Code No: R194103H **R19** **Set No. 1**

IV B.Tech I Semester Advance Supplementary Examinations, March - 2023

POWER PLANT ENGINEERING

(Mechanical Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions
ONE Question from Each unit
All Questions Carry Equal Marks

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UNIT I

1 a) List the advantages and disadvantages of steam power plants. [6]
b) Enumerate and explain various modern ash-handling systems. [9]

(OR)

2 a) Enumerate different sources of energy. [6]
b) Briefly explain Sodium Zeolite processmethod of feed water treatment. [9]

UNIT II

3 a) List the advantages, disadvantages, and applications of diesel power plants. [6]
b) Explain with a neat sketch the layout of a gas turbine power plant. [9]

(OR)

4 a) List the essential components of a diesel power plant and explain them briefly. [6]
b) Describe with a neat diagram a closed cycle gas turbine. State also its merits and demerits. [9]

UNIT III

5 a) What is a nuclear reactor? How are nuclear reactors classified? [6]
b) Explain with a neat sketch a pumped storage plant. [9]

(OR)

6 a) Define run-off. List the factors which affect run-off. [7]
b) Enumerate and explain essential components of a nuclear reactor. [8]

UNIT IV

7 With the help of a neat sketch, explain pumped storage plant in combination with nuclear power plant. [15]

(OR)

8 a) State the advantages of gas turbine plant as peak load plant in an interconnected system. [7]
b) Explain the procedure for measuring CO_2 content in the gases. [8]

UNIT V

9 a) Define and Explain: (i) Diversity Factor and (ii) Utilization Factor. [6]
b) What are the various methods of disposal of radioactive waste materials? [9]

(OR)

10 The yearly duration curve of a certain plant can be considered as a straight line from 150MW to 40MW. Power is supplied with one generating unit of 100MW capacity and two units of 50MW capacity each. Determine :
i) Installed capacity ii) Load factor iii) Plant factor
iv) Maximum demand v) Utilization factor. [15]