

Junior Engineer

Question Bank

Easy Questions

1. The Indian trend in average AT and C losses are
 - a. Around 10 % or less
 - b. Around 25-30 %
 - c. Around 30-35 %
2. The energy accounting would help in
 - a. Improving supply voltage
 - b. Segregating technical and commercial losses
 - c. Improving supply frequency
 - d. Improving power factor
3. What should be the range of Power Factor in which an incentive shall be given on the amount of the monthly bill to the consumer?
 - a. 90-95%
 - b. 85-95%
 - c. 90-100%
 - d. 95-100%
4. SCADA is necessary for quality and regular power supply but it may turn out to be white elephant because
 - a. High initial cost and running cost
 - b. Would not be technically feasible due to poor maintenance of distribution system as a whole
 - c. Both of the above
5. Which of the following is a pre-requisite for effective GIS mapping?
 - a. SCADA
 - b. Asset Indexing
 - c. Consumer Indexing
 - d. a, b and c
 - e. b and c
6. Which type of insulators is used when there is a change in the direction of line or greater tension such as dead ends, river crossing and shape curves?
 - a. Strain Type Insulators
 - b. Shackle Type Insulators
 - c. Pin Type Insulators
 - d. Suspension Type Insulators

7. Which insulators are commonly used on 11 KV Lines?
 - a. Strain Type Insulators
 - b. Shackle Type Insulators
 - c. Pin Type Insulators
 - d. Suspension Type Insulators

8. The poles shall be planned directly in the ground with a planting depth of
 - a. 1.5 m
 - b. 2.0 m
 - c. 2.5 m
 - d. 3.0m

9. Which losses are reduced by Time of Day (ToD) meters in distribution network?
 - a. Dielectric Loss
 - b. Leakage Current Loss
 - c. I^2R Loss
 - d. Corona Loss

10. Which of the following functions doesn't come under Electricity Act 2003?
 - a. Rationalisation of electricity tariff
 - b. Transparent policies on subsidies
 - c. Non-discriminatory open access
 - d. Determining the tariff

11. Which of the following objective doesn't come under IPDS scheme?
 - a. Strengthening of sub-transmission and distribution networks
 - b. Metering of distribution transformers / feeders / consumers
 - c. IT enablement of distribution sector
 - d. Separation of agriculture and non-agriculture feeders

12. Which of the following objective doesn't come under DDGJY scheme?
 - a. Strengthening of sub-transmission and distribution networks
 - b. Separation of agriculture and non-agriculture feeders
 - c. Strengthening of sub-transmission and distribution networks
 - d. Metering of distribution transformers / feeders / consumers

13. Which of the following initiative isn't taken under UDAY scheme?
 - a. Improving operational efficiencies of Discoms
 - b. Reduction of cost of power
 - c. Reduction in interest cost of Discoms
 - d. Metering of distribution transformers / feeders / consumers

14. Which of the following may not be termed as feature of APFC?
- Lightening and Surge Protection
 - Remote Emergency Power Off
 - Dual Feed Input
 - Voltage maintenance at constant level
15. The dimension of Pipe Earthing depending on the type of soil is:-
- 45 mm in diameter and 3 m in length
 - 35 mm in diameter and 3.5 m in length
 - 40 mm in diameter and 2.75 m in length
 - 50 mm in diameter and 3 m in length
16. Which factor is a measure of the utilisation rate, or efficiency of electrical energy usage?
- Power Factor
 - Load Factor
 - Contract Load
 - Sanctioned Load
17. The auto reclosers are used for
- Detecting and interrupt momentarily faults
 - Managing active and apparent power
 - Maintaining the network voltage at constant level
 - Determining the rated load of the machine
18. The customer resistance to conversion to HVDS and use of ABC can be overcome by
- Customer education
 - Involvement of NGOs
 - Approaching community leaders first
 - All of the above
19. The following are necessary to reduce AT&C losses and to improve quality of supply
- Conversion to HVDS
 - Use of ABC
 - Improvement of distribution network system by GIS mapping
 - Refurbishment of distribution system
 - All of the above

