

Question Bank

Assistant Tower erection Power Transmission

Multiple Choice Questions

1. Fire can be extinguished by eliminating
 - a. Flashing point
 - b. Ignition temperature
 - c. Explosive range
 - d. All of the above
 - e. Engulfing away from oxygen
2. Employee shall report any dangerous conditions of the undertaking's properties, equipment or personnel to their
 - a. Co-worker
 - b. Superior officer
 - c. Both (a) and (b)
 - d. None
3. The greatest composition of Dry chemical powder in Fire extinguisher are composed of
 - a. Sodium Bicarbonate and other additives
 - b. Methane
 - c. Both (a) and (b)
 - d. None
4. Mouth to mouth procedure of artificial respiration should be repeated about
 - a. 10 to 12 times in a min
 - b. 30 to 32 times in a min
 - c. 50 to 52 times in a min
 - d. 1 to 2 times in a min
5. Which type of tower is NOT called as Tension tower/section tower?
 - a. Type A
 - b. Type B
 - c. Type C
 - d. Type D
6. Tower footing resistance in EHV should not exceed _____ ohms.
 - a. 0.5
 - b. 1
 - c. 5
 - d. 10
7. Which one of these is an environmental factor which causes accident at site?
 - a. Lack of vision
 - b. Insufficient light
 - c. Improper temporary structure arrangements

8. All the accident cases to be informed by Section In charge/Engineer to Project safety head within _____ of accident.
 - a. 15 min
 - b. 30 min
 - c. 45 min
 - d. 60 min
9. For extinguishing flammable gas and live Electrical equipment, the class of fire extinguisher used is _____
 - a. Class A
 - b. Class B
 - c. Class C
 - d. Class D
10. Which type of tower is suitable for a deviation of 0 degree to 2 degree?
 - a. A type
 - b. B type
 - c. C type
 - d. D type
11. Transmission Company must carry out periodical review of
 - a. Line Losses
 - b. Overloaded Transformer
 - c. Revenue collection
 - d. All of the above
12. A 3-phase 4-wire system is commonly used for _____
 - a. Primary Transmission
 - b. Secondary Transmission
 - c. Primary Distribution
 - d. Secondary Distribution
13. A 3-phase 3 wire system is commonly used for _____
 - a. Primary Transmission
 - b. Secondary Transmission
 - c. Primary Distribution
 - d. Secondary Distribution
14. What is the minimum distance to construct a house etc., from the EHV Line?
 - a. 5 metres from EHV
 - b. 6 metres from EHV
 - c. 7 metres from EHV
 - d. 8 metres from EHV
15. A DD type 765 kV single circuit Quad tower weight is app. _____
 - a. 37 MT
 - b. 23 MT
 - c. 21 MT
 - d. 17 MT
16. A DA type 400kV Double circuit Quad tower weight is _____
 - a. 22 MT
 - b. 43 MT
 - c. 32 MT

- d. 19 MT
- 17. Basic Wind speed in wind zone IV is _____
 - a. 45 m/sec
 - b. 47 m/sec
 - c. 49 m/sec
 - d. 53 m/sec
- 18. 55m/sec wind speed can be observed in wind zone _____
 - a. III
 - b. IV
 - c. V
 - d. VI
- 19. Which tower has broader footprint than any other tower?
 - a. Transposition Tower
 - b. Tension Tower
 - c. Highway Crossing Tower
 - d. Guyed Tower
- 20. Guys shall be at a slope of _____
 - a. 0 to 30 degrees
 - b. 15 to 45 degrees
 - c. 30 to 60 degrees
 - d. 45 to 75 degrees
- 21. Very purpose of transposition tower is
 - a reduce voltage level
 - b balance voltage level
 - c reduce mutual coupling
 - d a&c above
 - e b & c above
- 22. Primary Transmission of Power is
 - a. 66/132 kV
 - b. 11/22 kV
 - c. 132/220/400/765 kV
 - d. 11/0.415 V
- 23. What does severity of shock depends upon?
 - a. Path of current through the body
 - b. Amount of current flowing through the body
 - c. Duration of the shocking current through the body
 - d. b & c above
 - e. All of the above
- 24. Which zone is the hottest part of a tower structure/ flame?
 - a. Outer Zone
 - b. Innermost Zone
 - c. Middle Zone
 - d. All of the above
 - e. None of yhe above
- 25. What is the responsibility of a transmission tower?
 - a. support the heavy conductor

