Question Bank for Main Paper

Electrical Engineering

Q1 (a)How is the uniform wear of the 'pantograph strip' due to rubbing with contact wire ensured in OHE ?

(b) Draw sketch of a 'Cantilever assembly' of OHE, name different parts and show location of Contact and Catenary Wires.

Q.2 Explain what do you understand by the following ?

a. DC viz a viz AC Traction
b. Circuit Breaker
c. Electric Energy Conservation
d. End-on- Generation
e. Factor of AC comfort
f. LHB
g. Flasher Light

Q.3 Explain the working of 'Air Conditioning system' of AC coach with the help of sketch.

Q.4 (a) What is the difference between 'regulated & unregulated OHE'? How is OHE regulation achieved?

(b) What are the functions performed by the following equipments in an electric loco?

a. Tap Changer
b. Baby Compressor
c. Arno Converter

Q.5 (a) Write brief note on the following:

a. Neutral Section
b. Rail Bonds
c. Power Block & Traffic Block

(b) For a WCAM1 Co-Co 123 T locomotive, indicate the following:-

a. Type of Traction
b. Type of Service
c. Number of Traction Motors
d. Axle Load

Q.6 Write brief notes on -

a. Breath Analyser Equipment
b. Tractive Effort and Adhesion
c. Electrical Clearance
d. Difference in requirements of Goods & Passenger Locos
e. Various types of Brakes on electric locomotives
f. Electric Loco Maintenance Schedules

Q.7 Draw 'power circuit' diagram of an AC electric loco.

Q.8 Write brief notes on any four

a. *EMU*
b. Safety item on Loco
c. Traction Sub Station
d. Various Train Lighting Systems
e. Roof Mounted Package Unit
f. 3-Phase Loco

Q. 9 Please mark the correct answer.

1. Axial distance between catenary & contact wire at the OHE support in vertical plane is called ?

(a) implantation (b) gradient of OHE (c) encumbrance (d) stagger

2 The fittings, which is used to transfer the weight of contact wire to the catenary wire is called ?

(*a) section insulator (b) Jumpers (c) cantilever assembly (d) droppers*

3 In regulated OHE, how much tension is kept in OHE?

(a) as per tension / temperature chart (b) 3000 kg
(c) 2000 kg (d) 1500 kg

4 What is the distance of caution boards from neutral section location ?

(a) 100 m.& 500 m. (b) 2000 m. & 1000 m.
(c) 500 m. & 250 m. (d) 250 m. & 150 m.

5 The distance between centre line of the track to the nearest face of the structure is called ?

(a) clear span (b) track separation (c) implantation (d) track clearance

Q. 10 WAG4 B-B loco is provided with 1540 horse power motors. For this loco, please indicate

*(a) Gauge*_____.
(b) Type of Traction _____.
(c) Total Horse Power _____.

(d) No of bogies _____
(e) Type of Service _____.

Q.11 Describe organization of electrical department in an electrified division. Please indicate responsibilities of each officer.

Q.12 Describe Train lighting systems used in non AC coaches on IR.

Q.13 Explain the following terms in context of 25kv AC traction distribution system.

1. Portal 2.Neutral Section
3. Stagger 4. Isolator

5. *Remote Control Center*

Q.14 For a conventional AC loco motive please explain the following-

I. Tap change
II. DJ
III. Regulating winding
IV. Rectifier
V. Dynamic Brakes

Q.15 (a) Please indicate various types of train lighting systems.

(b) Please name the factors governing comfort of a passengers in an air-conditioned coach.

Q.16 (a)Who is designated EIG on Indian Railways? What is his role?

(b) A tube light rated 50 watts (electric powers) is used for 10 hours per day for 30 days in a month. How much electric energy is being consumed by it per month?

Q.17 For 25 KV AC traction OHE system explain the following

1. *SPAN*

2. *Setting Distance*

3. *Encumbrance*

4. *Portal*

Q.18 (a) Please draw various warning board provided to inform loco pilot about approaching neutral section?

(b) In a 25 KV OHE system specify the following for contact wire used?

1. *Material*
2. *Shape*

Q.19 RDSO has designed a new locomotive which will be known as YAP1 Bo-Bo. It uses DC traction motors, each capable of delivering 500 kilowatt of power output. Total weight of the loco is 80 tonnes. Please indicate-

1. *Loco is capable of delivering _____KW electrical power.*
2. *What is the weight per axle?*
3. *Loco is ment to be used on _____gauge for service and uses _____mode of traction.*

Q.20 Please draw a diagram indicating flow of electrical energy from OHE to traction motors in a conventional DC traction motor in an electric loco.

Q.21 Indicate various types of breaks which could be provided in an electric locomotive. Which of these breaks in more energy efficient and why?

Q 22 For minimizing the length of OHE to be isolated under fault , various kind of switches are used. Please mention these along with associated features in terms of their capability to sense fault, open on load and possibility of remote operation. Name the section of OHE controlled by these switches.

