

- N.B. :** (1) Question No. 1 is compulsory.
 (2) Attempt any **three** from the **remaining** questions.
 (3) **Figures to right** indicate full marks.

1. (a) What are the effects of fluctuating load on power plant? 5
 (b) Explain the Kaplan turbine used in hydro power plant 5
 (c) Explain Carnot cycle. 5
 (d) Compare the nuclear fission and fusion. 5

2. (a) What are the different types of electric tariff? Explain any four in detail. 10
 (b) Explain the fluidized bed combustion process. 10

3. (a) Explain the working of PV cells with the neat diagram. 10
 (b) The maximum demand of a power station is 96000 kW. It has to supply 10 the load as follows :—

Time (hrs)	0-6	6-8	8-12	12-14	14-18	18-22	22-24
Load(MW)	48	60	72	60	84	96	48

- (i) Draw load curve and load duration curve.
 (ii) Calculate load factor.

4. (a) Explain pumped storage plant. 10
 (b) Explain working of liquid metal fast breeder reactor with diagram. 10
5. (a) Draw and explain the general layout of diesel power plant. 10
 (b) Explain typical layout of thermal power plant. 10
6. (a) Explain Horizontal Axis and Vertical Axis Wind Turbine. 10
 (b) Write a short note on MHD. 10