

7. 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)

12. For changing direction of loco movement, following is used ()

- a) CTF b) Reverser c) Shunting contactor d)Pantograph

Ans(b)

13. In WAG-7 loco following Smoothing Reactor is used ()

- a) SL-30 b) SL-40 c) SL-42 d) None

Ans(a)

14. Twin Beam Head Light bulb has twin filament of ()

- a)100and 110watts b) 100and 120watts c) 100and 90watts d) 80and 100watts

Ans: (C)

15. 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)

18. 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)

19. Gear ratio of WAG7 loco is _____ ()

a) 18: 14 (b) 23: 58 (c) 17: 57 (d) 16: 65

Ans: (D)

20. 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)

21. The requisition No. for a N.S.item is ()

(a) S 1313 (b) S 1302 (c) S 1315 (d) S 1305

Ans: (B)

22. Maximum Tractive effort of a loco is the ()

(a) maximum power developed by the loco (b) maximum torque developed by the loco at 5KMPH

(c) maximum starting torque developed by the loco without wheel slipping

(d) None is correct

Ans: (C)

23. Relay to detect abnormalities in TFP is ()

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

Ans: (C)

24. 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)

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

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

Ans: (C)

27. Panto raising time is adjusted between ()

(a) 6 to 10sec. (b) 5 to 1sec. (c) 5 to 8 sec. (d) None

Ans: (A)

28. 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)

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

(a) 8 (b) 1 (c) 12 (d) 16

Ans: (A)

30. 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)

31. 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)

34. QLM setting of WAG-7 loco is ()

a. 9Amp. b. 8 Amp. c. 7 Amp. d. 1Amp.

Ans: (A)

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

a. DB b. dB c. GB d. BD

Ans: (B)

36. EFDJ coil of DJ in WAG-7 loco is ()
 a. holding coil b. closing coil c. None d. Both (a) (b)
 Ans: (B)
37. 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)
40. 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)
41. 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)
42. 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)
43. What is the voltage of OHE feeding power to WAG-7 loco ()
 a. 25KV AC b. 150V DC c. 11 KV AC d. 44V AC
 Ans: (A)
44. MVRH is provided to cool the ()
 a. Traction Motor b. RSI block c. TFP Radiator d. Compressor
 Ans: (C)
45. 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)
46. Loco brake applies ..kg pressure ()
 a. 2.0 b. 3.5 c. 1.5 d. 7.0 Ans: (B)
47. Back lash term is related to. ()
 a. TFP b. Battery c. CBC d. Gears Ans: (D)
48. There are .. nos. of main poles (MP) in a Hitachi TM. ()
 a. 6 b. 4 c. 2 d. 12 Ans: (A)
49. The Lubricant used in Suspension Bearing of a Hitachi Motor
 a. 170-T b. SP57 c. Servo RR3 d. Mineral 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)
51. 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)
52. 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)
53. Sand is used in locomotives to avoid. ()
 a. wheel skidding b. wheel slipping c. brake failure d. all the above Ans: (B)
54. 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)
59. CT ratio of TFILM
a) 50: 5 b) 100: 5 c) 250: 5 d) 200: 5
Ans: (C)
60. Pick up voltage of Q20 in WAG7 locos:
a) 750V b) 800V c) 865 V d) 850V
Ans: (C)
61. 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)
62. The resistance value of RU in WAG7 locos is
a) 88 kohms b) 10kohms c) 120Kohms d) 22kohms
Ans: (A)
63. 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)
64. 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)
71. 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)
72. What is class of Insulation specified for 180degrees temperature:
(a) B class (b) A class (c) H class (d) Y class.
Ans: (C)
73. 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)

75. 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)

76. Specific gravity of electrolyte is measured using.

- (a) Thermometer (b) Hygrometer (c) Hydrometer (d) Lactometer

Ans: (C)

77. 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)

78. 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)

79. 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)

80. 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)

81. 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)

82. 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: (C)

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.
b) To communicate with the loco driver coming in the same direction, about any Difficulty.
c) To inform the opposite coming loco driver about the abnormality noticed about OHE/Track.
d) All above.