20. From which body does all ERCs (CERC and SERCs) takes prior approval for every decision?
- State Electricity Board (SEB)
 - Ministry of Power (MoP)
 - Power Holding Company
 - None of the above
21. The governance of power distribution regulation means
- Central government framed rules
 - Rules for making rules
 - State government framed rules
 - Court directives about rules
22. Any customer can petition to the SERCs for redressal of the grievance.
- True
 - False
23. To call fire brigade, dial
- 100
 - 101
 - 102
 - 103
24. To call ambulance, dial
- 100
 - 101
 - 102
 - 103
25. The pilferage activity or theft by any consumer comes under which section of Electricity Act 2003?
- Section 4
 - Section 12
 - Section 135
 - Section 50
26. The suspension of distribution licensee comes under which section of Electricity Act 2003?
- Section 14
 - Section 12
 - Section 4
 - Section 43
27. Following are the objectives envisaged in SERC except:-
- Time frame set up for Power Supply restoration
 - Ensuring quality of supply
 - Determination of tariff within the State

d. Non-discriminatory Open Access

28. Following points needs to be considered while erecting transformer except:-

- a. Check for required tools and PPEs
- b. Information must be given to the Control Room
- c. Making LT cable connection to the transformer
- d. Use of cable trench during work excavation

29. Which program deals with the strengthening of sub transmission and distribution network?

- a. DDUGJY
- b. UDAY
- c. IPDS
- d. All of the above

30. At what time the vacuum circuit breaker should be inspected?

- a. After every 1000 operations
- b. After every 1500 operations
- c. After every 2500 operations
- d. After every 2000 operations

31. What will be the range of current if the electric shock leads to Ventricular fibrillation?

- a. 0-5 milli Amp
- b. 10-15 milli Amp
- c. 15-20 milli Amp
- d. 20-30 milli Amp

32. Which of the following functions comes under commercial department?

- a. Meter Reading and Billing
- b. Control Room
- c. Power Supply
- d. a, b and c
- e. a and c

33. What is the secondary name of Insulation Resistance (IR) test?

- a. Megger Test
- b. Clamp Meter Test
- c. Earth Resistor Test
- d. All of the above

34. Which system reduces the accidents due to touching of snapped conductors?

- a. AB Cables
- b. HVDS System
- c. Lightning Arrestor
- d. All of the above

35. What will be full load loss in Conventional Transformer if its capacity is 63 KVA?

- a. 1085 W
- b. 685 W
- c. 1235 W
- d. 1760 W

36. What will be full load loss in Amorphous Transformer if its capacity is 63 KVA?

- a. 466 W
- b. 844 W
- c. 1235 W
- d. 1192 W

37. With the implementation of Privatization in Delhi, the AT&C losses has been reduced from 55% to

- a. 20%
- b. 25%
- c. 30%
- d. 35%

38. How many States have been depicted to unbundle SEBs?

- a. 21
- b. 25
- c. 22
- d. 23

39. What should be the height of leaning a ladder for every 4 m in height?

- a. 5 m
- b. 3 m
- c. 2 m
- d. 1 m

40. Plinth mounted distribution substation are installed for capacity more than

- a. 250 KVA
- b. 500 KVA
- c. 750 KVA
- d. 1000 KVA

41. What should be the DC test voltage for equipments having ratings of 24V to 50V

- a. 100V to 250V
- b. 250V to 500V
- c. 50V to 100V
- d. 500V to 1000V

Questions – Medium Level

1. Energy meters on 11 kV may be of
 - a. class 1 / class 0.5 accuracy
 - b. class 2 accuracy
 - c. class 3 accuracy
 - d. any class accuracy

2. Energy meters at customer end may be of
 - a. class 1 / class 0.5 accuracy
 - b. class 2 accuracy
 - c. class 3 accuracy
 - d. any class accuracy

