

Model Question of TRD (OHE)

1. A neutral section is provided in OHE between two 25 kV, single phase , 50 Htz. traction substations due to
 - (a) To separate the zones, which fed by the adjacent substation 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

- 2 Normally, two adjacent 25 kV AC traction sub stations works as in
 - (a) Parallel (b) Series (c) Independent (d) Cannot say

3. In Indian Railways, what will be the maximum permissible % of unbalance voltage for 2 minutes ?
 - (a) 1% (b) 2% (c) 3% (d) 5%

4. The no. plate of OHE structures for UP line will be such as
 - (a) 75/12, 75/13, 75/14, -----etc. (b) 75/12A, 75/13A, 75/14A, -----etc.
 - (c) 75/13, 75/15, 75/17, -----etc.. (d) 75/13A, 75/15A, 75/17A, -----etc..

5. What is the main advantage of CB over interrupter?
 - (a) Isolate by remote control (b) Less maintenance
 - (c) Automatic trip the circuit when fault occurred (d) All of the above

6. The shortest section of OHE, which can be isolated manually, is called
 - (a) Elementary section (b) Feeding zone (c) Sector (d) Sub sector

7. Standard span length in regulated AC traction is
 - (a) 55 meters (b) 57.5 meter (c) 49.5 meter (d) 61 meter

8. Difference between two consecutive span length should not be more than
 - (a) 25 m. (b) 20 m. (c) 18 m. (d) 16 m.

9. On curves , The measurement of span length in odd number of track is measured from
 - (a) Outer rail of the middle track (b) Inner rail of the middle track
 - (c) Outer rail of the first track (d) Inner rail of the last track

10. Maximum tension length in AC traction is
 - (a) 1500 m (b) 1600 m
 - (c) 1000 m (d) 750 m

11. At the end of tension length ,an overlap is formed due to
 - (a) To maintain electrical clearance.
 - (b) To maintain mechanical clearance
 - (c) To maintain mechanical & electrical clearance.
 - (d) To provide smooth passage for pantograph.

12. Distance between one anchoring end to other anchoring end of OHE's conductors is called
 - (a) Tension length (b) Span length (c) Implantation (d) Encumbrance

13. 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.

14. Maximum wind pressure is considered to design OHE structures for Red zone
(a) 180 kgf /sq. m. (b) 160 kgf /sq. m. (c) 150 kgf /sq. m. (d) 110 kgf /sq. m.
15. If OHE structures erected on more than 150 m long bridge , the wind load is considered according to wind pressure zone for OHE structures
(a) 25 % more (b) 40 % more (c) 50 % less (d) 25 % less
16. When diameter of contact & catenary increases twice, than Blow-off will be
(a) 2 times (b) 4 times (c) half times (d) remains same
17. Maximum deflection of mast at contact wire level due to wind pressure, is allowed
(a) 80 mm. (b) 70 mm. (c) 60 mm. (d) 40 mm.
18. In AC traction, normal encumbrance at support is
(a) 1.9 m (b) 1.4 m (c) 0 .9 m (d) 2.0 m
19. At turnout structure , It is general practice to give encumbrance of 1.4 m to the turnout OHE & 0.9 m to the main line OHE due to.
(a) To maintain proper tension. (b) To accommodated section insulator in turnout OHE
(c) To maintain proper stagger. (d) None of the above.
20. Maximum permissible relative gradient of contact wire in two adjacent span shall not be greater than on sidings .
(a) 2 mm /m. (b) 3 mm /m. (c) 4 mm /m. (d) 5 mm /m.
21. When level crossing gate is approached , the height of contact wire is
(a) Reduce (b) Increase (c) Either Reduce or Increase (d) Neither Reduce or Increase
22. Maximum permissible relative gradient of contact wire in two adjacent span shall not be greater than on main lines
(a) 1.5 mm /m. (b) 2 mm /m. (c) 3 mm /m. (d) 4 mm /m.
23. Maximum permissible gradient of contact wire, when maximum permissible train speed is more than 100 kmph on main lines
(a) 2 mm/m (b) 3 mm/m (c) 4 mm/m (d) 5 mm/m
24. In AC traction, minimum height of contact wire under ROB/FOB from rail level to permit “C” class ODC.
(a) 4.92 m (b) 4.80 m (c) 4.65 m (d) 5.03 m
25. In AC traction, height of contact wire from rail level in Car shed is
(a) 5.60 m (b) 5.65 m (c) 5.75 m (d) 5.80 m
26. In AC traction , height of termination of regulated OHE is
(a) 6.45 m (b) 6.75 m (c) 6.95 m (d) 7.25 m
27. In AC traction, height of catenary termination for split anchor (regulated OHE) is
(a) 6.75 m (b) 6.95 m (c) 7.15 m (d) 7.25 m
28. At level crossing gate, maximum height of rail height gauge from the road surface is
(a) 4.38 m (b) 4.67 m (c) 4.80 m (d) 4.45 m