Ans: (D)

86. EM contactor pressure is

- (a) 650 to 800gms (b) 600 to 700gms (c) 600 to 750gms (d) 900 to 1100gms

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)
PBO₂

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)
92. Battery negative is connected to loco body through
 (a) HQOP (b) HQOA (c) HOBA (d) HQCVAR
 Ans: (C)
93. 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)
96. The type of Electric braking system used in WAG7 locomotive is
 (a) Regenerative (b) Rheostatic (c) Both (d) None of the above
 Ans: (B)
97. 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)
100. During rheostat braking traction motor works as a
 a) Generator (b) Converter (c) Motor (d) Inverter
 Ans: (A)
101. The relay QOP/QOA is the relays of sensing
 a) Voltage (b) Current (c) Resistance. (d) Inductance
 Ans: (A)
102. 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 tailing 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) Both b & c

Ans: (A)

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: (B)

115. Maximum braking effort of WAG-9 Loco is

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

Ans: (B)

116. 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)

117. 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)

122. 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)

123. 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)

124. Continuous glowing of LSF1 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)
128. BUS STATION cooling fans work on
a. 110Volts b. 48Volts DC c. 24Volts DC d. 110Volts AC
Ans: (C)
129. VCB trips when transformer oil temperature rises to
a. 80degrees b. 84 degree c. 75 degrees d. 70degrees
Ans: (B)
131. Output of Auxiliary winding is
a. 415Volts b. 1000Volts c. 2100Volts d. 1200Volts
Ans: (B)
132. 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)
133. VCB trips when auxiliary circuit current exceeds
a. 280Amps b. 400Amps c. 500Amps d. 1000Amps
Ans: (B)
134. Output frequency of a Traction Converter is
a. 60-120HZ b. 62-132HZ c. 50-100HZ c. None of the above
Ans: (B)
135. ZTEL switch is used in
a. Banking mode b. Inching mode c. Simulation mode d. None of the above
Ans: (B)
136. Type of batteries used in three phase locos
a. NiCd b. Both a & c c. Lead Acid d. None of the above
Ans: (A)
137. Primary over current relay is
a. 89.7 b. 78 c. 89.6 d. 86
Ans: (B)
138. Time delay of Timer relay in MR Blower
a. 08 Sec b. 10Sec c. 12 Sec d. 05 Sec
Ans: (B)
139. Current rating of OCB MCB is
a. 40Amps b. 63 Amps c. 80Amps d.16 Amps
Ans: (B)
140. 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)
141. Number of electronic cards available in E-70panel
a. 4 b. 6 c. 2 d. 3
Ans: (A)
142. The pressure switch associated with working of Baby compressor is
a. Pn 26 b. Pn 60 c. Pn 59 d. Pn 6
Ans: (A)
143. The number of PBU available in WAG9 locos is
a. 04 b. 12 c. 02 d. 08
Ans: (A)
144. 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)
146. 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)
147. The switch used for isolation of vigilance control device is
 a. 125 b. 154 c. 160 d. 237.1
 Ans: (D)
148. The operating pressure of contactors in TC1, 2 HF
 a. 10kg/sqcm b. 6kg/sqcm c. 5kg/sqcm d. 8kg/sqcm
 Ans: (D)
149. 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. 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: (C)

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

1. No Inductance variation between different phases of motor
2. Low IR value
3. 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
5. The setting value of Q44 is
a) 1 sec b) 2 sec c) 5 sec d) 0.6 sec
6. 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
7. The input / output voltage ratings of the DC-DC converter are:
a) 110V / 110V b) 110V/50V c) 110V / 24V d) 110V/20V
8. 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
9. What is class of Insulation specified for 180 degree temperature:
(a) B class (b) A class (c) H class (d) Y class.
10. 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
11. 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
© 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

