Senior Lineman (Distribution)
Question Bank

Theory Questions:

1. In India, what is the rated frequency of generated electric power?
    a) 60 Hz
    b) 50 Hz
    c) 55 Hz
    d) 53 Hz
2. Ohm's Law states that.
    a) I=VR
    b) V=IR
    c) R=VI
    d) All of the above
3. The SI unit of Current is
    a) Ampere
    b) Volts
    c) Ohm
    d) Farad
4. The electric power is generated at a thermal power plant with a typical voltage of
    a) 22 kV
    b) 33 kV
    c) 44 kV
    d) 66 kV
5. Voltage level to the end consumer is
    a) 260/460 V
    b) 110/240 V
    c) 310/350 V
    d) 240/415 V
6. Primary distribution network connects the transmission system with secondary distribution network at a voltage level of
    a) 66kV
    b) 415V
    c) 240V
    d) 33kV or 11kV
7. Secondary distribution system supplies power to consumer at voltages of
    a) 220kV
    b) 110kV
    c) 415V or 240V
    d) 66kV

8. The Electricity Act 2003 covers the issues involving
    a) Trading of power
    b) Generation
    c) Distribution
    d) All of the above
9. An electric circuit is formed when a conductive path is created to allow
    a) Free electrons to move continuously
    b) Free protons to move continuously
    c) Both (a) and (b)
    d) None of the above
10. The difference between reported energy injected into a network and the reported energy extracted from the network is known as
    a) Reconciliation losses
    b) Technical losses
    c) Commercial losses
    d) None of the above
11. Unduly long feeders lead to _____ at consumers end.
    a) High voltage and high technical losses
    b) Low voltage and high technical losses
    c) Low voltage and low technical losses
    d) High voltage and low technical losses
12. Types of distribution losses are
    a) Technical losses
    b) Commercial losses
    c) Both (a) and (b)
    d) None of the above
13. In rural areas, which type of feeder system is used
    a) Radial system
    b) Interconnected system
    c) Ring main system
    d) None of the above
14. Job responsibility of senior lineman includes
    a) Installation of energy meter
    b) Surveying of HT lines and LT lines and report to his superiors any variation from the original estimate
    c) Designing of distribution network
    d) Both (a) and (c)
15. Every distribution system must carry out periodical review of
    a) Line losses
    b) Revenue collections and system defects
    c) Employee training
    d) All of the above

16. The senior lineman in an organization reports to
    a) Assistant Lineman
    b) Junior Engineer
    c) Executive Engineer
    d) Technical Helper
17. The tariff of power generating companies owned or controlled by the central government is regulated by
    a) CERC
    b) SERC
    c) Both (a)and (b)
    d) None of the above
18. Accident at workplace can be caused by working on unsafe or dangerous equipment such as
    a) Cleaning/greasing or adjusting any of running machine
    b) Working on machine under off condition
    c) Using insulated tools
    d) None of the above
19. 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
20. Hazards occur due to
    a) Inadequate wiring
    b) Exposed electrical ports
    c) Wires with bad insulation
    d) All of the above
21. Tool used on electrical apparatus or equipment should be properly
    a) Insulated
    b) Not insulated
    c) Both (a) and (b)
    d) None of the above
22. Authorized person to issue permit in a substation is
    a) Shift engineer or operation in-charge
    b) All employees working in substation
    c) Both (a) and (b)
    d) None of the above
23. Safety requirement applicable at work include.
    a) Wear personal protective equipment
    b) Use tools in proper manner
    c) Both (a) and (b)
    d) None
24. CO_2 fire extinguisher are designed for
    a) Class B only

b) Class B and C
c) Class C only
d) None of the above

25. Class A type of fire extinguisher are used to extinguish fire on
    a) Solid that is not metal
    b) Flammable liquid
    c) Flammable gas
    d) Metals
26. First-aid box contains
    a) Clean and sterilized cotton pads
    b) Three angle bandage
    c) Bottle of Dettol or Savlon liquid
    d) All of the above
27. 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
28. The undertakings shall provide suitable hoisting apparatus for hauling and carriage of loads above
    a) 500kg
    b) 50 kg
    c) 5 kg
    d) 10 kg
29. The workmen shall be trained in safe methods of handling. They shall avoid
    a) Lifting too quickly and with a jerk
    b) Lifting while in an awkward position or with a poor footing
    c) Handling loads which are unwieldy or too heavy or loads which obstruct vision
    d) All the above
30. Under no circumstances should the released _____ be disposed off by dumping or pouring in sewers or conductor pipes leading into sewers.
    a) Water
    b) Carbon dioxide gas
    c) Transformer oil
    d) None of the above
31. The representative of employee is nominated under regulation
    a) Regulation 4(5)
    b) Regulation 5(4)
    c) Regulation 3(4)
    d) Regulation 4(3)
32. Things needed to succeed in a team player
    a) Recognize your role
    b) Take ownership of the team goal

