

Code: ME8T1

**IV B.Tech-II Semester–Regular/Supplementary Examinations–April 2017**

**POWER PLANT ENGINEERING  
(MECHANICAL ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

Answer any FIVE questions. All questions carry equal marks

1. With the help of neat diagrams, discuss the various methods of ash handling. 14 M
  
2. a) Explain a cyclone dust collector. 7 M  
  
b) Explain a wet dust collector. 7 M
  
3. With the help of a neat diagram, explain the air-intake system of a diesel power plant. 14 M
  
4. a) Give the advantages and limitations of gas turbine power plant. 7 M  
  
b) Give the field of application of gas turbine power plants. 7 M
  
5. With the help of a simple diagram, explain the essential features of a water-power plant. 14 M

6. Write short notes on:
- a) Thermo-electric generator 7 M
  - b) Thermionic converter 7 M
7. What is a moderator? Name common moderators and discuss their advantages and limitations. 14 M
8. The yearly duration curve of a certain plant can be considered as a straight line from 30,000 to 10,000 kW. To meet this load, two turbine generator units, each rated at 15000 kW and other one at 7,500 kW are installed. Determine: 14 M
- a) Installed capacity
  - b) Plant factor
  - c) Maximum demand
  - d) Load factor
  - e) Utilization factor