20. Battery negative is connected to loco body through
(a) HQOP (b) HQOA (c) HOBA (d) HQCVAR
21. Under charging of batters results.... ..
22. 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) ETTFP b) ET1 &2 c) HOM d) None
25. Q20 will pickup at----- Drop out at -----for 6P combination locos.
26. FRPCPY -----
27. Shock pulse meter to check
(a) Condition of bearing b) condition of axle
c) Condition of gear d) condition of SL
28. 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) 6.5 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
39. Multi meter is to measure-- a) Voltage only b) current only c) resistance only d) all of the above
40. Loco TFP has No.s of taps for voltage control
a) 16 b) 32 c) 12 d) depending upon the type of loco
41. 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
 b) Fuse condition and + ve bonding
 c) Fuse condition and –ve bonding
 d) 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
48. 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
49. 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] | 26. Failure rate percentage per year |
| 2. Ans: [c] | 27. Ans: [a] |
| 3. Ans: [a] | 28. 6 to 32 |
| 4. Ans: [b] | 29. Ans: [c] |
| 5. Ans: [d] | 30. 10mm ± 1mm |
| 6. Ans: [a] | 31. Ans: [a] |
| 7. Ans: [c] | 32. Ans: [c] |
| 8. Ans: [d] | 33. Ans: [c] |
| 9. Ans: [c] | 34. Specific gravity |
| 10. Ans: [a] | 35. Ans: [b] |
| 11. Ans: [b] | 36. Ans: [b] |
| 12. Ans: [b] | 37. Ans: [d] |
| 13. Ans: [d] | 38. Ans: [c] |
| 14. Ans: [b] | 39. Ans: [d] |
| 15. Ans: [d] | 40. Ans: [b] |
| 16. Ans: [b] | 41. Ans: [c] |
| 17. Ans: [b] | 42. Ans: [a] |
| 18. Ans: [d] | 43. Ans: [a] |
| 19. Ans: [a] | 44. Ans: [d] |
| 20. Ans: [c] | 45. Ans: [c] |
| 21. Low specific gravity | 46. Ans: [a] |
| 22. Dissolved Gas analysis | 47. Ans: [b] |
| 23. Ans: [b] | 48. Ans: [a] |
| 24. Ans: [c] | 49. Ans: [a] |
| 25. 865 V DC and 740 V DC | 50. Ans: [a] |

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 is1.875Ohms
12. Type of Pantograph used for WAG-7 loco is AM12
13. RSI block is Full Wave Bridge Rectifier.
14. Q-20 Relay is aTraction 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
19. Brake application and release timing through A9-should be 20/25 to 25/30 sec. While dispatching the loco from shed.
20. Through SA9; B.C. Pressure is3.5Kg/Cm2
21. BC Piston travel should be 107 to 117 mm for WAG7 locos.
22. Leak hole test is conducted for Proportional brake system.
23. With two CPs in working loco alone, the BP pressure should reach within 150 secs.
24. ZLS switch is provided to switch off signaling lamp of rear loco in MU.
25. Rating of HS15250A is 630KW
26. Minimum air pressure required to raise the panto is 4kg/cm2
27. Opening time of VCB should be less than 45msec.
28. Voltage operated relays are _____ type.(DU)
29. Current operated relays are _____ type.(DI)
30. Setting value of QRSI relay _____ in WAG7/WAG5 locos (5Amps)
31. The purpose of SL is to -----Remove the pulses in DC output from the rectifier(AC Pulses)
32. The resistance value of RPGR is .------(One Lakh Ohms)
33. The resistance value of RGR is -----(1.6Ohms)
34. The HP of MVSL is -----(3HP)
35. LECE is provided in the loco to indicate. -----(continuity of Fuse)
36. LSCHBA is provided in the loco to indicate -----(Charger working)
37. Additional CCBA provided to protect batteries from fire
38. DC-DC converter provided to use head lamps of loco in _____section(In all sections including Neutral Section)
39. Over charging of batters results -----.(Gasing)
40. Under charging of batters results.------(Suplphation)
41. Tan delta being measured to monitor ------(Dielectric heat dissipation factor)
42. DGA being measured for insulating oil..------(To monitor the health of TFP)
43. Transformer breather used for .------(To give Dry air and absorb the moisture in TFP Oil)
44. Traction Motor natural axes set by method ------(KICK)
45. 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)**
47. The number of auxiliary motors starts along with ANNO------(5)
48. SJ is connected in series with...------(RS Shunting Resistor)
49. 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]**)

