

1	Compare EHVAC and HVDC transmission system. What are the standard rated voltages for HVDC and EHVAC systems?
2	What are the advantages offered by FACTS devices? What are the emerging trends in transmission networks?
3	What is the requirement of reactive power in a transmission system? Compare series and shunt compensation.
4	Calculate the secondary line voltage of the transformer 3-phase bridge rectifier to provide a DC voltage of 100kV. Assume $\alpha = 30^\circ$ and $\mu = 15^\circ$. What is effective reactance X_L , if the rectifier gives 600A of DC output current
5	If $V_g - I_g$ characteristics of an SCR is assumed to be a straight line passing through the origin, with a gradient of 3×10^{-3} . Calculate the required gate source resistance, given that $E_g = 10V$ and allowable gate power dissipation is 0.012W.
6	What is synchronous condenser? What are its applications? Compare synchronous condenser and static capacitor for reactive power compensation.
7	What is TSC-TCR? How can it be differentiated from FC-TCR? Explain operating characteristics of TSC-TCR.
8	A bipolar two terminal HVDC link is delivering 1000MW at $\pm 500kV$ at the receiving end. The total losses in the DC circuit are 40MW. Calculate (1) Sending end voltage (2) Voltage at mid point (3) Total resistance of DC circuit.
9	Compare different SVCs.
10	What are the equipments required in HVDC system? Discuss the reliability aspect of HVDC system.
11	What is AGC? How primary and secondary control in AGC works? Also explain transformer tap changer control.
12	What is the principle of HVDC voltage source converter? Explain in detail with relevant diagrams
13	Explain conduction sequence in 6-pulse converter configuration.
14	Analyze 12-pulse converter.
15	How compounding of rectifiers can be done? Explain current compounding of an inverter.
16	What is the importance of harmonic study in HVDC system? How the harmonics are generated by transformer
17	Explain the fundamental requirements of a.c. transmission line.
18	Compare and discuss compensated and uncompartated lines.
19	Explain the passive and active compensation.
20	Explain the causes of low power factor.
21	Discuss the disadvantages of low power factor.
22	Explain the methods for power factor improvement.
23	Compare HVDC transmission with HVAC transmission line.
24	What is FACTS concept ? Explain it in details.
25	Explain the basic types of FACTS controllers.
26	Explain the benefits of FACTS technology.
27	Discuss the advantages and disadvantages of HVDC transmission line.
28	Explain voltage sags and voltage swell.

