Roll No .....

ME - 602

B.E. VI Semester

Examination, June 2013

Power Plant Engineering

Time : Three Hours

Maximum Marks : 100 *Minimum Pass Marks : 35*

Note: Attempt any five questions. All questions carry equal marks.

1. a) How are biogas classified? Explain them briefly? 10
   b) What are the different types of Hydrogen Fuel Cells? 10

2. a) What are the advantages and disadvantages of pulverized fuel firing over stoker firing in steam power plants? 10
   b) Explain in briefly out-door and in-door type steam station? 10

3. a) Enlist the various solar house heating system? What is the main difference between them? 10
   b) Explain in briefly wind and tidal power generation system? 10

4. a) Explain the safety and reliability features for the Nuclear power generation? 10
   b) What are different types of Reactors commonly used in Nuclear power stations? 10

5. a) Define the mass curve and explain its use in the design of dam capacity and spill-way capacity? 10
   b) A medium capacity storage types. Hydro-electric power plant covers 1200 sq.km area. The annual rainfall in catchment area is 160 cm. The head available at the power plant site is 360 meters. Assuming 25% of the rainfall is lost in evaporation and percolation, find the average power developed by the power plant and maximum demand. Take overall efficiency of the plant as 75% and load factor 0.5. 10

6. a) How the most economical capacity of Hydro-electric plant is decided? 10
   b) What is "Direct energy conversion system" Explain in brief the various direct energy conversion system? 10

7. a) For a power station the yearly load duration curve is a st.line from 30,000 kw to 4,000 kw. To meet the load three turbo-generator are installed. The capacity of two generators is 15,000 kw each and third is rated at 5,000 kw. Determine the following (i) Load factor (ii) Capacity factor (iii) Max Demand. 15
   b) Define following : Term related to power plants : 5
      i) Maximum demand ii) Diversity factor.

8. Write short notes on the following : 20
   a) Energy conversion
   b) Moderators
   c) Power plant Economics
   d) Fission and Fusion

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