Name of the switches	Capable of			Name of the section of OHE controlled
	Fault sensing	Opening on load	Remote operational	
1				
2				
3				

Q.23 How is speed of an electric loco controlled? Please explain briefly.

Q 24. What is the purpose of OHE regulation? How is it achieved ?. How much tension is kept in regulated OHE.

Q.25 Please indicate the illumination levels provided at following locations?

a. *ASM room*
b. *Booking Window*
c. *Officers Chamber*
d. *Operation theatre in Hospital*

Q.26 Write various advantages of using high mast tower lighting viz a viz Sodium lamps in circulating areas.

Q.27 Draw a schematic diagram of Power supply distribution substation for a rly colony.

Q.28 Write advantages of 'Underground cable' with respect to 'Overhead line'.

Q.29 What are the different type of fire extinguishers used for different type of fires.Describe in brief working of fire extinguisher used for 'electrical fire'.

Q.30 Indicate power of following electrical appliances-

a. Incandescent Lamp
b. T5 Tube light
c. Ceiling fan
d. Light socket (5mpr)

e. 1.5 tone window AC
f. Electric iron

Q.31 Write short note on two flat rate terry and two parts terry system.
Q.32 Write short note on UPS and its usage in railway system.
Q.33 What are the advantages of 'sealed maintenance battery' with viz –a-viz conventional battery.
Q.34 describe in brief various 'fire preventing measures' taken in a coach on Railway system.
Q.35 What are different types of pumps used in Railway colony. Write short note on any one of them.
Q.36 What are the criteria taken in to consideration while deciding pump capacity .
Q.37 Write ten steps taken for 'energy conversation' in railway system in a non electrified territory.
Q.38 Write short note on different type of train lighting system used in Indian Railways.
Q.39 Draw a schematic diagram of '110V DC train lighting system'.
Q.40 Write note on capacity of different batteries used in various type of coaches in IR.
Q.41 Write short note on level of illumination followed in different type of coaches in IR.
Q.42 Please indicate various types of maintenance schedules carried out in AC coaches.
Q.43 Draw typical schematic diagram of typical 'Traction sub –station'.
Q.44 Write short note on following-

a. SSP b. BSP c. CFP

Q.45 Write short note on Remote Control Centre.
Q.46 What are the different type of OHE bonds used in electrified territory .
Q.47 Write short note on following-

a. Sub sector, b. Elementary section, c. Sector d. Tension length

Q.48 Write short note on following-

a. Stagger b. Setting distance c. Insulated overlap d. Neutral section

Q.49 Write short note on following-

a. Different type of Traction masts Used in OHE
b. Different type of Foundations
c. Different type of portals

Q.50 Write short note on following-

a. Type of insulators
b. Type of jumpers

Q.51 Draw sketch of following-

a. *Structure bond*
b. *Draper assembly*
c. *Side bearing foundation*
d. *BFB type mast*

Q.52 Write short note on quota of scheduled monthly inspections to be carried by TRD officers in a Division.

Q.53 The floor diagram of different equipments of electric locomotives.

Q.54 Write short note on

a. *Arno convertor*
b. *Tap changer*
c. *SL*
d. *SIU*

Q.55 Indicate wheel arrangements for following type of locomotives-

a. *WAG4*
b. *WM4*
c. *WAP5*
d. *WAG6*

Q.56 What are the different maintenance schedules carried in an passenger & goods Electric Loco?

Q.57 What are the different classifications of running staff from safety gradation point of view?

Q.58 Write short note on following-

a. *PME*
b. *LRD*
c. *Periodical rest*
d. *Running duty hours*

Q.59 What are the different type of running allowances payable to loco running staff.

Q 60 a) Write five safety items provided in an electric loco.

b) Write short note on 'Brake power certificate' and 'Caution Order'.

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Question Bank for Quiz
(Electrical Engineering)

I) Power/Coaching

Q.1 Illuminance is defined as _____

Q.2 The unit for measuring illuminance is _____.

Q.3 Full form of CFL is_____.

Q.4 The diameter of T8 version of Fluorescent tube light is _____.

Q.5 Wattage of T5 Fluorescent tube light is_____.

Q.6 Life of T5 lamp is approximately _____burning hours.

Q.7 Full form of LED lamp is _____lamp.

Q.8 The platform lighting at railway station is divided in two circuits. Before arrival of train, _____light is switched on.

Q.9 DCP type of fire extiquisher used for electrical fire.

Q.10 Full form of ACSR conductor is_____.

Q.11 The voltage and frequency of domestic power supply system in India is _____ and_____.

Q.12 Average life of lead acid battery is _____yrs.

Q.13 Battery of _____ampere hour capacity is used in AC 3tier coach.

Q.14 Rating of alternator for BG AC coach is 18/25 KW.

Q.15 The cut in speed for 4.5kw alternator used in Sleeper class coach is _____ kmph.

Q.16 In sleeper class coach , _____lux of illumination level is minimum needed.

Q.17 Term “air-conditioning” was coined by _____in 1906.

