

MMTP-201
M.E./M.Tech., II Semester
Examination, November 2019
Thermal Power Plant Engineering

Time : Three Hours

Maximum Marks : 70

- Note : i) Attempt any five questions.
ii) All questions carry equal marks.

1. a) What are the main considerations in selecting a boiler for a steam power station?
b) Make the general layout of conventional thermal power plant and explain the main circuits.
2. a) What is pulverization? What is the mechanism of pulverized fuel firing system?
b) Discuss the advantage and disadvantage of surface condenser over jet condenser.
3. a) What are the need and importance of feed water heater? Explain its various types.
b) What is the Logarithmic Mean Temperature Difference (LMTD) approach applied in the designing of condensers?
4. a) Discuss the practical Regenerative-Rankine vapour power cycle with the help of neat schematic flow diagram having single feed water heater utilized in steam power plants. Plot its various processes on Temperature-entropy and enthalpy-entropy diagram.

- b) Bring out the difference between the closed cycle and open cycle gas turbine power plant.
5. a) Explain methods of controlling emission of fossil fuel.
b) A Reheat-Rankine cycle operates between the pressure limits of 26 bar and 0.04 bar. The steam entering the HP turbine and LP turbine has a temperature of 400°C. The steam leaves the HP turbine as dry and saturated. Draw the temperature-entropy diagram of this cycle and determine its thermal efficiency. Neglect the pump work.
6. a) State and brief discuss various preliminary acceptance tests for various components of thermal power plant.
b) Discuss the following terms in thermal power plant:
 - i) Maintenance logging
 - ii) Drop setting
 - iii) Heat balance of items
7. a) Discuss the training requirements of thermal power plant personnel's.
b) What do you mean by fluidization? Explain in brief fluidized bed combustion.
8. Write the short note on (any three):
 - i) Temperature measurement in a power plant
 - ii) Performance curves
 - iii) Piping and its flexibility analysis
 - iv) Heat balance of items and entire thermal power plant
