PVP 14

Code: ME8T1

IV B.Tech-II Semester–Regular/Supplementary Examinations–March 2020

POWER PLANT ENGINEERING
(MECHANICAL ENGINEERING)

Duration: 3 hours Max. Marks: 70

PART – A

Answer ***all*** the questions. All questions carry equal marks

11 x 2 = 22 M

1.

a) List the various components of a modern steam power plant.
b) What are different components of pulverized fuel burning system?
c) State the applications of diesel power plant.
d) List the applications of gas turbine plants.
e) Enumerate essential elements of hydro-electric power plant.
f) What do you mean by the term 'Radioactivity'?
g) List the various non-conventional energy sources.
h) What do you mean by Run off River plants?
i) Write the significance of load curves.
j) Define demand factor and load factor.
k) Explain the significance of specific steam consumption.

PART – B

Answer any ***THREE*** questions. All questions carry equal marks.

3 x 16 = 48 M

2. a) Explain the different types of circuits used in steam power plant with neat layout sketch. 8 M

   b) With a neat sketch explain coal handling system. 8 M

3. With a neat sketch explain diesel power plant. 16 M

4. Describe the essential features or elements of hydro-electric power plant. 16 M

5. a) Discuss about pumped storage plant in combination with Steam power plant. 8 M

   b) Explain the measurement of O_2 and CO_2 measurement in steam power plants. 8 M

6. The peak load on a 50 MW power station is 39 MW. It supplies power through four transformers whose connected loads are 17,12, 9 and 10 MW. The maximum demands on these transformers are 15,10, 8 and 9 MW respectively. If the annual load factor is 50% and the plant is operating for 65% of the period in a year, find out the following: 16 M
   a) Average load on the station.
   b) Energy supplied per year.
   c) Demand factor.
   d) Diversity factor.
   e) Power station use factor.