Q.18 The EFT in coaches is provided for

a. Controlling the DC supply
b. Feeding the battery
c. Extending power supply to/from the adjoining coaches
d. None of the above

Q.19 Subject of Air conditioning of coaches on Indian Railways comes under the jurisdiction of

a. CESE b. CEGE c. CELE d. CEDE

Q.20 Turbine pumps are used up to a suction head of

a. 1000 Ft. b. 100 Ft. c. 20 Ft. d. 50 Ft.

Q.21 The yard stick for provision of Electrical points in staff quarters can be changed by the Zonal railways with the approval of

a. Railway Board b. EIG

c. General Manager d. CSO

Q.22 The type of refrigerant used in LHB type of AC coaches is

a. R 12 b. F22 c. R 134a d. none of the above

Q.23. Who functions as Electrical Inspector to Government of India in Indian Railways?

(a) Chief Electrical Loco Engineer

(b) Chief Electrical Services Engineer

(c) Chief Electrical Engineer

(d) Chief Safety Officer

Q.24 The human comfort level in an AC environment is effected by

a. Level of lighting b. Draft

c. Level of tiredness d. Speed of the train

Q.25 The illumination is measured in term of

a. Tesla b. Candela/m2

c. Lux d. Gauss

Q.26 The train lighting system used on EMUs is known as

a. Head on Generation System b. Self Generation System

c. End on Generation System d. Mid on Generation System

Q.27 Railway station with annual passenger earnings from Rs. 3 to 6 Crs. are categorized as

a. A1 class b. C Class

c. B Class d. F class

Q. 28 The capacity of battery used in LHB Rajdhani coaches is

a. 120 Ah b. 1100 Ah

c. 90 Ah. d. 70 Ah

Q.29 In the months of rainy season what role can the air-conditioning system of conventional AC coaches perform?

(a) It can increase the Relative humidity

(b) It can decrease the Relative humidity

(c) It can neither increase nor decrease the Relative humidity.

(d) Relative humidity can both be increased and decreased from the setting of the control panel.

Q.30 The system of power supply used in the Coaches of Rajdhani & Shatabdi Express on IR is known as

(a) Self Generation

(b) End-on-Generation

(c) Mid-on-Generation

(d) Head-on- Generation

Q.31 A 3 tonne capacity AC will be able to remove heat @

a. 2500 K Cal/Hr b. 5000 K Cal/Hr

c. 9000 K Cal/Hr d. 6000 K Cal /Hr

Q 32 The numbers of AC Plants in an AC Ist Class coach (open type system) are:

a. Three b. Two

c. One d. Four

Q.33 The EIG draws his powers from

a. The “Indian Electricity Act” b. The“Indian Electricity Rules”

c. The “Indian Railways Act” d. The “Electricity Act, 2003”

Q.34 The frequency of domestic AC power supply adopted in India is

a. 60 Hz. b. 50 Hz c. 75 Hz. d. 90 Hz.

Q.35 Train lighting on Indian Railways comes under the jurisdiction of

a. CESE b. CEGE c. CELE d. CEDE

Q.36 Both of the pump and motor are inside water in case of

a. Turbine pump b. Submersible pump

c. Centrifugal pump d. Jet pumps

Q.37 The Mid on Generation system of train lighting is used for

a. Rajdhani Exp. Trains b. MEMU trains

c. Slow passengers trains d. Garibrath Exp. trains

Q.38 Condenser is a part of

a. RMPU b. Cantilever Assembly

c. Arno Converter d. Submersible Pump

Q.39 Branch officer in division looking after maintenance of AC coaches in Division is known as ?

a. Sr.DEE/M b. Sr.DEE /P

c. Sr.DEE /G d. Any of a,b,or c

Q.40 To reduce Electrical energy bill , power factor should be kept

a. as less as possible

b. as high as possible

c. power factor does not effect energy bill

d. as close to unity as possible

Q.41 Railway station with annual passenger earnings from Rs. 3 to 6 Crs. are categorized as

a. A1 class b. C Class

c. B Class d. F class

"You are working in Western Railway which comprises of Mumbai, Vadodara, Ahmedabad, Rajkot, Bhavnagar, and Ratlam divisions. While Mumbai Vadodara and Ratlam divisions are almost fully electrified, Rajkot and Bhavnagar Divisions have no electrification. Some portion of Ahmedabad divisions is electrified. There are 2 Eectric loco sheds in Western Railway i.e. Vadodara and Valsad (in Bombay Division). There is a Makarpura TSS and conventional neutral section at LKD station between Makarpura and Bharuch. Makarpura to Bharuch is a flat section and maximum possible distance between the masts has been kept."