- b. provide electrical isolations among the equipment
 - c. provide sufficient ground clearance
 - d. all of the above
26. CEA Gazette Notification includes
- a. Handling of electric supply lines and apparatus
 - b. Provision applicable to protective equipment
 - c. Clearances between ground and overhead line
 - d. All of the above
27. The safety gloves can be made up of
- a. Neoprene rubber
 - b. Plastic
 - c. lather
 - d. All of the above
28. Why do people behave unsafe?
- a. Overconfidence
 - b. Personal Problem
 - c. Lack of Knowledge
 - d. All of the above
 - e. A ^ c above
29. Assistant Technician – Erection power Transmission reports to
- a. Engineer
 - b. Assistant Manager
 - c. Site Engineer
 - d. Supervisor
30. Bulk power Transmission lines connects _____
- a. Generating station to a switching station / step down transformer station.
 - b. Step down transformer station to service transformer banks
 - c. Distribution transformer to consumer premises
 - d. Service points to consumer premises
31. Configuration of transmission tower depends on
- a. The length of the insulator assembly
 - b. The minimum clearances to be maintained between conductors and between conductor and tower
 - c. The location of ground wire or wires with respect to the outermost conductor
 - d. All of the above
32. Tower erection work shall be taken up only after concreting is cured and set for minimum_____
- a. 7 days
 - b. 14 days
 - c. 21 days
 - d. 30 days
33. Which one of these is a transient load?
- a. Wind loads on structure and lines
 - b. Stringing loads caused by ice shedding
 - c. Earthquakes
 - d. Horizontal loads because of all line angle

34. A _____ is a tool consisting of a metal bar with a single curved end and flattened points.
- Pulley
 - Crowbar
 - Spanner
 - Derrick Pole
35. Which one of these equipment is NOT used for lifting and pulling equipment?
- Tirfor
 - Engine Wrench
 - Pulley
 - Gin Pole
36. Authorised person to issue permit in a substation is
- Shift engineer or operation in-charge
 - All employees working in substation
 - Both (a) and (b)
 - None of the above
37. Threaded position of bolt projected outside of nut shall not be less than _____.
- 2 mm
 - 3 mm
 - 4 mm
 - 5 mm
38. Which one of the systems gets eliminated in the DC transmission system?
- Inductive Effect
 - Capacitive Effect
 - Phase displacement
 - All of these
39. In guyed type tower, guys shall be at a slope of
- 15 to 45 degrees
 - 30 to 60 degrees
 - 45 to 75 degrees
 - 60 to 90 degrees
40. Transmission tower is generally made up of ?
- Mild steel members
 - High tensile steel members
 - A & b above
 - Tubular pipes
 - all of the above
41. When Corona occurs, which colour of light is produced around the conductor?
- Red
 - Yellow
 - Blue
 - Violet
42. Which type of tower is NOT called as Tension tower/section tower?
- Type A
 - Type B
 - Type C
 - Type D