52. Expand FRPCPY -----.(Failure Rate percentage per year)
53. Effective value of RC-network across a3,a4&a5,a6 in WAG7loco -----
(Resistance 1.5Ohms, Capacitance: 50Micro Farads)
54. Type of traction motor bearing ------(Cylindrical Roller Bearings)- ..
55. Shock pulse meter to..------(to check the vibration level of Bearings)
56. Class of insulation for auxiliary motors winding ------(H)
57. UA is connected to ARNO U&V phases to read auxiliary power voltage corresponding to Auxilairy 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)
63. Sediments and perceptible sludge allowable in TFP oil ..------(0.10% by mass)
64. Transformer oil flash point minimum -----for serviceable oil and----- for new filtered oil. (140⁰ C, above 140⁰ C)
65. Interfacial tension at 27degrees----- for new filtered oil (0.04 Neuton Meters)
66. Oxidation inhibitor ----- by mass (max) (>0.02%)
67. Arc horn gap for WAG-7 Hitachi Traction Motor is -----..(11.5mm to 13.5mm)
68. 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)
70. PHGR oil strokes ------(40-60 per Minute)
71. Tightness (torque) of GR segments -----(3.5Kg-m)
72. Minimum thickness of GR segments ..------(7.8+/-20%)
73. Main contact pressure of reverser/CTF ------(10+/-1Kg)
74. Effective value of CAPTFP 3,4,5&6 ..------(0.83micro Farad)
75. EM contact pressure ..------(900 to 1100gms)
76. EM contactor main contact air gap ------(8.5+/-1mm)
77. C118 contactor pressure contact (C118) air gap ------(5 to 8Kg Contact(C118) air gap 16 to 18mm)
78. CGR contactor pressure..------(7.8+/-20%Kg)
79. Transformer oil used for----- (Cooling of Insulation and winding.)
80. Pyrometer is used to measure..----- (Temperature)
81. Specific gravity of fully charged cell ..----- (1240)
82. Contact used for AC MVRF ------(C108)
83. Hydrometer is used to measure.------(Specific Gravity)
84. CGR contacts thickness ------(46/36mm)(New/Condemned)
85. CGR contacts opening ..------(29-33mm)
86. The rating of ATFEX ..------(60KVA)
87. The current through RGR flows when----- ..are closed.(CGR 1 – 2 closed)
88. 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)
91. TFVT input -----..output 11V A.C (230VAC)
92. The air gap between stator and rotor of MVRH ..----- (2mm)
93. The air gap between stator and rotor of MVMT is ..----- (2mm)
94. The size cable connected to ARNO ..------(150Sqmm)
95. Two pole synchronous motor runs at .. -----rpm(3000RPM)
96. Un serviceable scrap is placed ..-----.on the form----- (DS dead stock) (DS-8)
97. Class of insulation and temperature
Y= 90c A=105c E=120c B=130c F= 155c. H=180c, C=225c

98. RGR Resistance value ..------(1.6Ohms)
99. R QOP resistances valve ..------(3X3200Ohms)
100. R118 resistance ----- (0.47Ohms)
101. RHOBA r
102. Resistance..------(210Ohms)
103. QOP/QOA coil resistance value ..------(1800Ohms)
104. Q30 coil resistance ------(1190Ohms)
105. Q44 /Q118 coil resistance value ------(3.8Ohms)
106. QLM/QE/QF/QRSI relays resistance..-----
(0.03ohms/0.03ohms/0.03ohms/0.03ohms)
107. RPS permanent field weakening resistance.------(0.285Ohms)
108. Continuous current permissible through RPS ------(216Amps)
109. Meter used to check inter turn shorts in EP coils ..------(Surge Comparison Tester)
110. Rating of HRC fuses used in series with RPS.------(100A,660V)
111. QVMT cut in pressure 15mm WG cut out ------(30mm)
112. QVRH cut in pressure 6 to 10mm WG cut out ..------(18mm)
113. QVSL cut in pressure 6mm cut out.------(18mm Wire Gauge)
114. FYFR ..------(First year Failure Report)
115. In WAG7 loco the BP drop is allowed up to ..------(0.7Kg/cm² for 5mins.)
116. 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)
119. In WAG7 loco the standard setting of QPH is cut in/cut out ..------(0.6/0.4Kg/Cm²)
120. In WAG7 loco the standard setting of RGAF is cut in/cut out.------(4.0/3.5)
121. In WAG7 loco the standard setting of P1 is cut in/cut out ..------(4.8/4.6)
122. In WAG7 loco the standard setting of P2 is cut in/cut out ..------(4.6/4.4)
123. In WAG7 loco the standard setting of MR Safety Valve (SS2) is ------(10.5(+/- 1)Kg/Cm²)
124. In WAG7 loco the BP Charging Time through A9 Emergency to release position should be.
------(3 to 6Sec)
125. In WAG7 loco the Brake application/release time through SA9 is ------(8sec/12sec)
126. In WAG7 loco the Brake application/release time through A9 for goods loco is------(15 to 25/25 to 40sec)
127. In WAG7 loco the raising / lowering time of pantograph is ..------(6 to 10sec)
128. In WAG7 loco the Metalised carbon strips in all pantographs are provided **for Current collection and with self lubricating characteristics**
129. In WAG7 loco the Duplex check valve is set at . ------(4.9Kg/cm²(+/-0.1))
130. 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)
132. In loco motives Air dryers are provided to adsorb moisture from **MR1 & 2 air**.
133. RDSO SMI NO 197 is tells about.------(Driving Techniques and use for Proportional brakes to prevent Wheel skidding on Electrical Locomotives)
134. In WAG7 SMGR PRV setting is ..------(3.5Kg/cm²)
135. RDSO SMI NO 11 is for the ------(procedure for cleaning the pneumatic pipelines of Electric Locomotives by Blowing through)
136. Periodicity of AOH/TOH schedule for freight locos(WAG-7)------(2Years)
137. Periodicity of IOH schedule for freight locos(WAG-7)------(6Years)
138. Periodicity of POH schedule for freight locos(WAG-7)------(10years+/-3Months)
139. Periodicity of IC schedule for freight locos(WAG-7)------(180Days)
140. Periodicity of IB schedule for freight locos(WAG-7)------(120Days)
141. Maintenance of transformer Tap changer is being done by section in electric loco sheds.------(E5 section)

