

1455

April 2025

Time – Three hours
(Maximum Marks: 100)

[N.B. Answer all the questions, choosing any two subdivision from each question. Each subdivision carries 10 marks.]

1.
 - (a) Draw the schematic arrangement of thermal power plant. Explain its working.
 - (b) Write a note on wind and pumped storage schemes.
 - (c) Draw the block diagram of Diesel power plant. Explain its working.
 - (d) Define the following: (3+3+4)
(i) Demand factor (ii) Load factor (iii) Plant use factor
2.
 - (a) Draw a typical layout of AC power supply scheme. Also explain.
 - (b) Write about the formation of corona in AC transmission. Also state the factors affecting it.
 - (c) Write note on the following:
(i) Skin Effect (5)
(ii) Ferranti effect (5)
 - (d) Discuss about the types of supports used in overhead system with their applications.

3. (a) Draw the block diagram of UPFC FACTS controller. Explain.
(b) Write a note on any two DC link configurations.
(c) (i) State the need for FACTS controllers. (7)
(ii) Mention any three HVDC locations in India. (3)
(d) Draw and explain the layout scheme of H.V.D.C transmission system.
4. (a) Explain the construction of a three core UG cable with necessary diagrams.
(b) Discuss about causes for the failure of insulators.
(c) Define string efficiency. Also explain the methods of improving string efficiency.
(d) Discuss about the construction of belted cable and screened cable.
5. (a) Explain the connection schemes of AC distribution system with neat sketch.
(b) Draw the layout of 110/11KV substation. Explain.
(c) (i) What are the requirements of distribution system? (5)
(ii) Mention any five equipment used in substation. (5)
(d) Discuss about the types of bus bar arrangements with necessary diagrams.