

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)

B.Tech IV Year I Semester Regular Examinations February-2024

POWER PLANT ENGINEERING

(Mechanical Engineering)

Time: 3 Hours

Max. Marks: 60

(Answer all Five Units 5 x 12 = 60 Marks)

UNIT-I

- 1 A 60 MW power station has an annual peak load of 50 MW. The power station supplies loads having maximum demands of 20 MW, 17 MW, 10 MW and 9 MW. The annual load factor is 0.45. Find: (i) Average load, (ii) Energy supplied per year, (iii) Diversity factor, (iv) Demand factor. CO1 L3 12M

OR

- 2 a Identify the pollution effects from hydro-electric plants. CO1 L1 6M
b List the advantages of combined operation of power plants. CO1 L1 6M

UNIT-II

- 3 Discuss the factors to be considered for the selection of a site for setting up a steam power plant. CO2 L2 12M

OR

- 4 a Discuss about over feed fuel bed. CO2 L2 6M
b Explain the working of a spreader stoker. CO2 L2 6M

UNIT-III

- 5 Classify the IC engines with brief explanation and list out its applications. CO3 L4 12M

OR

- 6 a Describe a simple open cycle gas turbine plant with a simple line diagram. CO3 L1 6M
b List out the advantages and disadvantages of combined cycle power plant. CO3 L1 6M

UNIT-IV

- 7 Explain the need for flow measurement and the methods for flow measurement. CO4 L2 12M

OR

- 8 Discuss a pumped storage power plant with neat diagram. CO4 L2 12M

UNIT-V

- 9 Explain a nuclear reactor with neat diagram. CO5 L2 12M

OR

- 10 a Define radioactive waste and describe the necessity of its disposal. CO5 L1 6M
b Summarize the radiation hazards on living beings. CO5 L2 6M

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