142. Over hauling of pneumatic equipments is carried out by ----- section by electric loco sheds.(M3M5)
143. Heavy repairs of bogies mechanical complaints are being carried out by-----Section in electric loco sheds.(M6(Bogie Section))
144. Planning dispatch of locos being done by ----- section in electric loco sheds.(PPO section)
145. Loco failures and analysis is being done by----- section in electric loco sheds.(Investigation section)
146. Troubleshooting & investigation of unusual occurrence is being done by.-----Section in electrical loco sheds. (Investigation Section)
147. Wheel set clearances is being measured during ..----- Schedule. (All minor schedules)
148. Traction Motors over hauling is being carried out by ----- ..section in electrical loco sheds.(E3TM section)
149. Electronic PCBs components are checked by----- section in electrical loco sheds.(E7 section)
150. Under frame inspection is carried out by -----section in electrical loco sheds.(M1 Section)
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
153. In STB1 signal AMSB_0102 LVCB on L Stands for _____(Line Voltage Circuit)
154. Horse power of a WAG-9loco is _____(6000HP)
155. Gear ratio in WAG-9 loco is _____(15:77)
156. Type of Traction motors used in WAG9-locos _____(3Phase Squirrel Cage Induction Motor)
157. Maximum tractive effort of a WAG9 -loco is _____(458KN)
158. Maximum speed of a WAG9-loco is _____(100KMPH)
159. Maximum braking effort of a WAG9 -loco is _____(260KN)
160. Ampere- Hour capacity of a WAG-9 loco battery is _____(199AH)
161. Parking brakes are provided on wheel no _____ in WAG-9 loco (2,6,7,11 Wheels)
162. Lubricant used in gear cases of three phases locos is _____(RR 460 Oil)
163. Number of Bus stations available in three phase locos is _____(7 Bus stations available)
164. 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 positions, Position-1 for Bogie-1 isolation, Position-II for Bogie-2 Iolation, Position-0 for both bogies in service)
166. Purpose of oil cooling blowers in three phase locos is to _____(to Cool Both TFP oil and SR coolant in Three phase locos)
167. Traction motor mounting arrangements in three phase locos is _____(On Two mounting Brackets)
168. For raising PT-1 only from both cabs, _____ switch is to be placed in _____ position.(ZPT (Panto selector Switch) to be on One position)
169. For switching over to failure mode operation _____ switch is to be placed in _____ position(154, to 1).
170. Constant speed (BPCS) activates at _____ KMPH and above.(5KMPH)
171. Parking brakes will not apply through `BPPB if speed is more than _____ KMPH.(2Kmph)
172. Number of DC to DC converters available in a three phase loco are _____(4)
173. VCB trips when SR oil temperature rises above _____ degrees. (50°C)
174. In FTIL locos feed pipe coc number is _____(COC-136)

