

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

1. (a) Define the following terms :- 5
 (i) Demand factor (iv) Utilization factor
 (ii) Load factor (v) Plant capacity factor
 (iii) Diversity factor.
 (b) Explain in brief : (i) Hydrograph, (ii) Flow duration curve. 5
 (c) Explain in brief, the base load and peak load plant. 5
 (d) Compare nuclear fission and fusion. 5
2. (a) What are advantages and disadvantages of gas turbine power plant. 10
 (b) Explain fluidized bed combustion process. 10
3. (a) What are the important factors that governs selection of site for steam power plant? What are its advantages and disadvantages of steam power plant when compared to Hydroelectric power plant. 10
 (b) The maximum demand of power station is 96000KW. It has to supply the load as follows :- 10

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 pressurized water reactor (PWR) mention its advantages and disadvantages. 10
 (b) Explain working of liquid metal fast breeder reactor with diagram. 10

5. (a) The run off data of a river at a particular site is tabulated below :-

10

Month	Mean discharge per month (Millions of cum)	Month	Mean discharge per month (Millions of cum)
Jan.	40	July	75
Feb.	25	Aug.	100
March	20	Sept.	110
April	10	Oct.	66
May	00	Nov.	50
June	50	Dec.	40

(i) Draw hydrograph and find mean flow.

(ii) Draw flow duration curve.

(iii) Find power in MW available at mean flow if the head available is 80M and overall efficiency of generation is 85%.

(b) Draw and explain general layout of diesel power plant.

10

6. (a) What are the factors taken into consideration, while selecting the location of wind farm?

10

(b) Explain in brief :-

10

(i) Power generation using biomass.

(ii) Basic principle of power generation in PV Cell.