29. In AC traction, tolerance in height of catenary wire from rail level at support is (As per RDSO letter no.TI/OHE/GA/3013 dated 14.05.13
(a) Zero (b) ± 50 mm (c) ± 20 mm (d) ± 10 mm
30. In AC traction , the minimum height of contact wire is
(a) 4.69 m (b) 4.79 m (c) 4.92 m (d) 4.89 m
31. 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
32. Diameter of inclined dropper in bracket assembly is
(a) 7 mm (b) 5 mm (c) 9 mm (d) 6 mm
33. In AC traction , how many droppers in 58.5 m span length
(a) 9 droppers (b) 8 droppers (c) 7 droppers (d) 6 droppers
34. In AC traction, distance of 2nd dropper from 1st dropper in 72 m span length
(a) 9.0 m (b) 6.75 m (c) 4.5 m (d) 2.25 m
35. In AC traction, a chain dropper is consists of parts viz (i) Fixed part (ii) Variable part. What will be the length of fixed part
(a) 152 mm (b) 125 mm (c) 105 mm (d) 76.2 mm
36. When equal encumbrance 1.4 m. is given at both OHE supports & 100 mm pre sag in contact wire, what will be the length of 2nd dropper in 72 m span length?
(a) 1118 mm (b) 1018 mm (c) 908 mm (d) 902 mm
37. Chain droppers are used for smooth adjustment of section insulator, both the pieces of chain droppers are connected together by P.G. clamp, what is the length of piece of dropper ?
(a) 400 mm (b) 450 mm (c) 350 mm (d) 320 mm
38. No. of layers & strands of AC catenary wire is
(a) 3 layer & 19 strands (b) 2 layer & 19 strands (c) 2 layer & 37 strands (d) 3 layer & 37 strands
39. Per meter weight of catenary wire is
(a) 1250 gm (b) 971 gm (c) 951 gm (d) 603 gm
40. Tensile strength of aluminum, in terms of equivalent copper will be
(a) 75 % (b) 66 % (c) 50 % (d) 45 %
41. The displacement of contact wire with respect to the pantograph axis is called
(a) Implantation (b) Stagger of contact wire (c) Gradient of contact wire (d) Sag
42. Which factor affects the stagger of contact wire ?
(a) Blow-off (b) Versine (c) Track slewing (d) All of the above
43. On curved track , contact stagger is 300 mm. at support, what will be the catenary stagger
(a) 300 mm (b) 200 mm (c) 100 mm (d) Zero
44. When span length, increases twice than versine will be
(a) 2 Times (b) 4 Times (c) 8 Times (d) Remains same

45. At curve track versine is measured from the
(a) Inner edge of the outer rail (b) Outer edge of the outer rail
(c) Inner edge of the inner rail (d) Outer edge of the inner rail
46. In regulated OHE, when temperature increased than tension of OHE conductors
(a) Increased (b) Decreased (c) Remains same (d) Cannot say
47. Distance between anti-creep point & anchoring structure should not be more than
(a) 1600 m. (b) 1500 m. (c) 750 m. (d) 600 m.
48. Unregulated OHE is suitable for the speed
(a) Above 100 KMPH (b) Less than 60 KMPH (c) Upto 80 KMPH (d) Upto 100 KMPH
49. What is the initial tension in an unregulated OHE ?
(a) 2000 kg (b) 1000 kg (c) 3000 kg (d) 1500 kg
50. Which system is polygonal OHE system?
(a) Simple catenary system (b) Compound catenary system
(c) Stitched catenary system (d) All of the above
51. In simple catenary system (regulated) , without pre sag in contact wire is suitable upto the maximum speed
(a) 80 kmph (b) 100 kmph (c) 120 kmph (d) 140 kmph
52. Compound catenary system is suitable upto the maximum speed
(a) 160 kmph (b) 100 kmph (c) 120 kmph (d) 190 kmph
53. Compound catenary system consists of
(a) Catenary & contact wire (b) Auxiliary catenary & contact wire
(c) Main catenary, auxiliary catenary & contact wire (d) Contact wire
54. Advantage of simple catenary system over compound catenary system
(a) light in weight (b) Construction & erection is easy
(c) Breakdown restoration & maintenance is easy (d) All of the above
55. In stitched catenary system , a short length of supplementary catenary (say 10 m) is provided at
(a) Support (b) Mid span (c) Between support & mid span (d) All of the above
56. Which OHE system provide less push up due to passage of pantograph of the moving train ?
(a) Tram way OHE (b) Simple catenary system
(c) Stitched catenary system (d) Compound catenary system.
57. What do you mean by the elasticity of the contact wire ?
(a) Amount of vertical lift corresponding to vertical static force
(b) Amount of vertical lift corresponding to weight of the pantograph
(c) Amount of horizontal lift corresponding to vertical pressure
(d) All of the above
58. If span length increases , than variation in elasticity of OHE
(a) Increases (b) Decreases (c) Remains same (d) Cannot say