175. 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)
176. Maximum BC pressure applied when DBC is kept in full service position is _____ (2.5Kg/cm²)
177. The brake release time through DBC in WAG-9 is _____ Seconds. (45 to 60sec)
178. Anti-compounding valves are located near _____ (Cab-1 & 2 ALP side, top of Foot steps)
179. The pressure switch used for vigilance control is _____. (BC pressure switch: Pn.60)
180. The settings of compressor governors in WAG-9 locos are _____ And _____ (8 & 10Kg/cm²)
181. The number paring brakes units available in WAG-9 locos is **4** and available on wheel no.s **2,6,7,11**
182. In release position of DBC, BP is charged up to **5.4Kg/cm²**
183. KW rating of a Oil Cooling Blower motor in three phase loco is _____ (30KW)
184. Instrument lamps works on **24V/110VDC** volts.
185. Rating of head light lamp in three phase locos is _____ volts and _____ Watts. (110VDC, 100W)
186. Capacity of a battery in three phase loco is _____ AH. (199AH)
187. Primary Over current relay in three phase locos is _____ (78A).
188. Power converter is isolated by switch No. _____ (154)
189. Sub-system `06 corresponds to _____ (BUR-1)
190. Power factor in three phase locos is _____ (Unity Power factor)
191. Input and output of potential transformer is _____ and _____ respectively. (25KV, 200V)
192. Oil used in gear case of WAG9 & WAP7 locos **RR460**.
193. In 3Phase Locomotives, The acronym TCN stands for _____. (Train Communication Network)
194. In M/s BHEL make IGBT locomotives, TM1 firing is controlled by _____. (DCU2)
195. 25A8 module is controlled by _____ M/s BHEL make IGBT SR. **(DCU-3)**
196. Pre charging contactor in SR is used for _____. **(for Reducing Inrush current)**
197. When MCB 63.1/2 is tripped, It will consequently lead to _____. (Bogie isolation due to High converter coolant temperature)
198. 411 location indicates _____. (VCU1 Rack)
199. Limits of OHE voltage during working of WAG locomotive 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)**
201. The letters V-O-F on cab buzzer indicates _____. (Vigilance, Overspeed, Fire)
202. Self hold mode means _____. (CEL will remain active for 10Mins)
203. The fault message F0101p1 results in _____. (Main Power Off)
204. S/R interlock activates after attaining a speed of _____ kmph. (10Kmph)
205. In _____ mode, working of VCD can be tested on standstill position in 3 locomotives. (Simulation)
206. ZBV stands for _____. (MU Train BUS)
207. 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 & IGBT's	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 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	

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 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) 110 v	
	C) 4.2 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 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 of Panto selection Switch		Ans: C
	A)154	B)156	
	C)160	D)170	
Q.No.42	How many position for 154 switch		Ans: C
	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 SR	B) to deviate UA meter	
	C) to deviate TE/BE meters	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-1

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-1
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-1
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-1
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
 (d) 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 timeinterval 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
11. In WAG-7 Loco, TFP has Nos. of taps for voltage control (b)
 a. 16 b. 32 c. 33 d. 22.
12. 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
13. PRV is located in (b)
 a. BA panel b. ZSMGR panel c. DRIVER CAB d. depending upon the type of loco
14. Quantity of oil in transformer of WAG -7 loco is approximately (b)
 a. 2500 ltrs b. 2000 ltrs c. 1500 ltrs d. 1200 ltrs
15. 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 %
18. RCAPTFWA damping panel values are (a)
 a. 25 uf ±10 % b. 30 uf ±10 % c. 50 uf ±10 % d. 45uf ±10 %
19. CAPTFP 1 and CAPTFP 2 damping panel value is (a)
 a. 0.08 uf ±10 % b. 0.10uf ±10 % c. 0.06 uf ±10 %
 d. 0.04 uf ±10 %
20. 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 %
21. 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 %

