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

Question Paper Code : 20821

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2018.

Fifth / Seventh Semester

Mechanical Engineering

ME 6701 – POWER PLANT ENGINEERING

(Common to Mechanical Engineering (Sandwich) / Electrical and Electronics Engineering)

(Regulations 2013)

(Also common to : PTME 6701 – Power Plant Engineering for B.E (Part-Time) – Second Semester / Sixth Semester – Electrical and Electronics Engineering / Mechanical Engineering – Regulations – 2014)

(Use of Approved Steam table with mollier chart in permitted)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the purposes of Draught?
2. What is the principle of cogeneration?
3. What are the advantages of closed cycle gas turbine over open cycle gas turbine?
4. Give examples of combined cycle power plant.
5. What is the function of Pressurizer in the PWR?
6. What is a CANDU type reactor?
7. Mention the various advantage of wind power.
8. List the methods of solar energy utilization.
9. Define load curve.
10. Name any two advanced emissions control technologies for Coal-Fired Power Plants.

PART B — (5 × 13 = 65 marks)

11. (a) Explain the principle of Fluidised bed combustion (FBC) system. State the advantages of FBC system. (13)

Or

(b) Explain the various methods involved in ash handling with neat sketches. (13)

12. (a) State the essential functions of a fuel injection system in a diesel power plant. With a neat sketch, explain the Common Rail fuel injection system. (13)

Or

(b) With a neat sketch, explain the working of combined cycle power plants. (13)

13. (a) Describe with a neat sketch the working of boiling water reactor (B.W.R.). Discuss the advantages and disadvantages of it. (13)

Or

(b) Discuss on the Safety Measures for Nuclear Power Plants. (13)

14. (a) Write short notes on Wind power systems. (13)

Or

(b) Write short notes on biogas. (13)

15. (a) Explain the different types of Power Tariffs. (13)

Or

(b) Discuss on pollution control and waste disposal in Coal and Nuclear power stations? (13)

PART C — (1 × 15 = 15 marks)

16. (a) What is regeneration? How it improves the thermal efficiency of a simple open cycle gas? (15)

Or

(b) State the classification of hydro-power plants and explain the working hydroelectric power plant with a neat sketch. (15)