59. Minimum elasticity of OHE occurs at support , which does not depend upon
(a) Tension of OHE (b) Span length(c) Vertical static force by pantograph (d) Weight of OHE.
60. What may be the cause of contact wire parting?
(a) Opening of silver brazed joint (b) Failure of PG clamp & ending cone
(c) Improper & over tension in contact wire (d) All of the above
61. An arrangement of OHE over a track, where two sets of OHE conductors are run parallel to each other for a short distance & provide smooth passage for pantograph, is called
(a) Turnout (b) Crossover (c) Overlap (d) Neutral section
62. In AC traction, distance between two OHE's conductor in insulated overlap is kept
(a) 500 mm. (b) 380 mm. (c) 300 mm. (d) 200 mm.
63. Un-insulated overlap is provided in OHE because
(a) To restrict span length (b) To restrict tension length (c) Quick isolation of OHE (d) All of the above
64. Normally, insulated overlap are employed at the location
(a) SSP (b) FP (c) Booster transformer's location (d) All of the above.
65. In AC traction, cut-in insulators are provided at insulated overlap, the distance of cut-in insulator from the mast is
(a) 18 m (b) 9 m (c) 4.5 m (d) 2 m
66. A short dead section of OHE, which separates two adjoining elementary section & provide smooth passage for pantograph is called
(a) Insulated overlap (b) Un-insulated overlap (c) Neutral section (d) All of the above.
67. 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.
68. The length of PTFE type neutral section is
(a) 5.163 m (b) 5.64 m (c) 5.92 m (d) 6.21 m.
69. Stagger at PTFE type Neutral section assembly is
(a) Zero or maximum 100 mm. (b) 100 mm or maximum 200 mm
(c) 200 mm or maximum 300 mm (d) 300 mm or maximum 380 mm.
70. The caution boards to are provided to attend the driver of train show the distance of neutral section location what will be the location of both caution boards from the Neutral section
(a) 100 m.& 500 m (b) 2000 m. & 1000 m (c) 500 m. & 250 m (d) 250 m. & 150 m
71. The arrangement of over lap type turn out will be in
(a) One span (b) Two spans (c) Three spans (d) Four spans.
72. In overlap type turn out, the normal desirable length of zone, where the panto contacts both contact wire will be in
(a) 500 mm (b) 1 m (c) 6 m – 9 m (d) 12 m
73. A cross type turnout is suitable for
(a) Main line (b) Only yard line (c) Either main line or yard line (d) Cannot say