22. NR stands for (c)
a.non reversible b.not reducing c. notch repeater d.notch reverser
23. QPH relay is (a)
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.
24. PRV stands for (b)
a.Pressure releasing valve b. pressure regulating valve c. pressure
retaining valve d. pressure reducing valve
25. RGR stands for (a)
a.Resistance for graduator b. Regulating resistance c.
Permanent resistance for graduator d. Reciprocating resistance
26. RPGR stands for (c)
a.Resistance for graduator b. Regulating resistance c.
Permanent resistance for graduator d. Reciprocating resistance
27. RGR value in ohms is (a)
a.1.61 Ω b. 100 k Ω c. 4.7 Ω
d. 1.5 Ω
28. RPGR value in ohms is (b)
a.1.61 $\Omega \pm 10\%$ b. 100 k $\Omega \pm 10\%$
c. 4.7 $\Omega \pm 10\%$ d. 1.5 $\Omega \pm 10\%$
29. Normal oil level for GR is (a)
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)
a.13 tonne b.10 tonne
c.20 tonne d. 5 tonne
31. Complete transformer along with all accessories weighs around (a)
a.13 tonne b.10 tonne
c.20 tonne d. 5 tonne
32. BDV stands for (a)
a.Break down voltage b.break down value
c.Break dual voltage d. bi dielectric value
33. Per minute strokes for PHGR are (a)
a.60 strokes/minutes b. 50 strokes/minutes c.10
strokes/minutes d. 100 strokes/minutes
34. Ideal pressure for working of SMGR is (a)
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 (b)
a. 2 b.3 c. 1
d. 4
36. For converting a.c. to d.c., following equipment is used in locos (c)
(a) Transformer
(b) Smoothing reactor
(c) Silicon Rectifier
(d) Circuit breaker
37. For changing direction of loco movement, following is used (b)
a) CTF b) Reverser
b) Shunting contactor d) Pantograph

38. The requisition No. for a N.S.item is (a)
a) S 1313 b) S1302
c) S1315 d) S1305
39. Maximum Tractive effort of a loco is the (c)
a) maximum power developed by the loco
b) maximum torque developed by the loco at 50 KMPH
c) maximum starting torque developed by the loco without wheel slipping
d) None is correct
40. QLM setting of WAG-7 loco is (a)
a. 9 Amp. b. 8 Amp. c. 7 Amp. d. 10 Amp.
41. The speed control method used in AC locomotive/MEMU (a)
(a) Voltage control (b) Current control
(c) Rheostatic control (d) Regenerative control
- 42.. Good condition of silica gel having (c)
(a) pink color (b) yellowish
(c) blue color (d) white color
43. SMGR progression and regression timings are (a)
(a) 9-11 sec (b) 10-12 sec
(c) 55- 60 sec (d) 15 sec
44. IR values of primary secondary windings of a TFP are tested with (c)
(a) 1 KV MEGGER (b) 2 KV MEGGER
(c) 2.5 KV MEGGER (d) 1.5 KV MEGGER
45. Minimum IR values of primary secondary windings of WAG 7 TFP (a)
(a) 100 MΩ (b) 10 MΩ
(c) 200 MΩ (d) 500 MΩ
46. Which studs of auxiliary windings are to be shorted using Cu bar for SIV configuration loco (d)
(a) a0-a1 (b) a0-a7
(c) a0-a7 (d) a1-a7
47. BDV of the TFP oil is to be tested in (d)
(a) Every schedule (b) AOH/IOH only
(c) ICO only (d) from IC schedule onwards
48. While heating the silica gel the temperature of the silica gel heating oven should not exceed (a)
(a) 100 °C (b) 120 °C
(c) 80 °C (d) 150 °C
49. After filtration of the TFP oil and after filling of the oil in transformer the air to be released from (d)
(a) CHT Turret (b) RADIATOR
(c) MPH (d) ALL OF THE ABOVE
50. PHGR starts working after (d)
(a) 1st notch (b) 18 notch
(c) 16th notch (d) 6th notch

E6 Section : (CONTROL CIRCUITS)