Q.42 If you are posted as a branch officer in Rajkot Division for OHE related works, , you are likely to be known as

a. Sr.DEE/TRS b. Sr.DEE (P)

c. Sr.DEE /TRO d. either b or c

Q.43 A section of ADI division has been electrified recently. Before energizing this section, whose sanction is essential

a. GM/WR b. CEE/WR

c. DRM/ADI d. Sr.DEE/TRD/ADI

Q.44 Who is designated as EIG. in railways? ---------

Q.45 The standard voltage adopted for 3phase AC system in India is

a. 750 V AC b. 440 V AC c. 230 V AC d. 110V AC

Q. 46 Modified TL system is 2 wire unearthed system.

Q. 47 In RMPU type AC coach, 4 number of compressors are used.

Q.48 Capacity of inverter in RMPU AC coach is_____.

Q.49 Presently following type of AC coaches are used:

a. HOG b. MOG

c. LHB d. None

Q. 50 A-9 auto valve is set to regulate brake pipe pressure in released condition at _____

II) TRD/RE

Q.1 Electrification in Indian Railways was introduced for the first time in the year _____.

Q.3 Average cost of electrification on double line section is around _____per route km.

Q.4 As per Vision -2020 plan of electrification, _____km are to be electrified every year till 2020.

Q.5 Minumum verticle distance between live OHE and fixed structure / moving loads is _____ for long duration.

Q.6 Minumum lateral distance between live OHE and fixed structure /moving loads is _____ for long duration.

Q.7 Minimum safe clearance for men to work near OHE is _____

Q.8 N Type portals are used to cover OHEs of _____ number of tracks.

Q.9 O Type portasl are used to cover OHEs of _____ number of tracks.

Q.10 R Type portals are used to cover OHEs of _____number of tracks.

Q.11 The standard height of contact wire above the track plane is kept as _____ _____at cantilever.

Q.12 The height of OHE at level crossing gate is kept as minimum_____.

Q.13 The stagger of OHE on tangent track is normally kept as_____.

Q.14 The full form of UIOL is_____.

Q.15 The Section insulator in OHE is provided for the purpose of_____ _____.

Q.16 The PTFE type neutral section is located on tangent track at least_____ _____. after the stop signal.

Q.17 The setting distance of mass on tangent track shall be normally _____for the broad guage.

Q.18 The normal setting distance of portal is kept as_____.

Q.19 The maximum span in OHE is restricted to_____.

Q.20 _____capacity Auxiliary transformers are provided at stations for supply power to signaling system.

Q.21 The head quarter of CORE in Indian Railway is at_____.

Q.22 The full form of CORE is_____.

Q.23 The average yearly Railway Electrification planned under Vision 2020 is

a. 5000 RKM b. 1400 RKM c. 4500 RKM d. 2500 RKM

Q.24 The horizontal distance between the Center Line of the Track and nearest face of the mast is known as

a. Stagger b. Implantation

c. Span d. Height

Q.25 The requirement of copper and steel is reduced in 25 KV single phase AC system as compared to DC system because of

a. Lower voltage b. Lower current

c. Lower power d. Lower energy

Q.26 O type portals are used for supporting OHE up to

a. 4 tracks b. 6 tracks

c. 8 tracks d. 3 tracks

Q.27 Overlap provided at an SSP is

a. UIOL b. IOL

c. Neutral section d. Section insulator with isolator

Q.28 What is the distance of warning boards from neutral section location:-

a. 100 m & 500 m. b. 2000 m & 1000 m

c. 500 m & 250 m d. 250 m & 150 m

Q. 29 Contact wire is placed in zig-zag manner in entire span length, in order to-

(a) to avoid formation of groove on panto pan strip

(b) to ensure uniform rubbing of pantopan strip within current collection strip

(c) to avoid breakdown due to formation of groove in pantopan strip

(d) all of the above

Q.30 All RE works on Indian Railways are centrally controlled by

a. Zonal Railways b. Divisions

c. CORE d. Production Units

Q.31 Bracket tube is a part of

a. RMPU b. Cantilever Assembly

c. Arno Converter d. Submersible Pump

Q.32 The stagger of contact wire at **push off** location is directed

a. Towards the OHE structure

b. Away from the OHE structure

c. Right at the centre line of track

d. None of the above

Q.33 The section insulator is used for

a. Insulating the two phases in a TSS

b. Insulating two elementary sections of OHE

c. Insulating the OHE at insulated overlap

d. None of the above

Q.34 The total Railway Electrification sanctioned in the 11th five year plan

a. 5000 RKM b. 3500 RKM

c. 4500 RKM d. 2500 RKM

Q.35 In an AC TSS, which phase of 132 KV/25 KV traction transformer should be earthed?

a. one phase of 132 KV primary side

b. both phases of 132 KV primary side

c. one phase of 25 KV secondary side

d. both phases of 25 KV secondary side

Q.36 The power supply between two adjacent Traction Substations feeding the OHE in TRD is separated by

a. SP b. SSP

c. FP d. RCC

Q.37 The horizontal distance between the Center Line of the Track and nearest face of the mast is known as

a. Stagger b. Implantation

c. Span d. Height

Q.38 Freight traffic hauled on electric traction on IR is

a. 75% b. 67%

c. 60% d. None of a,b,c

Q.39 Numbering of OHE structures on up line in a double line section will always be

a. Even nos. b. In sequence

c. Odd nos. d. none of the above

Q.40 Minimum height of contact wire on level crossings is

a. 5.8 Mtr. b. 5.6 Mtr. c. 4.67 Mtr. d. 5.5 Mtr.