c) Earn trust
d) All the above

33. Characteristics of disciplined behavior
    a) Punctual
    b) Maintain work standard
    c) Both (a) and (b)
    d) None of the above
34. Leadership skills includes
    a) Problem-solving
    b) Decision-making
    c) Personal stress management
    d) All of the above
35. Conflict can be resolved by
    a) Being anguish
    b) Being calm and listening views
    c) Negative body language
    d) All of the above
36. Methods to develop positive attitude include
    a) Make failure a teacher
    b) Keep Complaining
    c) Not to forgive others
    d) None of the above
37. What are the ways to build self- confidence?
    a) Identify the problem
    b) Don’t fear mistake
    c) Look on the bright side
    d) All the above
38. What are the tips to deal with change?
    a) Stay prepared
    b) Understand and accept change
    c) View change as an opportunity
    d) All the above
39. Review of application for new connection, additional load/demand, etc. falls under the jurisdiction of
    a) CERC
    b) SERC
    c) Both (a) and (b)
    d) None of the above
40. The energy difference between the positive and negative terminal of a battery is known as
    a) Current
    b) Resistance
    c) Voltage

d) Inductance

41. The unit of measurement for inductance is
    a) Henry
    b) Ohm
    c) Farad
    d) None of the above
42. Power is related to voltage and current by the formula
    a) Power = Voltage / Current
    b) Power = Voltage x Current
    c) Power = √(Voltage / Current)
    d) Power = √(Voltage x Current)
43. The apparent power is a combination of
    a) True power and reactive power
    b) Real power and reactive power
    c) Phase angle and reactive power
    d) Both (a) and (b)
44. The _____ is commonly used as a billing unit for energy delivered to consumers by electric utilities.
    a) Watt-hour
    b) Joules
    c) Kilowatt-hour
    d) All of the above
45. _____system is created to carry out load transfer and maintain continuity of electric supply
    a) Ring main system
    b) Radial system
    c) Distribution system
    d) None of the above
46. The total of technical and commercial losses is termed as
    a) T&D loss
    b) AT&C loss
    c) Unaccounted loss
    d) All of the above
47. In India, which types of poles are commonly used for distribution?
    a) Wooden poles
    b) RCC poles
    c) Steel poles
    d) Both (b) and (c)
48. To prevent rotting the wooden poles which oil is impregnated to it
    a) Kerosene oil
    b) Mineral oil
    c) Creosote oil

d) All of the above

49. Steel poles are painted so as to prevent it from
    a) Corrosion
    b) Borer
    c) Termites
    d) All of the above
50. Which among these are not a type of steel poles
    a) Rail poles
    b) RCC poles
    c) Tubular poles
    d) Rolled steel joints
51. What is the usual span of the RCC poles?
    a) 250 - 400 m
    b) 80 – 150 m
    c) 50 – 105 m
    d) 10 – 75 m
52. What is the main purpose of guy wire?
    a) Support the pole
    b) Protects against the surges
    c) Provide emergency earth route
    d) All of the above
53. Which material is used for the manufacture of ground wire?
    a) Aluminium
    b) Galvanized steel
    c) Cast iron
    d) Stainless steel
54. What is the function of steel wire in ACSR conductors?
    a) Compensate for skin effect
    b) Takes care of surges
    c) Reduces capacitance and inductance
    d) Provides additional mechanical strength
55. Which type of insulator is used in guy wires?
    a) Stay insulators
    b) Shackle insulators
    c) Pin type
    d) Strain type
56. The GO Switches are normally installed at the pole mounted distribution substation to isolate
    a) Lightning arrestor from transformer
    b) Transformer from HT lines
    c) HT lines and earthing wires
    d) All of the above
57. Clashing of LT conductors in the mid-span very often takes place due to

