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Question Paper Code : 21578

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2013.

Seventh Semester

Mechanical Engineering

ME 2403/ME 73/ME 1353 — POWER PLANT ENGINEERING

(Common to PTME 2403 – Power Plant Engineering for B.E. (Part – Time) Seventh Semester – Mechanical Engineering)

(Regulation 2008)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is the significance of load curve?
2. What are the accessories used in a boiler?
3. What do you understand by the term boiler draught?
4. What is the function of a cooling tower in a power plant?
5. Why is shielding of a nuclear reactor necessary?
6. What is hydrograph?
7. Name the various types of diesel engine used for diesel power plants.
8. What are the applications of gas turbine plant?
9. Differentiate between renewable and non-renewable sources of energy.
10. Define demand factor and load factor.

PART B — (5 × 16 = 80 marks)

11. (a) Draw a general layout of a thermal power plant and explain the working of various circuits in it. (16)

Or

- (b) (i) Draw a neat diagram of LaMont boiler and explain its working. (8)
- (ii) In the view of performance and safety compare steam, hydro, nuclear power plant. (8)

12. (a) (i) List down the advantages of burning the fuels in pulverized form. (8)
(ii) Explain with the help of a diagram, the working of a cyclone separator. (8)

Or

- (b) (i) List the advantages and disadvantages of surface condensers. (8)
(ii) Describe with a neat sketch the operation of a hyperbolic cooling tower. (8)
13. (a) (i) Explain the principal parts of nuclear reactor in brief. (8)
(ii) Explain with neat sketch the working of CANDU type reactor. (8)

Or

- (b) (i) Explain the factors that should be considered while selecting the site for hydro power plant. (8)
(ii) Explain the working of Pelton turbine with a neat diagram. (8)
14. (a) List and explain the function of the essential components of a diesel power plant. (16)

Or

- (b) (i) With an aid of a block diagram, explain the working principle of a closed cycle gas turbine plant. (8)
(ii) Write a short note on combined cycle plant. (8)
15. (a) (i) Describe the working of a double basin tidal power plant. (8)
(ii) Explain with a neat sketch the operation of a solar thermal power plant. (8)

Or

- (b) (i) Explain briefly the various methods used to calculate the depreciation cost. (8)
(ii) Elucidate the objectives and requirements of tariff and general form of tariff. (8)
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