QUESTIONS BANK SUMMER 2022

GENERATION TRANSMISSION AND DISTRIBUTION

4TH SEM, ELECTRICAL ENGINEERING

2 MARK QUESTIONS

**1.What is the function of surge tank?**

**2.What are the advantages of high transmission voltage ?**

**3.Draw the layout of a typical a.c. power supply scheme by single line diagram.**

**4.Explain critical disruptive voltage.**

**5.What is sag in overhead lines ?**

**6.What are the factors which affect corona?**

**7.What is voltage regulation?**

**8.Define Transmission efficiency.**

**9. Define load factor.**

**10.What do you understand by tariff?**

**11.Define load factor.**

**12.What is ring main distribution system?**

**13.What is Corona ?**

**14.Define flat rate tariff.**

**15.What is the function of air-preheater in thermal power plant?**

**16.State the classification of overhead transmission line on its voltage and distance.**

**17. What do you mean by Ferranti effect?**

**18.What is voltage regulation of a transmission line ?**

**19.Explain critical disruptive voltage.**

**20.Define Transmission efficiency.**

**21.What is the function of surge tank?**

**22.What is Demand Factor?**

**23.What is load curve ?**

**24.Define plant capacity factor.**

**25.What is voltage regulation?**

**26.What do you understand by tariff?**

**27.Define sag.**

**LONG QUESTIONS**

1. **Draw the schematic diagram of nuclear power station and discuss its operation.**
2. **A generating station has a connected load of 48 mW and a maximum demand of 20 MW, the units generaed being 64.5x 106 per annum. Calculate demand factor and load factor.**
3. **State and prove Kelvin's law for size of conductor for transmission line. Discuss its limitations.**
4. **Describe two part tariff with its advantages and disadvantages.**
5. **Describe briefly the different types of d.c. distributors.**
6. **Discuss the various types of Insulators?**
7. **A medium single phase transmission line 100 Km long has the following constants; resistance/km/ ph is 0.15 ohm, reactance/km/ph is 0.377Ω, susceptance/km/ph is 14 x 10-6 siemen, receiving end line voltage is 132 kV. Assuming that the total capacitance of the line is localised at the receiving alone, determine (i) the sending and current, (ii) the sending end voltage, (iii) voltage regulation, (iv) supply power factor. The line is delivery 72 MW at 0.8 pf lagging. Draw the phasor diagram to illustrate the calculations.**
8. **With a neat diagram describe murray loop test for the location of (i) earth fault and (ii) short circuit fault in an underground cable ?**
9. **Describe briefly the different types of d.c. distributors.**
10. **What are the causes of low power factor and how it can be improved"?**
11. **What are the factors affecting corona? How it can be reduced?**
12. **State and explain Kelvin's law for economical size of conduction.**
13. **Draw an L-T substation layout and name its important components.**
14. **The following two tariffs are offered, (i) Rs. 100 plus 15 paise per unit. (ii) A flat rate of 30 paise per unit. At what consumption is first tariff economical?**
15. **State and explain methods of cable laying.**
16. **An overhead transmission line at a river crossing is supported from two towers at height of 40 m and 90 m above water level, the horizontal distance between the towers being 400 m If the maximum allowable tension is 2000 kg, find the clearance between the conductor and water at a point mid-way between towers. Weight of conductor is 1kg/m.**
17. **Explain with block diagram the working of a Nuclear power plant.**
18. **A transmission line has a span of 300 m between level supports the conductor has an effective diameter of 1.96 cm and weights 0.86 kg/m Its ultimate strength is 8060 kg. If the conductor has ice coating of radial thickness 1.27 cm and is subjected to a wind pressure of 3.9 gm/cm2 of projected area. Calculate sag for a safety factor of 2, weight of 1cc of ice is 0.91 gm.**
19. **Define tariff State the different types of tariff with its desirable characteristics.**
20. **Derive sag for an overhead transmission line when supports are at unequal levels.**
21. **What is the maximum length in km for a 1 phase transmission line having cu conductor of 0.775 cm2 cross-section over which 200 KW at unity power factor and at 3300 volt are to be delivered? The efficiency of transmission is 90%. Take specific resistance as 1.725 micro ohm cm.**
22. **State the advantages of HVDC transmission over HVAC transmission.**
23. **The maximum demand of a consumer is 20 A, at 220 V and its total energy consumption is 8800 kWh. If the energy is charged at rate of 20 paise per unit. For 500 hour use of maximum demand per annum plus 10 paise per unit for additional unit. Calculate: (i) Annual bill (ii) Equivalent flat rate.**
24. **A 2 wire D.C. distributor AB is fed from both ends. At feeding point 'A' the voltage is maintained as at 'A' 230 V and "B" 235 V. The total length of the distributor is 200 m and loads are tapped off under 25 A at 50 m from 5A, 50 A at 75 m from A, 30 A at 100 m from A and 40A at 150m from A. The resistance per km of one. conductor is 0.3Ω. Calculate (i) Current in various section of the distributor. (ii) Minimum voltage and point at which it occurs**
25. **Derive the expression for percentage regulation and transmission efficiency for a medium transmission line.**
26. **A single phase a.c. distributor AB 300 metres long is fed from end A and is loaded as under. (i) 100 A at 0.707 p.f. lagging, 200 m from point (ii) 200 A at 0.8 p.f. lagging. 300m from point A**
27. **The load resistance and reactance of the distributor is 0.2 km and 0.1 km per Kilometre Calculate the total voltage drop in the distribute. The load power factors refer to the voltage at the far end.**
28. **With a neat diagram describe Marray loop test for the location of (i) earth fault and (ii) short circuit fault in an underground cable?**
29. **Write in brief about Suspension type insulators.**
30. **Write Short Notes on Ring-main distribution system.**
31. **Write short notes on load curves.**