a) Sag
b) Wind
c) Longer spans
d) All of the above

58. What is the use of current transformers?
    a) Stepping up AC currents
    b) Measuring and protection
    c) Stepping down AC current
    d) Both (b) and (c)
59. Which of the following materials is not used for distribution of electrical power?
    a) Copper
    b) Tungsten
    c) Steel
    d) Aluminium
60. Feeder is designed mainly from the point of view of
    a) Its current carrying capacity
    b) Voltage drop in it
    c) Operating voltage
    d) Operating frequency
61. The insulators fail due to
    a) Flashover
    b) Galloping
    c) Unbalanced loading
    d) All of the above
62. The effect of wind pressure is more predominant on
    a) Distribution lines
    b) Neutral wire
    c) Insulator
    d) Supporting tower
63. The bundling of conductor is done primarily to
    a) Reduce reactance
    b) Increase reactance
    c) Increase radio interference
    d) Reduce radio interference
64. Efficiency of a transformer will be maximum when
    a) Copper loss and iron loss are equal
    b) Copper loss is greater than iron loss
    c) Iron loss is greater than copper loss
    d) All of the above
65. The basic function of a transformer is to change
    a) The power level
    b) The power factor

c) The level of the voltage
d) The frequency

66. A circuit breaker is
    a) Power factor correcting device
    b) A device to neutralize the effect of transients
    c) A current interrupting device
    d) A waveform correcting device
67. The substation equipment that provides isolation from live parts for the purpose of maintenance is
    a) Circuit breaker
    b) Isolator
    c) Lightning arrestor
    d) All of the above
68. The desired accuracy class of CT and PT varies from _____ for various metering purpose
    a) 5 to 10
    b) 7 to 8
    c) 4 to 6
    d) 0.1 to 3
69. To protect the insulation and conductors of the system from damaging effect of surges the equipment used is
    a) GO Switches
    b) Lightning arrestor
    c) Circuit breaker
    d) transformer
70. The lightning arrestors in distribution line is always connected between
    a) Transformer and earth
    b) GO switch and earth
    c) GO switch and transformer
    d) Line and earth
71. A transformer works on the principle of
    a) Lenz's law
    b) Faraday's law of electromagnetic induction
    c) Gauss law
    d) Biot savart law
72. The distribution transformers have which types of connection?
    a) Delta-Star Connection
    b) Delta-Delta Connection
    c) Star-Star Connection
    d) Star-Delta Connection
73. An equipment in substation that provides isolation from live parts for the purpose of maintenance is

a) Circuit Breaker
b) Isolators
c) Earth switch
d) All of the above

74. Before operating the tap changer
    a) DO fuse should be dropped and transformer should be made dead
    b) DO fuse should not be dropped and transformer should not be dead
    c) Either of the cases
    d) Tap changer cannot be operated manually
75. Due to absorption of moisture, the blue color of silica gel crystal turns to
    a) Black
    b) Red
    c) Pink
    d) Yellow
76. Voltage regulation is done in transformers by means of change of number of turns in HV winding with the help of
    a) Loads
    b) Tap changer
    c) Radiators
    d) All of the above
77. The equipment used to join underground cable on LT side of the transformer through jumpering of LT bushing
    a) Tap changer
    b) Radiator
    c) Lifting lugs
    d) Cable box
78. In pole mounted distribution substation earthling arrangement, one of the earth electrode has direct connection from LA on HT side while the remaining two electrode should be connected to

I. One separate connection from the neutral
II. One separate connection from the transformer body and the handle of 11kV AB/GO switch
III. One separate connection from the earthing terminals of the poles

    a) I, II, III
    b) I, II
    c) I, III
    d) None of the above
79. During visual inspection observations of transformer oil, oil contamination is represented by which color?
    a) Yellow
    b) Black/Brownish
    c) Dull
    d) Transparent/sparkling
80. Before work is commenced on a transformer by the lineman, the transformer

a) Should be isolated from both the sides
b) Should be grounded well
c) Both (a) and (b)
d) Need not be isolated