Q.41 Before charging any new electrified section on 25 kv AC, whose sanction is required.

a. CRS b. ML c. GM d. CEE

Q.42 Before approaching neutral section, loco pilot is required to open DJ in loco to avoid _____ in OHE.

Q.43 First Electric train in India started on 3rd February _____.

Q.44 The horizontal distance between the Center Line of the Track and nearest face of the mast is known As_____.

a. Stagger b. Implantation

c. Span d. Height

Q.45 Which of the following is a permissible span

a. 62 m b. 49.5m c. 45.5m d. 35m

Q.46 To avoid formation of groove on panto, contact wire is held in a Zig Zag fashion. This arrangement is known as _____.

Q.47 Before approaching neutral section, loco pilot is required to open in loco to avoid _____ in OHE.

Q.48 While length of conventional neutral section is 41 mt, modern PTFE neutral section are only _____ mt long.

Q.49 Which of the following is a permissible OHE span

a. 62 m b. 41 m c, 48 m d. 54m

Q.50 What is the distance of warning boards from neutral section location:-

a. 100 m & 500 m. b. 2000 m & 1000 m

c. 500 m & 250 m d. 250 m & 150 M

Q.51 In general Traction Voltages on India Rly is.

a. 1500 Volt b. 3000 Volt

c. 25000 Volt d. 750 Volt

Q.52 Indicate normal values of following

1. SPAN_____.
2. Setting Distance_____.
3. Encumbrance _____.

Q.53 What is the material used in Contact wire_____.

Q.54 Where is portal used?_____

Q.55 Regulating winding of auto transformer is provided with _____ taps.

a) 6 b) 8 c) 16 d) 15 ( )

Q.56 Define Elementary section of OHE_____

_____

Q.57 In yards where adequate distance between tracks in not available, OHE is supported with the help of-

a) Mast b) Upright c) Broom d) Portal?

Q.58 Electric supply in a sector of OHE is controlled by

a) Isolator b) Interrupter c) Circuit Breaker d) Either b or c

Q.59 HOD looking of the maintenance of traction distribution is known as _____?

Q.60 In AC traction, span length varies in steps of :-

a. 4.5 meters b. 9 meters

c. 6 meter d. 18 meters

Q.61 Maximum span length in AC traction is :-

a. 67.5 meter b. 72 meter

c. 63 meter d. 22 meter

Q.62 Difference between two consecutive span length should not be more than:-

a. 25 m. b. 20 m. c. 18 m. d. 16 m.

Q.63 Maximum wind pressure considered to design OHE structures for Red zone is:-

a. 180 kgf /sq. m. b. 160 kgf /sq. m.

c. 150 kgf /sq. m. d. 110 kgf /sq. m.

Q 64 Maximum tension length in ac traction is:-

a. 1500 m b. 1600 m c.1000 m d. 750 m

Q.65 At the end of tension length ,an overlap is provided :-

a. to maintain electrical clearance.

b. to maintain mechanical clearance

c. to maintain mechanical & electrical clearance.

d. to provide smooth passage for pantograph.

Q.66 A small tension length is much useful at the time of OHE breakdown or maintenance work due to:-

(a) mechanical independence of each tension length.

(b) to maintain uniform tension in entire tension length.

(a) easy transportation of OHE conductors.

(d) all of the above

Q.67 Which type of overlap is formed at the end of every tension length:-

(a) insulated overlap

(b) un-insulated overlap

(c) either Insulated overlap or un-insulated overlap.

(d) none of the above.

Q.68 Axial distance between catenary & contact wire at the OHE support , in vertical plane is called :-

(a) implantation (b) gradient of OHE (c) encumbrance (d) stagger

Q.69 In AC traction ,normal encumbrance at support is:-

(a) 1.9 m (b) 1.4 m (c) 0 .9 m (d) 2.0 m

Q.70 In AC traction, height of contact wire at support from rail level (regulated OHE) with 100mm pre sag in contact wire is :-

(a) 5.5 m (b) 5.55 m (c) 5.6 m (d) 5.75 m

Q.71 In AC traction, height of contact wire from rail level in Carshed is :-

(a) 5.6 m (b) 5.65 m (c) 5.75 m (d) 5.8 m

Q.72 In AC traction, normal height of the catenary wire at support from rail level (regulated OHE) with 100 mm pre sag in contact wire is about :-

(a) 7 m (b) 7.75 m (c) 7.25 m (d) 7.45 m

Q73 At level crossing gate, maximum height of rail height gauge from the road surface is

(a) 4.381 m (b) 4.67 m (c) 4.80 m (d) 4.45 m

Q.74 At level crossing gate ,normal height of contact wire from the rail level is

(a) 5.80. m (b) 4.67 m (c) 4.80 m (d) 5.50m

Q.75 The fittings, which is used to transfer the weight of contact wire to the catenary wire is called:-

(a) section insulator (b) Jumpers

(c) cantilever assembly (d) droppers

Q 76 Diameter of in-span dropper in ac traction is:-

(a) 7 mm (b) 6.75 mm (c) 6 mm (d) 5 mm

Q. 77 Material of AC contact wire is :-

(a) hard drawn copper (b) annealed copper

(c) cadmium copper (d) brass

Q.78 In AC traction, maximum stagger of contact wire on tangent track is :-

(a) 380 mm (b) 300 mm (c) 229 mm (d) 200 mm

Q.79 On tangent track, contact stagger is 200 mm at support, what will be the catenary stagger?

