Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 10320

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2012.

Fourth Semester

Electrical and Electronics Engineering

EE 2252/131402/EE 43/EE 1252/10133 EE 403/080280027 — POWER PLANT ENGINEERING

(Regulation 2008)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — ($10 \times 2 = 20$ marks)

1. What is the function of deaerator in a thermal power plant?

2. Why thermal plants are not suitable for supplying fluctuating loads?

3. On what factors does the selection of a water turbine for hydel plants depend upon?

4. What for surge tank is provided in the hydel plant?

5. What is nuclear fission?

6. Name the three moderators commonly used in nuclear power reactor.

7. What are the methods by which the efficiency of an open cycle gas plant can be improved?

8. What is meant by regeneration?

9. What is a solar cell?

10. What is the principle of a thermoelectric power generator?

PART B — (5 × 16 = 80 marks)

11. (a) (i) With the help of a neat sketch describe the working of any one type of ash handling system. (8)

(ii) What do you understand by fluidized bed combustion? (8)

Or

(b) (i) Explain with the aid of sketches forced draft and induced draft system. (8)

(ii) Why is coal pulverized? Explain any one type of pulverized systems used now-a-days. (8)

12. (a) (i) With the help of a simple diagram, explain the essential features of hydro power plant. (12)

(ii) What is the function of a draft tube? (4)

Or

(b) (i) Compare and contrast Kaplan turbine and Francis turbine. (8)

(ii) What is meant by a pumped storage plant? Discuss its advantages and disadvantages. (8)

13. (a) Discuss why?

(i) Nuclear power plants are used only as base load plants. (4)

(ii) A nuclear reactor needs a moderator material. (6)

(iii) Control rods are used in nuclear power reactor. (6)

Or

(b) (i) Discuss the advantages and disadvantages of a nuclear plant as compared to other conventional power plants. (8)

(ii) Explain what is chain reaction in connection with a nuclear reactor. (8)

14. (a) Draw a layout of diesel power plant, showing various systems and explain each system in detail. (16)

Or

(b) Draw diagrams and explain the difference between open cycle and closed cycle gas turbine plants. (16)

15. (a) With a neat diagram, explain MHD power generation technology and list its advantages. (16)

Or

(b) Write a technical note on the following : (6 + 5 + 5)

(i) Fuel Cell

(ii) Thermionic converter

(iii) Geothermal power generation.

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