43. A power transmission company in India can work under _____
- Government Sector
 - Private Sector
 - Either Govt or Private
 - Neither Govt nor Private
44. Reviewing application for new connection, additional load/demand, etc. is done by
- CERC
 - SERC
 - Both (a) and (b)
 - None of the above
 - State electricity utility/Discom
45. Theft of Electricity fall under section _____
- Section 50
 - Section 138
 - Section 139
 - Section 140
46. A _____ is a company that has the license to distribute power to consumers at the tariff fixed by the Electricity Regulatory Commission (ERC).
- DISCOM
 - SERC
 - CERC
 - All of the above
47. For galvanized towers in coastal or highly polluted areas, the joints shall be painted with _____ paint on all contact surfaces during the course of erection.
- Copper
 - Zinc
 - Silver
 - Aluminium
48. The number of _____ used on the line depends on the isokeraunic level of the area.
- Ground wires
 - Tower Members
 - Gin pole for erecting of tower
 - None of these
49. It is practically impossible to construct an HVDC transmission system with more than _____ substations.
- 3
 - 4
 - 5
 - 6
 - 2
50. The potential stress on the insulator of DC transmission system is about _____ of same voltage in AC transmission system.
- 50 %
 - 60 %
 - 70 %

- d. 80 %
 - e. same
51. Above 220 kV, _____ conductors are normally used to reduce corona discharge.
- a. Single
 - b. Twin
 - c. Bundled
 - d. Transposed
52. Welding is done to reduce risk of loosening of nuts due to
- a. Vibrations developed in tower
 - b. High winds
 - c. Electro mechanical stress
 - d. All of the above
53. Pipe type towers are supplied in a single piece or multiples depending upon
- a. Length
 - b. Weight
 - c. Transportation limitations
 - d. All of the above
54. Tower type C under _____ degree deviation limits and with suitable modification shall be used for transposition for line maintaining all the required clearances and shielding.
- a. 0
 - b. 15
 - c. 30
 - d. 60
55. The design of _____ tower provides the greatest opportunity for the structural engineer to minimize the total weight of steel required.
- a. Angle tower
 - b. Transposition Tower
 - c. Tangent Tower
 - d. None of these
56. In 400kv AC transmission system bundled conductors are kept in horizontal configuration with a minimum clearance of _____ meters phase to phase.
- a. 9
 - b. 10
 - c. 11
 - d. 12
57. _____ is a short bar used as a lever to provide torque for tightening a box spanner or key.
- a. Tommy Bar
 - b. Sling
 - c. Spanner
 - d. Torque Wrench
58. The tower members are stored in the tower erection sites by which of these ways?
- a. piling them on top of burnt brick/concrete blocks
 - b. piling them on top of scrap wood planks
 - c. piling them on tarpaulin

- d. All of the above
59. Tower shall be stored in tower site above ground level by _____ cms.
- a. 20
 - b. 30
 - c. 40
 - d. 50
60. Which one of the tower erection process does not use heavy machineries?
- a. Build up method
 - b. Section method
 - c. Ground Assembly method
 - d. Helicrane method
61. The zinc rich paint contains minimum _____ percent of zinc.
- a. 75
 - b. 80
 - c. 90
 - d. 95
62. Which of the below is a not a conventional power plant?
- a. Thermal Power Plant
 - b. Hydel Power Plant
 - c. Nuclear Power Plant
 - d. Solar power Plant
63. Which one of these is NOT considered as fossil fuel?
- a. Coal
 - b. Natural Gas
 - c. Bio Gas
 - d. Petroleum
64. Basic fundamental of safety are
- a. Cooperation of all co-workers is essential to avoid accident
 - b. Accident is the result of unsafe working condition and unsafe work
 - c. Use of incomplete or little knowledge is dangerous and may invite accident
 - d. All of the above
65. The portion above the top cross arm is called _____ of transmission tower.
- a. Leg
 - b. Body
 - c. Cage
 - d. Peak
66. What is ERP?
- a. Emergency Response Plan
 - b. Emergency Required Plan
 - c. Emergency Response Priority
 - d. Emergency Required Priority
67. Which one of these is a portable ladder?
- a. Plain rung ladder
 - b. Roof ladder
 - c. Step ladder