(a) 300 mm. (b) 200 mm. (c) 100 mm. (d) Zero

Q.80 In regulated OHE, how much tension is kept in OHE:-

(a) as per tension / temperature chart (b) 3000 kg

(c) 2000 kg (d) 1500 kg

Q.81 In regulated OHE, Where anti-creep point is provided ?

(a) starting of tension length (b) finishing of tension length

(c) midway of tension length (d) all of the above

Q.82 Tramway type OHE can be used for :-

(a) main line (b) siding only

(c) wiring of turnouts (d) all of the above

Q.83 A neutral section is provided in OHE between two 25 KV , single phase, 50 Htz. traction sub-stations due to :-

(a) to separate the zones, which fed by the adjacent sub station of different phase

(b) to increases the current carrying capacity of the OHE

(c) to minimise the voltage drop in OHE conductors

(d) all of the above

Q.84 25 KV traction system needs the supply of :-

(a) single phase (b) two phase

(c) three phase (d) three phase & neutral wire

Q.85 In an AC TSS , which phase of 132 KV/25 KV traction transformer should be earthed ?

(a) one phase of 132 KV primary side

(b) both phases of 132 KV primary side

(c) one phase of 25 KV secondary side

(d) both phases of 25 KV secondary side

Q.86 Sub- Sectioning & parallel Post (SSP) are employed in OHE due to ?

(a) to minimise voltage drop (b) OHE sectioning purpose

(c) restrict tension length (d) all of the above

Q.87 The distance of OHE section between FP & SP is called :-

(a) feeding length (b) feeding zone

(c) sector (d) sub sector

Q.88 The shortest section of OHE, which can be isolated through remote control by TPC is called :-

(a) elementary section (b) feeding zone

(c) sector (d) sub sector

Q. 89 The shortest section of OHE, which can be isolated manually is called :-

(a) elementary section (b) feeding zone

(c) sector (d) sub sector

Q.90 Normally, bridging interrupters at SP are in :-

(a) close position

(b) open position

(c) when traction load increased than closed bridging interrupter

(d) when traction load decreased than closed bridging interrupter

Q. 91 In AC traction ,distance between two OHE's conductor ininsulated overlap is kept:

(a) 500 mm. (b) 380 mm. (c) 300 mm. (d) 200 mm.

Q. 92 In AC traction , distance between two OHE's conductor in un- insulated overlap is kept:-

(a) 375 mm. (b) 300 mm. (c) 150 mm. (d) 200 mm.

Q.93 Which type of neutral section, you prefer in heavily graded or suburban section?

(a) overlap type (b) PTFE. Type neutral section

(c) short neutral section comprising section insulator assembly

(d) none of the above

Q.94 PTFE stands for :-

(a) Plastic Tetra Floro Ethane (b) Poly Thermo Finials Ethane

(c) Poly Tetra Floro Ethane (d) Poly Tetra Floro Ethylene

Q.95 In P.T.F.E. type neutral section assembly, Anti torsion droppers are used for:

(a) good current collection at higher speed

(b) to prevent oscillation of OHE

(c) push up of contact wire very gradually

(d) all of the above

Q.96 What is the distance of caution boards from neutral section location:-

(a) 100 m.& 500 m. (b) 2000 m. & 1000 m.

(c) 500 m. & 250 m. (d) 250 m. & 150 m.

Q.97 A device, which installed in contact wire to separate two elementary section & provide smooth passage for pantograph is called :-

(a) insulated overlap (b) section insulator

(c) bracket Assembly (d) cut-in insulator

Q.98 At the location of section insulator , stagger of contact wire should be:-

(a) zero (b) 200 mm (c) 300 mm (d) 380 mm

Q.99 Which insulator is used in ac section insulator assembly:-

(a) sectioning insulator (b) cut insulator

(c) 9- ton insulator (d) stay tube insulator

Q.99 The arrangement of the cantilever assembly depends upon the :-

(a) height of contact wire (b) setting distance

(c) stagger (d) all of the above

Q.100 Which is not a part of the cantilever assembly ?

(a) steady arm (b) adjuster sleeve

(c) anti wind clamp (d) PG clamp.

