

Code No: **R204103H**

R20

SET - 1

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY GURAJADA VIZIANAGARAM
IV B. Tech I Semester Regular/Supplementary Examinations OCT/NOV 2025
POWER PLANT ENGINEERING
(ME)

Time: 3 hours

Max. Marks: 70

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

UNIT-I

1. a) With a neat sketch explain the working of any one type of dust collector. [7M]
b) Why feed water treatment is considered essential in a thermal power plant, Comment? [7M]

(OR)

2. a) Describe the working of pneumatic ash handling system. [7M]
b) Discuss the ways for storage of coal. [7M]

UNIT-II

3. a) Explain the effect of supercharging on the performance of Diesel engine. [7M]
b) Describe the function of combined gas turbine and steam power plant. [7M]

(OR)

4. a) Explain with a relevant diagram working of fuel supply system. [7M]
b) Describe the working of simple gas turbine power plant. [7M]

UNIT-III

5. a) With a neat diagram, explain the hydrological cycle [7M]
b) Describe the working of breeder reactor with a neat sketch. [7M]

(OR)

6. a) Describe the working of pumped storage plant. [7M]
b) Explain the working of gas cooled reactor with a neat sketch. [7M]

UNIT-IV

7. a) Explain the criteria for combining pump storage plant with nuclear power plant in detail. [7M]
b) Explain the instrumentation used for smoke and dust measurement in a power plant. [7M]

(OR)

8. a) Discuss the coordination of different types of power plants. [7M]
b) Describe the electrical circuit for the measurement of carbon dioxide content in the gases. [7M]

UNIT-V

9. a) The yearly duration curve of a certain plant can be considered as a straight line from 120MW to 20MW. Power is supplied with one generating unit of 80 MW capacity and two units of 40MW capacity. Calculate (i) Installed capacity (ii) Load factor (iii) Plant factor (iv) Maximum demand. [7M]
b) Explain how different pollutants effect on human health and vegetation. [7M]

(OR)

10. a) Explain fixed cost and running cost of hydroelectric power plant. [7M]
b) Describe radioactive pollution to environment from nuclear power plants. [7M]