- d. All of the above
68. What is fire buckets filled with?
- a. Clean Dry Sand
 - b. Wet Sand
 - c. Carbon Dioxide
 - d. Water
69. Types of power transmission system are
- a. HVDC
 - b. HVAC
 - c. EHVAC
 - d. All above
 - e. a&cabove
70. All the accident cases to be informed by Section In charge/Engineer to Project safety head within _____ of accident.
- a. 15 min
 - b. 30 min
 - c. 45 min
 - d. 60 min
71. Time duration of ventricular fibrillation is _____
- a. 15 - 20 mA
 - b. 0 - 5 mA
 - c. 20 - 30 mA
 - d. 5 - 10 mA
72. Inverters convert _____
- a. AC to DC
 - b. AC to AC
 - c. DC to DC
 - d. DC to AC
73. How many conductors can be used for DC transmission system?
- a. One
 - b. Two
 - c. Three
 - d. Both (a) and (b)
74. Impedance is a combination of
- a. Resistance and reluctance
 - b. Reactance and Conductance
 - c. Reactance and Resistance
 - d. Resistance and Conductance
75. The portion below the top cross arm is called _____ of transmission tower.
- a. Leg
 - b. Body
 - c. Cage
 - d. Peak
76. Tolerance limit for vertical shall be one in _____ mm_____
- a. 300
 - b. 320

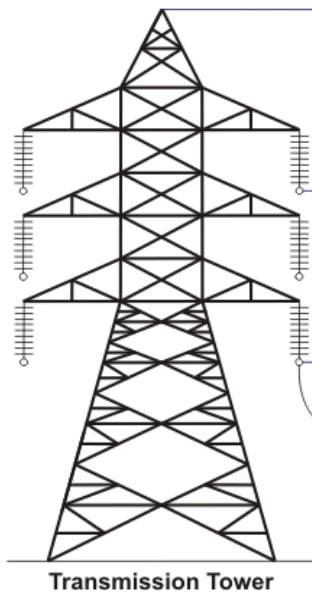
- c. 360
 - d. 400
77. In which of the following methods, the complete tower is build or assembled on the ground and then erected with the help of cranes?
- a. Build up method
 - b. Section Method
 - c. Ground Assembly Method
 - d. Helicrane Method
78. In case of Railway crossing towers, _____ no. of earthing per tower shall be provided.
- a. One
 - b. Two
 - c. Three
 - d. More than three
79. For reactive power compensation _____ cannot be is used.
- a. Inductor
 - b. Capacitor
 - c. Resistor
 - d. Combination of capacitor and inductor
80. When Indian Electricity Act was first amended?
- a. 1910
 - b. 1920
 - c. 1948
 - d. 1950
 - e. 2003
81. Which body ensures the development of an efficient, coordinated and economical system of inter-state transmission lines and undertakes inter-state transmission?
- a. CTU
 - b. PPP
 - c. STU
 - d. None of these
82. _____ Wire ropes of suitable size attached to deadment are utilized for guying.
- a. Steel
 - b. Polypropylene rope
 - c. Fibre
 - d. Aluminium
83. Angle towers, also called as tension towers, are used where the lines make a diversion angle greater than _____ degrees.
- a. 2
 - b. 5
 - c. 10
 - d. 15
84. Steel Plates are used at junctions where minimum _____ members are jointed.
- a. 2
 - b. 3
 - c. 4
 - d. 5
85. Which one of these cannot be a tower storing area?

- a. Close proximity to rail heads, National Highways.
 - b. Proximity to urbanisation and towns.
 - c. Communication facilities
 - d. Marshy land
86. Which one of the points should be ensured in the store?
- a. Complete fencing of the store yard
 - b. Proper lighting
 - c. Fire protection equipment.
 - d. All of the above
87. Towers are required to be painted on body or top by _____ colour for the purpose of awareness.
- a. Red
 - b. Blue
 - c. Green
 - d. Violet
88. Finely broken coke/charcoal having maximum granular size 25 mm and salt shall be filled in the excavated bore hole in ratio _____.
- a. 5:1
 - b. 10:1
 - c. 15:1
 - d. 20:1
89. Tower shall be checked for verticality with the help of theodolite in _____ and _____ direction.
- a. Transverse
 - b. Longitudinal
 - c. Both a and b
 - d. None of these
90. The step bolts usually adopted are of _____ diameter and _____ length.
- a. 16 mm and 175 mm
 - b. 18 mm and 200 mm
 - c. 16 mm and 200 mm
 - d. 18 mm and 175 mm
91. The number in number plate is enamelled in _____ on white enamelled background.
- a. Black
 - b. Red
 - c. Blue
 - d. Green
92. The bird guard is made of _____ gauge MS sheet.
- a. 15
 - b. 16
 - c. 18
 - d. 20
93. Portable ladders are normally constructed on which of these materials?
- a. Wood
 - b. Aluminium

