

Roll No. 

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Total No. of Pages : 02

Total No. of Questions : 09

**B.Tech (EE) (Sem.-6)**  
**POWER PLANT ENGINEERING**  
Subject Code : ME-352  
Paper ID : [A0423]

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTIONS TO CANDIDATES :**

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **FIVE** questions carrying **FIVE** marks each and students have to attempt any **FOUR** questions.
3. **SECTION-C** contains **THREE** questions carrying **TEN** marks each and students have to attempt any **TWO** questions.

**SECTION-A****1. Write briefly :**

- a) Define Dalton's law of partial pressure.
- b) Differentiate one region and two region reactors.
- c) State the purpose and working mechanism of feed water heaters.
- d) Discuss the generation of nuclear energy by fission.
- e) Differentiate between dams and spillways used in hydro electric power plants.
- f) How inter cooling and regeneration help in improving thermal efficiency of the plant?
- g) State various methods to control the particulate emission.
- h) List the advantages of combined operations of plants.
- i) Show the plant layout of gas turbine.
- j) Define knocking and why is it required?

### SECTION-B

2. Describe Babcock Wilcox and Cochran boilers.
3. What is Hydrological cycle? Explain its significance in locating the site and design of hydro electric power plants.
4. A power station has a maximum demand of 15 MW, a load factor of 0.7, a plant capacity factor of 0.525 and a plant use factor of 0.85. Determine
  - a) The daily energy produced.
  - b) The reserve capacity of the plant.
  - c) The maximum energy that could be produced daily if the plant operating schedule is fully loaded when in operation.
5. Describe the modes of pollution from thermal, diesel, and nuclear power plant. Describe electrostatic precipitator.
6. Discuss the essential components of a diesel power plant with a neat plant layout.

### SECTION-C

7. Describe the reheat-regenerative cycle. Discuss the application of feed pump, heat exchangers, economizers, super heater, reheater, preheaters, and evaporators in steam power plant.
8. How are nuclear power plants classified? Explain the construction and working of a nuclear power plant with a layout. Discuss briefly about the safety measures in nuclear power plants.
9. Write short note on the following :
  - a) Load division between combined operation of plants
  - b) Binding energy
  - c) Super charging