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QP Code : 22952

( 3 Hours )

(Total Marks : 80

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

1. (a) Define the following terms : 5  
 (i) Demand factor  
 (ii) Load factor  
 (iii) Diversity factor  
 (iv) Utilization factor  
 (v) Plant capacity factor  
 (b) Compare Nuclear fission and fusion. 5  
 (c) Define the following terms : 5  
 (i) Plasma technology  
 (ii) Tidal energy sources  
 (d) Differentiate between conventional and non-conventional sources of energy. 5
2. (a) Explain BWR with neat sketch. Compare the same with PWR. 10  
 (b) Explain advantages, disadvantages, layout and field of use of Diesel power plant. 10
3. (a) List advantages and disadvantages of steam power plant. Write the names of turbines used in thermal power plant. 10  
 (b) The runoff 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)
January	40	July	75
February	25	August	100
March	20	September	110
April	10	October	60
May	0	November	50
June	50	December	40

- (i) Draw a hydrograph and find the mean flow.  
 (ii) Also draw the flow duration curve.

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4. (a) Define tariff and explain various types of tariff in brief. 10  
(b) Explain "Pulverized Coal Handling" in steam power plant. 10
5. (a) Explain "Principle of operation of fuel cell". Also discuss types of fuel cell. 10  
(b) A generating station has the following daily load cycle. 10

Time (Hours)	0 - 6	6 - 10	10 - 12	12 - 16	16 - 20	20 - 24
Load (MW)	40	50	60	50	70	40

Draw the load curve and find maximum demand units generated per day, average load and load factor.

6. (a) Explain thermal power plant in detail with its neat block diagram. 10  
(b) Explain the classification of Hydro power plant. 10