81. Core and Winding of the transformer should be inspected once in every
    a) 6 months
    b) 5 years
    c) yearly
    d) 10 years
82. In maintenance schedule of distribution transformer, testing of oil for BDV is done
    a) Monthly
    b) Quarterly
    c) Half yearly
    d) Once in 5 years
83. LT line maintenance includes
    a) Replacement of damaged service wires
    b) Alignment of poles
    c) Removal of bird nest
    d) All of the above
84. Which of the following protects a cable against mechanical injury?
    a) Bedding
    b) Sheath
    c) Armouring
    d) None of the above
85. The thickness of the layer of insulation on the conductor, in cables, depends upon
    a) Reactive power
    b) Power factor
    c) Voltage
    d) Current carrying capacity
86. Why are sheaths used in cables?
    a) Prevent ingress of moisture
    b) Provide proper insulation
    c) Provide mechanical strength
    d) None of the above
87. Why are conduit pipes employed?
    a) To protect unsheathed cables
    b) To protect armoured cables
    c) To protect PVC sheathed cables
    d) All of the above
88. The material generally used for armour of high voltage cables is
    a) Aluminium
    b) Steel

c) Brass
d) Copper

89. Jumper and cable joints are checked with the help of
    a) Thermovision camera
    b) Megger
    c) Multi-meter
    d) None of the above
90. Sub-station helps in
    a) Stepping up/stepping down the voltage
    b) Meeting the increased load demand of the area
    c) Improving the power supply condition – voltage, current, etc.
    d) All of the above
91. The accessories of transformer that helps in expansion and contraction of oil
    a) Breather
    b) Tap changer
    c) Conservator tank
    d) Buchholz relay
92. The cable joint that connects cable to switchgear, transformer or to an overhead line is
    a) T- joint
    b) Terminal joint
    c) Straight through joint
    d) All of the above
93. What are the causes of insulator damage?
    a) Due to difference in temperature
    b) Improper calibration
    c) Broken service line
    d) None of the above
94. Load shedding is carried out when
    a) Power available is more than the power demand at a given point of time
    b) Power available and power demand are equal
    c) Power demand is more than the power available at a given point of time
    d) None of the above
95. A senior lineman can fix any fault or loose connection with the help of
    a) Line diagrams
    b) Maps
    c) Circuitry
    d) All of the above
96. The instruments commonly used to identify the resistance and leakage current in the cable that help in detecting the fault
    a) Megger
    b) High pot tester
    c) Multi-meter

d) Both (a) and (b)

97. When a live conductor of public electric supply breaks down and touches the earth which of the following will happen?
    a) Current will flow to earth
    b) Supply voltage will drop
    c) Supply voltage will increase
    d) None of the above
98. To detect exact location of fault for fault rectification_____ is injected using fault locating equipment
    a) Low voltage DC pulse
    b) Low voltage AC pulse
    c) High voltage DC pulse
    d) High voltage AC pulse
99. The insulating material for cables should
    a) Be acid proof
    b) Be non-inflammable
    c) Be non-hygroscopic
    d) All of the above
100. An important advantage of XLPE as insulation for medium and high voltage cables is their
    a) High dielectric loss
    b) Low dielectric loss
    c) Both (a) and (b)
    d) None of the above

Viva Questions:

1. Explain the job responsibilities of senior lineman for operation and maintenance work.
2. Explain the job responsibilities of senior lineman for execution of substation and line construction works.
3. Give details of faults occurred in distribution substation.
4. Give details of faults occurred in overhead distribution lines.
5. What is the difference in Air circuit breaker and isolator?
6. List the observations to be made while overhead line inspection for maintenance.
7. What is sag and how to correct it?
8. Why joints of conductor gets heat up and how we can overcome this problem?
9. What is load shedding and how it is done at local level?
10. Mention the components of overhead distribution line.
11. What are the various factors of insulator damage?
12. Mention the various components of distribution substation.

13. What are the various protections of distribution transformer, why these are required?
14. Name the components of distribution transformer and their functions.
15. Explain various types of underground cables used for power distribution.
16. What is AB cable and benefits of AB cable distribution network?
17. What is the escalation matrix for senior lineman?
18. What are the benefits of recording performance of subordinates?

On Job Training Questions:

1. Define the oil testing procedure and why it is conducted?
2. How to fix lightning arrestor, wherein network and why?
3. Explain safety precaution at worksite for construction of distribution substation.
4. How to ensure that a line is safe to work before starting the maintenance?
5. List the activities to be performed for substation maintenance.
6. How to measure earth resistance and what should be the acceptable value?
7. At how many places grounding (earthing) is to be provided in a distribution substation pole mounted three phase 400 KVA transformer capacity having fencing.
8. How to lay a underground cable and what precautions to be followed?
9. How to ensure that your team member understood the instruction properly?
10. Give the list of tools/machinery used for stringing of AB cable and precautions in using the same.
11. How to resolve conflict in the conflict in the team members>
12. How to ensure safety before giving clearance for line energization after maintenance?