- c. Fibreglass
 - d. All of the above
94. A ladder is strongest when it is in _____ position relative to the surface.
- a. 45 degrees
 - b. 60 degrees
 - c. 75 degrees
 - d. 90 degrees
95. Ear protection (ear muffs, earplugs etc.) must be used in areas where the noise level is above _____
- a. 65 dB
 - b. 75 dB
 - c. 85 dB
 - d. 90 dB
96. Who must be present in the site for heavy weight tower construction?
- a. Gang Leader
 - b. Authorised supervisor
 - c. Any one of a and b
 - d. Both a and b
97. Ground clearance of 400 kV AC voltage is _____
- a. 6.1 m
 - b. 11.8 m
 - c. 8.5 m
 - d. 9.0 m
98. Time duration of ventricular fibrillation is _____
- a. 15 - 20 mA
 - b. 0 - 5 mA
 - c. 20 - 30 mA
 - d. 5 - 10 mA
99. _____ are the most effective means of protecting electrical lines against lightning and switching.
- a. Circuit Breaker
 - b. Lightning Arrestor
 - c. Isolator
 - d. HRC Fuse
100. Severity of shocks depends on
- a. Path of current through the body
 - b. Amount of current through the body
 - c. Duration of the shocking current through the body
 - d. b&c of the above
101. During the rain the porcelain insulators may develop _____
- a. Hairline cracks
 - b. Partial discharge
 - c. Either a or b
 - d. None

VIVA- 15 Ques

1. How are transmission lines installed in hilly areas?
2. What are the parts of Transmission Line?
3. What is the normal height of the tower in 400kv D/C?
4. What is the minimum distance to construct a house etc. from the EHV Line?
5. What are standard right-of-way widths in 220kv line?
6. Explain factors on which configuration of tower depends?
7. State various types of crossing for transmission tower
8. What is isokeraunic level?
9. Classify Tower based on angle of deviation?
10. Identify parts/zones of Transmission tower



11. Explain importance for consideration of various wind zones with respect to power transmission tower?
12. List different activities in construction of transmission line?
13. List tools required for tower erection?
14. List equipment's required for tower erection?
15. Identify below mentioned tools.



16. Explain process of tower erection by Build-up method?
17. Explain process of tower erection by section method?
18. List transmission tower accessories installed on tower?
19. Describe tightening and punching?
20. What are the differences between pipe type earthing and counterpoise earthing?
21. Why we use safety helmets while working on ground
22. Why red colour painting is done on towers top

On job training (tower erection)

1. Assemble the arm of a transmission tower.
2. Assemble the leg of transmission tower and connect it to the stub of the foundation.
3. Demonstrate the connection of conductor in the insulator connected on tower.
4. Verify the size of Danger Board and connect it to the transmission tower.
5. Connect anti climbing device in the transmission tower.
6. Erect a single section of transmission tower by section method.
7. Paint the tower in order to save from corrosion in the tower required for awareness with the paint as per the location required on the tower.
8. Measure the angle and dimension of stub and make a report which shows complete regularity/irregularity as per the result observed
9. Construct a gin pole
10. Perform truncation of tower.
11. Demonstrate use of safety gadgets while working on transmission tower.
12. Demonstrate safe keeping of tools and tackles.
13. Demonstrate fixation of hardware such as nuts, bolts and weld it in proper way.