74. Obligatory structure is required to be provided at
(a) Bridge piers (b) Before & after over line structure (c) Cross over & turnout (d) All of the above.
75. The height of cross over contact wire should be maintained 50 mm above from main line contact wire in entire danger zone at either side of obligatory location which falls within
(a) 5 m towards turn out (b) 10 m towards turn out (c) 15 m towards turn out (d) 20 m towards turn out
76. At section insulator location , encumbrance should not be less than
(a) 152 mm (b) 320 mm (c) 450 mm (d) 600 mm
77. At the location of section insulator, maximum stagger of contact wire may be allowed
(a) 50 mm (b) 100 mm (c) 200 mm (d) 300 mm.
78. Suitable location of section insulator from the mast on turnout OHE is
(a) Between $1/3$ & $1/10$ th of span length (b) Between $1/3$ & $1/5$ th of span length
(c) Between $1/5$ th & $1/10$ th of span length (d) Between $1/2$ & $1/3$ span length.
79. Horizontal clearance between two runners of ac section insulator is
(a) 500 mm (b) 460 mm (c) 320 mm (d) 200 mm.
80. In AC traction , Which jumper distribute the current between catenary wire & contact wire
(a) “C” Jumper (b) “F” jumper (c) “G” jumper (d) “S” jumper.
81. Three “C” jumper’s are used in each tension length. Among three, one is provided at anti-creep point where other two “C” jumper’s are provided?
(a) near anticreep location (b) between 2nd & 3rd dropper
(c) adjacent span length of anticreep location (d) between ATD & anticreep location.
82. “F” jumpers are provided at
(a) Insulated overlap (b) Un-insulated overlap (c) Turnout (d) Anti creep point
83. Length of “C” jumper is
(a) 1.2 m (b) 1.5 m (c) 2.0 m (d) 4.5 m.
84. Cross section area of “F” jumper is
(a) 50 sq. mm (b) 60 sq. mm (c) 97 sq. mm (d) 107 sq. mm.
85. Distance of “G” jumper from the nearest mast is
(a) 4.5 m (b) 5.6 m (c) 6.75 m (d) Not fixed.
86. What will be the remaining length of the bracket tube beyond the centre of the catenary suspension bracket for future adjustment?(As per RDSO latter no.TI/OHE/GA/3013 dated14.05.3013)
(a) 400 mm to 300 mm (b) 400 mm to 100 mm (c) 150 mm to 200 mm (d) 50 mm to 100 mm.
87. In cantilever assembly, standard size of steady arm (i.e. inner dia /outer dia)
(a) 25 mm /30 mm (b) 26.2 mm /31.7 mm (c) 28.4 /33.7mm (d) 30 mm /38 mm.
88. Cantilever dimension “A” shows the distance between
(a) Axis of bracket tube mast fitting & top of bracket tube
(b) Center of hook of catenary suspension bracket & top of stay arm insulator
(c) Stay arm fitting to top of bracket tube
(d) Stay arm fitting to centre line of the track

89. In cantilever assembly large size of bracket tube (i.e. inner dia /outer dia)
(a) 30 /38 mm. (b) 40 /49 mm (c) 28.4 /33.7 mm (d) 25 /30 mm.
90. Minimum working clearance for 25 kV AC is
(a) 500 mm (b) 1.0 m (c) 2.0 m (d) 3.0 m
91. Minimum electrical clearance, in which an earthed body is kept for some time near a charged body or vice-versa, this clearance is called
(a) Long duration (b) Short duration (c) Both long & short duration (d) Cannot say.
92. Excessive voltage due to surge is bypassed by lightning arrester into
(a) Atmosphere in the form of electromagnetic energy
(b) Atmosphere in the form of electro static energy
(c) Earth
(d) All of the above.
93. In AC traction, track bonding is done upto the distance either side from the FP
(a) 5 km (b) 3 km (c) 2 km (d) 1 km.
94. Minimum earth resistance when not specified should not be more than
(a) 9 ohm (b) 10 ohm (c) 5 ohm (d) 2.5 ohm.
95. 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
96. The resistance area of two earth electrodes should
(a) Be as closed as possible (b) Same resistance area
(c) Not to be overlap each other (d) All of the above.
97. Size of BFB Mast
(a) 152 mm x 152 mm (b) 200 x 200 mm (c) 400 mm x 400 mm (d) All of above.
98. Size of “R” type portal
(a) 450 x 450 mm (b) 550 x 550 mm. (c) 600 x 600 mm. (d) 650 x 650 mm.
99. Fabricated mast is suitable to resist
(a) Both bending movement & twisting movement.
(b) Bending movement only
(c) Twisting movement only
(d) Neither bending movement nor twisting movement.
100. “N” type portal is used to cover maximum
(a) 4 tracks/8 OHE’s (b) 4 tracks /4 OHE’s
(c) 4 tracks/6 OHE’s (d) 6 tracks /8 OHE’s

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ANSWER SHEET

01	A	21	B	41	B	61	C	81	D
02	C	22	A	42	D	62	A	82	A
03	C	23	B	43	B	63	B	83	C
04	C	24	A	44	B	64	D	84	A
05	C	25	D	45	A	65	D	85	B
06	A	26	B	46	C	66	C	86	C
07	C	27	A	47	C	67	B	87	C
08	C	28	B	48	D	68	A	88	A
09	D	29	B	49	C	69	A	89	B
10	A	30	A	50	D	70	C	90	C
11	D	31	D	51	C	71	B	91	A
12	A	32	A	52	D	72	C	92	C
13	C	33	C	53	C	73	B	93	D
14	C	34	B	54	A	74	D	94	B
15	A	35	C	55	D	75	B	95	B
16	A	36	B	56	D	76	C	96	C
17	C	37	C	57	A	77	B	97	D
18	B	38	B	58	A	78	A	98	C
19	B	39	D	59	B	79	B	99	A
20	D	40	A	60	D	80	A	100	A