3. For proper earthing, the pit should be filled with _____.

4. The tariff fixation should not consider the distribution loss of more than _____%.

5. Utilities must be able to provide fresh connection in
 - a. 1 day
 - b. 3 days
 - c. One week
 - d. One month

6. For High Voltage Direct Current (HVDC) lines (100 KV of DC Voltage), the clearance above ground shall not be less than
 - a. 7m
 - b. 6m
 - c. 5m
 - d. 4m

7. Good earth resistance for a distribution sub-station is
 - a. 2 ohm
 - b. 20 ohm

8. Which of the following contribute to the deterioration in the power sector distribution system performance?
 - a. More than optimum loading of DTRs
 - b. Feeder Segregation
 - c. Maintenance of distribution equipment
 - d. All of the above

9. Any fatal accident must be reported to electrical inspector within
- 4 hrs.
 - 24 hrs.
 - 48 hrs.
 - 1 week
10. The conductor of an overhead line, including service lines (not exceeding 650V), erected along any street shall at any part thereof not be at a height less than
- 5.2m
 - 5.3m
 - 5.4m
 - 5.5m
11. The conductor of an overhead line, including service lines (not exceeding 650V), erected across a street shall at any part thereof not be at a height of less than
- 5.5m
 - 5.6m
 - 5.7m
 - 5.8m
12. If there is proper earthing, then there is no need for lightening arrestor.
- Right
 - Wrong
13. The ultimate authority in resolving a dispute is
- SERC
 - CERC
 - Appellate Tribunals
 - Courts
14. The ERCs can make provision for imposing penalties on DISCOMs for
- Irregular electricity supply
 - Poor quality of electricity supply
 - Delay beyond stipulated time of attending customer complaint
 - All of the above
15. The conductor of an overhead line (not exceeding 650 V) crossing a tramway or trolley bus route using trolley wires shall not have less than
- 1.1m
 - 1.2m
 - 1.3m
 - 1.4m
16. What will be the range of current if the electric shock leads to respiratory failure?
- 0-5 milli Amp
 - 10-15 milli Amp
 - 15-20 milli Amp
 - 20-30 milli Amp

17. The regulators have team to raid the premises of the customer to book them for any electricity theft
- Yes
 - No
18. Following are the physical barrier to communication except
- Location
 - Distance
 - Work Place
 - Feedback
19. Following are the process barrier to communication except
- Location
 - Instructions
 - Channels
 - Feedback
20. Following are the components of time management except
- Track progress
 - Prioritise
 - Scrutinise
 - Multitask
21. The regulator can pass on the AT&C losses on to tariff to the extent of
- AT&C loss of 7 %
 - AT&C loss of 10 %
 - AT&C loss of 20 %
 - AT&C loss of 30 %
 - Case to case basis depending upon the prevailing ground realities. However regulators can forewarn the DISCOMs that the AT&C loss burden on tariff would reduce in a pre-specified phased manner
22. What should be the DC test voltage for equipments having ratings of 24V to 50V
- 100V to 250V
 - 250V to 500V
 - 50V to 100V
 - 500V to 1000V
23. Neon tester is a protective instrument that gives alarm indication of live H.V. and L.V. lines at a distance of
- 3 m
 - 4 m
 - 5 m
 - 6 m

24. Indian Industrial Programme for Energy Conservation is coordinated by:
- Bureau of Energy Efficiency
 - Respective state level utilities
 - Non-governmental agencies
 - Regulatory Commission
25. The conductor of an overhead line including service lines, erected elsewhere than along or across any street shall not be at a height less than
- 3.8m
 - 4.2m
 - 4.6m
 - 5.2m
26. After installing PSCC pole, the permanent load is what percentage of the working load?
- 15%
 - 10%
 - 25%
 - 40%
27. High income consumers are likely to resist DSM because:
- fear of loss of comfort and quality
 - consumerism provides no choices
 - they are concerned with high up-front costs
(Arrange in order of importance)
28. Which tariff rates are applicable to small shops, offices, hotels, guest houses, theatres etc.?
- Domestic
 - Commercial
 - Industrial
 - None of the above
29. What would you do to improve the reliability and quality of electricity service
- Adopting GIS based network planning and implementation
 - Improved system of maintenance planning and implementation
 - Refurbishment of existing distribution system
 - Comprehensive training policy to training every personnel regularly
 - All above
30. Better customer service is being now enforced by
- Electricity Act 2003
 - Central government
 - State government
 - CERC and SERC
 - All of the above