Q.101 Why gap should be required between register arm tube & anti wind clamp strap:-

(a) to avoid hard spot (b) to hold the register arm

(c) to maintain proper height & stagger (d) to hold steady arm

Q.102 Minimum working clearance for 25 KV AC is :-

(a) 500 mm (b) 1 m (c) 2 m (d) 3 m

Q.103 Normally, which type earth electrode is preferred for earthing in 25 KV AC Installations: -

(a) plate type (b) pipe type (c) strip type (d) none of the above

Q.104 Minimum earth resistance when not specified should not be more than :-

(a) 9 ohm (b) 10 ohm (c) 5 ohm (d) 2.5 ohm

Q.105 Minimum earth resistance for 25 KV TSS should not be more than :-

(a) 5 ohm (b) 2 ohm (c) 1 ohm (d) 0.5 ohm

Q.106 Minimum earth resistance for 25 KV switching station (SSP / SP etc) should not be more than :-

(a) 5 ohm (b) 2 ohm (c) 1 ohm (d) 0.5 ohm

Q.107 Lightning arrester prevents OHE from :-

(a) surge & transient voltage

(b) corrosion of –ve path conductor

(c) back e.m.f.

(d) all of the above

Q.108 The distance between centre line of the track to the nearest face of the structure is called:-

(a) clear span (b) track separation

(c) implantation (d) track clearance

Q.109 Implantation is also known as :-

(a) skip distance (b) setting distance

(c) clear span. (d) track separation

Q.110 What will be the “regulating ratio” of 3 pulley block system type ATD ?

(a) 1:1 (b) 2:1 (c) 3:1 (d) 5:1

Q.111 If SS wire of ATD broken , OHE does not come on ground due to :-

(a) 9-ton insulator (b) fixed pulley (c) movable pulley (d) hex tie rod

Q.112 Current collection test is carried out during :-

(a) before monsoon (b) during monsoon

(c) after monsoon (d) night only

Q.113 What may be the reason of sparking during current collection test.

(a) OHE is not proper

(b) track is not proper

(c) rolling stock is not proper

(d) all of the above or either (a) or(b) or (c)

Q.114 In locally arranged power block ,supply of the siding or yard is shut down by :-

(a) TPC (b) section controller

(c) yard master (d) OHE incharge, who required power block

Q.115 TPC arranges emergency power block in which of following case/s?

(a) a damaged OHE or feeder falling down and or persons or animals or vehicle or falling trees coming in contact with or likely to come in contact with live equipment

(b) a damaged electric loco & driver requires the permit to work

(c) derailment or any other accident on the electrified section

(d) all of the above

Q.116 In the private no. book , private nos. are printed in the form of :-

(a) two digits, serially (b) three digits, serially

(c) two digits, not serially (d) three digits, not serially

Q.117 During power block , which type vehicles movement is blocked in power block section ?

(a) electric hauled (b) diesel hauled

(c) steam hauled (d) all of the above

Q.118 Before granting power block in the section , the longitudinal protection and lateral protection in the section is arranged by:-

(a) TPC (b) section controller

(c) TNL (d) station master

Q.119 If OHE breakdown or defect in OHE , which are likely to affect the train services noticed by any railway servant , will be reported immediately to :-

(a) TPC (b) station master

(c) section controller (d) either (a) or (b) or (c)

Q.120 Cross section area of contact wire in AC OHE is_____.

Q121 Diameter of dropper is _____mm.

Q122 Spacing between droppers in span is 9 mts

Q123 To pass ODC in electrified territory, clearance should be greater than 100mm.

III) LOCO/EMU-MEMU/Operation

Q.1 The visibility of flasher light in electric locomotive is_____.

Q.2 The maximum speed of fastest train hauled on electric section is 140 km in India.

Q.3 WAP5 loco has designed power rating of _____ horsepower.

Q.4 The latest loco being manufactured in Indian Railway is_____.

Q.5 Electric locos in India are manufactured at_____.

Q.6 Loco pilot is given headquarter rest for _____ for duty performed of more than 8 hours duration.

Q.7 The out station rest to Loco pilot is given for _____for duty of more than 8 hours duration.

Q.8 The running staff is entitled for _____ number of rest of 30 hrs. duration.

Q.9 Specific Energy Consumption for goods train which around _____per 1000 GTKM

Q. 10 Smoothing reactor (SL) is provided to :

(a) Convert AC to DC (b) Increase undulation of current

(c) Reduce undulation of current (d) Reduce OHE supply

Q. 11 ARNO converter is provided to convert :

(a) Three phase to single phase (b) AC to DC

(b) DC to AC (d) Single phase to three phase

Q. 12 WAG.5 loco are provided with:

(a) DC series motor (b) Single phase Induction motor

(c) DC compound motor (d) None of the above

Q.13 POH of Electric locos is carried out in

a. Trips sheds b. Loco sheds

c. Depots d. Workshops

Q.14 POH of Electric locos is carried out in

a. Trips sheds b. Loco sheds

c. Depots d. Workshops

Q.15 RDSO designed a new locomotive which will be known as YAP1 Bo-Bo. Each motor is capable of delivering power out put of 500 kw. Total weight of the loco is 80 tonnes.

