Roll No .....

ME - 602

B.E. VI Semester

Examination, June 2015

Power Plant Engineering

Time : Three Hours

Maximum Marks : 70

Note: i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.
ii) All parts of each questions are to be attempted at one place.
iii) All questions carry equal marks, out of which part A and B (Max.50 words) carry 2 marks, part C (Max.100 words) carry 3 marks, part D (Max.400 words) carry 7 marks.
iv) Except numericals, Derivation, Design and Drawing etc.

1. a) Classify direct and indirect methods of converting into electricity.
   b) Define the Fuel Cell. State its classification.
   c) State the advantages and limitations of hybrid energy systems.
   d) State the applications of solar and wind energy. Draw a neat sketch of solar flat plate collector.

   OR

   Describe with neat sketch open loop and closed loop MHD converter.

2. a) State the auxiliary plant equipments used in thermal power plant.
   b) State brief about cooling tower used in steam power plant.
   c) Write the recent trends in boiler size and steam conditions.
   d) Explain various types of fuel burning systems and fuel handling systems with their comparison.

OR

Write a detailed technical note on instrumentations required in thermal power plant.

3. a) State the concept of binding energy in nuclear reactions.
   b) Compare nuclear fission and fusion reactions.
   c) State the function of Moderators and coolants in nuclear power plant.
   d) State the classifications of nuclear power plant. Compare fast and thermal reactors.

   OR

   Describe with neat diagram, breeder reactor used in nuclear power plant. Write its advantages and disadvantages.

4. a) Compare micro and Pico hydro machines.
   b) Draw flow and power duration curve. State its importance.
   c) Draw and state types of Spillways used in hydro power plant.
   d) What is Balancing reservoir? State the site selection criteria for hydro power station.

   OR

   Discuss selection of hydraulic turbines.

5. a) Define the terms : Diversity factor, Load factor and Plant factor.
   b) What are interconnected systems? State their advantages and limitations.
   c) What is tariff? State its types.
   d) Compare economics of hydro, nuclear and thermal power plants.

   OR

   Explain the following terms :
   i) Maximum demand
   ii) Power factor
   iii) Estimation and prediction of load

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