Q.No.1	Size of each cable connected to Traction motor 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 Ω , 500 W	B) 400 Ω , 500 W	
	C) 100 Ω , 500 W	D) 50 Ω , 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: C
	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 WAG-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)Saface 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 dia in WAG-7		Ans: B
	A)1105mm	B)1016mm	
	C)1030mm	D)1000m	
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 WAG-7 suspension tube		Ans: C
	A)Roller	B)Conical	
	C)Taper roller	D)Needle bearing	
Q.No.30	Gap between brake block and wheel interface on released condition of WAG-7		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	2)Equalizer beam	B-3
	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) Speriblocks	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	Clavis hole Dia		Ans: A
	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
	A)2.2 kg/cm ²	B)3.5 kg/cm ²	
	C)1.8 kg/cm ²	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
	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	In WAG-7 loco maximum BP drop is allowed for 5 mn		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: B
	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/cm ² to 1.5 kg/cm ²	B)0.2 kg/cm ² to 1 kg/cm ²	
	C)0.6 to 1.5 kg/cm ²	D)1 kg/cm ² to 1.5 kg/cm ²	
Q.No.14	In WAG-7 standard setting of RGAF is		Ans: A
	A)3.5 kg/cm ² to 4 kg/cm ²	B)3.0 kg/cm ² to 4.2 kg/cm ²	
	C)1.5 kg/cm ² to 2 kg/cm ²	D)2.5 kg/cm ² to 4.2 kg/cm ²	
Q.No.15	In WAG-7 standard setting of P1 is		Ans: C
	A)4.3 kg/cm ² to 4.5 kg/cm ²	B)4.5 kg/cm ² to 4.7 kg/cm ²	
	C)4.6 kg/cm ² to 4.8 kg/cm ²	D)4.4 kg/cm ² to 4.6 kg/cm ²	
Q.No.16	In WAG-7 standard setting of P2 is		Ans: C
	A)4.6 kg/cm ² to 4.8 kg/cm ²	B)3.5 kg/cm ² to 4.0 kg/cm ²	
	C)4.4 kg/cm ² to 4.6 kg/cm ²	D)3 kg/cm ² to 4.2 kg/cm ²	
Q.No.17	Standard setting of MCPA (SS1) safety valve is		Ans: C
	A)7.5 kg/cm ²	B)8.5 kg/cm ²	
	C)9.6 kg/cm ²	D)10 kg/cm ²	
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		Ans: B
	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		Ans: A
	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		Ans: B
	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		Ans: C
	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 \pm 5mm	B)40 mm \pm 5mm	
	C)30 mm \pm 5mm	D)45 mm \pm 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) $7^{\circ} \pm 1^{\circ}$	B) $10^{\circ} \pm 1^{\circ}$	
	C) $5^{\circ} \pm 1^{\circ}$	D) $12^{\circ} \pm 1^{\circ}$	
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 pressue ____ 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		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-1
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	I-2
Q.No.51	J)Solenoid	10)Magnet valve	J-10

TM Section WAG-7 Question bank.

Q.No.1	No of 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-150Oil	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 joins 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) 9.5K Ω \pm 5%	B) 10K Ω \pm 5%	
	C) 13.2K Ω \pm 5%	D) 100 Ω \pm 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) गुणवत्ता ----- QUALITY
- 2) उपयोगिता----- USEFUL
- 3) अनुरक्षण----- MAINTENANCE
- 4) सहायक ----- AUXILIARIES
- 5) उद्देश्य----- PURPOSE

(B) Write correct Hindi designations for the following

- 1) ADRM ----- अपर मंडल रेल प्रबंधक
- 2) Sr.DAO ----- वरिष्ठ मंडल लेखा अधिकारी
- 3) Sr.DPO----- वरिष्ठ मंडल कर्मिक अधिकारी
- 4) Sr.DSO ----- वरिष्ठ मंडल सुर्र अधिकारी
- 5) Dy.CEE ----- उप मुख्य विधुत इंजीनर

(C) Write correct Hindi designations for the following

- 1) SDGM----- वरिष्ठ उप महा प्रबंधक
- 2) COM ----- मुख्य परिचालन प्रबंधक
- 3) CSO ----- मुख्य सुर्र अधिकारी
- 4) CSTE ----- मुख्य सिग्नल व दुर संचार इंजीनर
- 5) Dy.CEE ----- उप मुख्य विधुत इंजीनर

(D) Translate into English

- a) विद्युत संरक्षण----- ELECTRICAL PROTECTION/SAFETY
- b) अनुरक्षण ----- MAINTENANCE
- c) आग दुर्घटना----- FIRE ACCIDENT
- d) उपस्थिति रजिस्टर----- ATTENDANCE REGISTER
- e) परीक्षा----- EXAMINATION

(E) Translate into Hindi

- a) Electrical Charge man----- विधुत चार्ज मैन
- b) Earthing----- एअर्थिंग
- c) Divisional Railway Manager----- मंडल रेल प्रबंधक
- d) Approved----- मंजूरी की
- e) Casual Leave----- समन्य छुट्टी