1. What is the total power of the loco (delivered by all the motors put together) _____ kw?
2. What is the weight per axle _____ ?
3. For which gauge this loco is designed_____?

Q.16 Various types of Brakes provided in a locomotive could be

1.

2.

3.

Q.17 What is the principle of speed control in an electric locomotive? Please explain the process briefly.

Q.18 Write function of following equipments of electric loco in one line -

1.Rectifier

2. DJ

3. Pantograph

Q.19 What operations loco pilot requires to perform before entering a neutral section?

Q. 20 In a Bo-Bo-Bo type of locomotive, how many traction motors (axels). Will be there?

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

Q.21 What does MEMU stand for ?

a) 220V _____.

b) 50Hz _____ ( )

Q.22 Electric loco is provided with 2 pantograph? Which one is normally used.

a) Front b) Rear c) Any one of the two d) c or b

Q 23 First letter of classification indicates ---------of loco.

Q 24 Two axle bogie with one traction motor for each axle is classified as ---------

Q 25 WAG.5 loco is provided with ---------bogie arrangement.

Q 26 WAP.5 loco is provided with -------bogie arrangement.

Q 27 WCG.2 loco can work under --------traction supply.

Q 28 There are --------- No. of maintenance sheds over IR for maintenance of electric locos.

Q 29 ----------type Traction motor is used in WAP.4 locos.

Q 30 ----------type Traction motor is used in WAP.5 locos.

Q 31 Electric loco draws power from OHE with the help of ----------

Q 32 Electric Locomotive is provided with ----------nos of pantograph.

Q 33 ----------can be remote controlled from driving cab to disconnect OHE supply.

Q 34 High OHE voltage is stepped down with ----------

Q 35 The voltage to traction motors can be controlled through ----------.

Q 36 WAG.5 loco are provided with :

(a) DC series motor (b) Single phase Induction motor (c) DC compound motor, (d) None of the above.

Q 37 Smoothing reactor (SL) is provided to :

(a) Convert AC to DC (b) Increase undulation of current

(c) Reduce undulation of current (d) reduce OHE supply.

Q 38 Auxiliary machines in locomotive work on:

(a) Single phase ac supply (b) DC supply

(c) Three phase supply (d) All of them

Q 39 Traction Motors are mounted:

(a) On loco roof, b) In under frame,(c) Inside Locomotive

(d) None of them.

Q 40 Normally loco pilot uses :

(a)Front pantograph (b) Rear Pantograph,

(c) Both Pantograph (d) None of them.

Q 41 ARNO converter is provided to convert:

(a) Three phase to single phase, (b) AC to DC

(c) DC to AC (d) Single phase to three phase.

Q 42 Independent brakes are provided for:

(a) Brake application in loco alone

(b) Brake application in train alone,

(c) Brake application in loco and train both

(d) None of them.

Q 43 During dynamic braking :

(a) Kinetic energy of loco is converted to Electrical Energy

(b) Electrical energy is converted to mechanical energy,

(c) Mechanical brakes are applied in loco

(d) None of them.

Q 44 In regenerative braking:

(a) Electrical energy produced is converted to heat energy,

(b) Electrical energy produce is fed to traction motor,

(c) Electrical energy produced is fed back to OHE

(d) None of above.

Q 45 Supply in control circuit of loco is :

(a) 380 Volt single phase, (b) 380 Volt three phase,

(c) 110 Volt DC, (d) 110 Volt AC.

Q 46 The input supply to three phase traction motor is:

(a) Fixed frequency variable voltage, (b) Fixed voltage variable frequency,

(c) Variable voltage variable frequency, (d) None of them.

True or False :

Q 47 In DC locos all the traction motors are connected in parallel in starting

Q 48 In AC locos, starting resistances are introduced to control the speed of Traction Motors.

Q 49 WAP.4 locos are three phase locomotives.

Q 50 WAG.9 locos are three phase locomotives.

Q 51 Three phase traction motors are used in WAP.5 locos.

Q 52 POH of electric loco motive is carried out at nominated electric loco work shop.

Q 53 WAG.5 locos have Co-Co bogies.

Q 54 Pantograph is mounted within the driving cab of the loco.

Q 55 Mechanical Brakes in Locomotives are air brake only.

Q 56 Silicon rectifiers reduce the undulation of current.

Q 57 Transformer is used to step down OHE supply.

Q 58 IGBTs are used to convert single phase to three phase supply.

Q 59 Bo wheel arrangement indicate two axle bogie with two traction motors.

Q 60 WAP.5 loco can work both in AC and DC sections..

Q 61 ARNO converter converts AC supply to DC.

Q 62 In locomotive, brakes are applied by destroying vacuum.

Q 63 ARNO converters are being replaced by static converters.

Q 64 Proportionate brakes in loco are applied with A9 brake valve.

Q 65 DC series traction motors are provided in WAG.9 locomotives.

Q 66 AOH of WAG.5 loco is carried out after 18 months.

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