31. What should be the horizontal clearance of EHV lines from nearby buildings?
- 2.0m
 - 2.2m
 - 2.4m
 - 2.6m
32. For lines of voltage exceeding 33 kV, the clearance above ground shall not be less than
- 5.0m
 - 5.1m
 - 5.2m
 - 5.3m
33. What measures may be initiated to prevent theft of electricity for i) direct tapping ii) tampering with meters by existing consumers/
- Peer pressure
 - Electronic metering
 - Conversion to HVDS and ABC
 - b and c
 - a, b and c
34. Centralized call center to cater to all types of customer complaint helps in building confidence in the customer provided this is backed up by
- Courteous receipt of complaints
 - Keeping the complainant updated on status of the complaint
 - Disconnecting the call after hearing the complaint
 - a and b
 - b and c
35. Customer indexing helps in providing better service and faster redressal of complaints, because it helps in knowing following detail(s) about the customer?
- Physical address
 - Identification of feeder and transformer to which the customer is connected
 - Collection details
 - a and b
 - b and c
36. Methods of informing customer about future power cuts (time and duration) are
- Radio
 - TV
 - Newspapers
 - All above
37. Which of this is not the feature can't be measured by clamp meters?
- DC current
 - Voltage
 - Resistance
 - AC current

38. What should be the vertical clearance of EHV lines from nearby buildings?
- e. 2.8m
 - f. 3.2m
 - g. 3.5m
 - h. 3.7m
39. Which device is used to protect the power line from the lightning stroke
- a. Circuit Breaker
 - b. Instrument Transformer
 - c. Lightning Arrestor
 - d. All of the above
40. Which parameters are used for calculating SAIDI?
- a. Total no. of consumer served
 - b. Connected Load
 - c. No. of consumers interrupted
 - d. Total interrupted duration
 - e. a and d
 - f. b and c
 - g. All of the above

Questions- Hard Level

1. Any fatal accident must be reported to electrical inspector within
- a. 4 hrs.
 - b. 24 hrs.
 - c. 48 hrs.
 - d. 1 week
2. Three electrodes forming an equilateral triangle for providing adequate earth buffer must be at a distance of with minimum distance of
- a. 5000 mm
 - b. 6500 mm
 - c. 7500 mm
 - d. more than 8000 mm
3. The governance of power distribution regulation means
- a. Central government framed rules
 - b. Rules for making rules
 - c. State government framed rules
 - d. Court directives about rules

4. Which of the following ideas has no impact on the end use efficiency by the industrial consumer?
 - a. Use of capacitors to regulate power factor
 - b. Opting of time of the day tariffs
 - c. Repetitive rewinding old motors

5. The 11 KV/415 V transformer is mounted on a MS channel at a height of :-
 - a. 1.44 m
 - b. 1.75 m
 - c. 2.25 m
 - d. 2.44 m

6. The operating handle of GO (gang operating) switch is located on one poles of structures at the height of :-
 - a. 2.25 m
 - b. 2.50 m
 - c. 1.50 m
 - d. 1.25 m

7. Transformers of capacity above 500 KV are mounted on :-
 - a. H-Pole Mounted Distribution Substation
 - b. Plinth Mounted Distribution Substation
 - c. Platform Mounted Distributed Substation
 - d. None of the above

8. If the transformer is erected by means of hydra or crane, it may be ensured that transformer is coming in a position just below the structure and above the top edge of the two nos. of box channels fitted at _____ height on side channels of the two pole structure
 - a. 5 ft.
 - b. 10 ft.
 - c. 15 ft.
 - d. 20 ft.

