



Printed Pages : 3

EE - 601

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 2024

Roll No.

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B. Tech.

(SEM. VI) EXAMINATION, 2007

POWER STATION PRACTICE*Time : 2 Hours]**[Total Marks : 50**Note : Answer all questions.***1** Attempt any **three** of the following : **4×3=12**

- (a) What is the current generation of electricity from all possible sources in India? What percentage of nuclear power energy is sharing the market?
- (b) In 21st century, what is expected mode of possible sharing of power? How this can be feasible? What type of transmission is needed to ensure above?
- (c) Discuss the geo-thermal energy generation.
- (d) Draw the block diagram of biogas energy unit? Explain each in detail. Compare the merits and demerits of electrical energy with the other forms of energy.

V-2024]

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- 2 Attempt any **two** parts of the following : $6 \times 2 = 12$
- (a) Give the detailed functioning of boiler. What is the condition of getting maximum efficiency of boiler? Explain Also discuss the functions of economizer in a thermal power plant.
 - (b) A power plant comprising of gas and steam turbine plant is operating for a category of load. A huge load block is suddenly added. Mention the way the load added will be shared and more over which unit will respond quickly and why?
 - (c) What are the factors which decide the efficiency of gas turbine? How to make these turbines, the most efficient one?
- 3 Attempt any **three** parts of the following : $4 \times 3 = 12$
- (a) Give the physical layouts of different types of bus bar arrangement. In actual field, how these are formed? Explain the role of bus bar configuration in both HT and LT side of substation.
 - (b) Give the schematic diagram of nuclear reactor and mention the cooling mechanism.
 - (c) What are the configuration of francis and Kaplan turbines? Give their applications.
 - (d) Explain the role of moderators and reflectors in getting maximum power output of nuclear plant.
 - (e) Classify the hydroelectric plant on the basis of available water head and discuss.

4 Attempt any two parts of the following : $7 \times 2 = 14$

- (a) Define the terms (i) load factor, (ii) diversity factor and discuss their influence on the cost of generation. A generating station has daily load cycle as

Time (Hrs) :	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 load duration curve and find

- (i) maximum demand
 - (ii) unit generated and
 - (iii) load factor.
- (b) What are the causes and effects of poor power factor? Discuss any one method to improve the power factor.
- (c) Describe the objectives and different forms of the tariff.

The monthly readings of a consumer's meter are as

Maximum demand = 50 kW; Energy consumed = 36000 kWh and reactive energy = 23400 kVAh.

If the tariff is Rs. 80 per kW of maximum demand plus 8 paise per unit plus 0.5 paise per units for each 1% of p.f. below 87% calculate the monthly bill of the consumer.