9. At what range the specified performance of CT is to be maintained
 - a. 5% to 120% of rated current
 - b. 10% to 100% of rated current
 - c. 15% to 90% of rated current
 - d. 20% to 125% of rated current

10. At what range the specified performance of PT is to be maintained
 - a. 80% to 120% of rated current
 - b. 70% to 100% of rated current
 - c. 60% to 90% of rated current
 - d. 50% to 125% of rated current

11. Indian Industrial Programme for Energy Conservation is coordinated by:
 - a. Bureau of Energy Efficiency
 - b. Respective state level utilities
 - c. Non-governmental agencies

- d. None of the above
12. Earthing pits must be watered
- a. Every day
 - b. Once in three days
 - c. Once a week
13. Regulation of electricity distribution business is done by
- a. Central Government
 - b. State Government
 - c. State Electricity Regulatory Commissions
 - d. None of the above
14. The SERCs protect the interest of
- a. DISCOMs only
 - b. SEBs only
 - c. Customers only
 - d. Electricity generation, transmission, and distribution companies as well as the customers
15. Current rating is not necessary in case of
- a. Isolators
 - b. Circuit breakers
 - c. Load break switches
 - d. Circuit breakers and load break switches
16. Cannibalized transformer should be loaded up to
- a. 52 %
 - b. 64 %
 - c. 74%
 - d. 80 %
17. The current carrying capacity of Dog conductor will be:-
- a. 85
 - b. 250
 - c. 102
 - d. 135
18. The government can ask the regulators to keep the tariff low
- a. By forcing the Discoms to bear the losses
 - b. By asking regulatory commission to pay for the subsidy
 - c. By paying the subsidy themselves
19. The drill for firefighting must be repeated every
- a. Month

- b. Three months
 - c. Year
20. Due to electrocution, if the person is faint or pale or shows other signs of shock, lay the person down with the head slightly lower than the trunk of his or her body and the legs elevated.
- a. Right
 - b. Wrong

Viva Questions:

1. What are T&D Loss and AT&C Losses? What is the basic difference between them?
2. What are the key functions of Power Distribution Company?
3. What are the major functions of SERC and CERC?
4. What is the function of LA in a substation?
5. Name different types of circuit breaker and their functions in a substation.
6. What is the difference between isolator and circuit breaker?
7. What is the use of transformers? What kind of new transformers are used to reduce technical loss?
8. What is Distribution substation, its types and functions?
9. What is the use of HVDS in Power Distribution system? How is it helpful in preventing theft?
10. What are the different types of conductors and insulators? Explain their functions.
11. What is the difference between AMR, Prepaid and Smart Meters installed in consumer's premises?
12. What are the functions of Megger testing, Clamp testing and Earth testing?
13. What is the significance of Planned Maintenance and Unplanned Maintenance in Power Distribution system?
14. What are basic features of SCADA and how is it implemented?
15. What is the significance of GIS Mapping?
16. Explain the whole procedure/ flow diagram of Meter Reading. Billing and Collection process.
17. What kind of treatment to be given for electric shock?
18. What is the use of battery in a substation?
19. What is a capacitor bank? Define its functions.
20. What are the different types of earthing methods used in distribution substation?

On Job Training Questions:

1. Conduct a site visit to show the maintenance activity on circuit breakers, switchgears and isolators.
2. Monitor critical parts of the transformer.
3. Conduct a site visit to show the different components of Power Distribution network
4. Conduct planned shutdown activity (whole process) to perform maintenance on Overhead lines, transformers and other related distribution equipments.
5. Make connection for IR test (Megger Test), Polarity test and winding resistance test on a transformer.
6. Describe the use of Personal Protective Equipment (PPE) with practical applications.
7. Monitor the activities of GIS Mapping performed in Arc GIS software and handheld devices used for data dumping process.

8. Conduct a session on the billing automated process after dumping of meter records and verifying it
9. Apply to avail PTW for emergency shutdown during breakdown or any maintenance activity.
10. Perform activities that are done in different emergency situation. For instance, in case of Fire and Electric Shock.