Roll No. | | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(EE) PT (Sem.–4)

POWER PLANT ENGINEERING

Subject Code : BTEE-406

M.Code : 72449

Time : 3 Hrs. Max. Marks : 60

INSTRUCTION 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) How steam generators are being classified?

(c) Discuss the role of a feed water heater in a steam power plant.

(d) What is 'specific speed' of a turbine?

(e) Define Nuclear Fission.

(f) What do you mean by binding energy?

(g) Write a short note on "gas turbine fuels".

(h) What are the essential components of a diesel power plant?

(i) Discuss the benefits of combined operation of various power plants.

(j) Discuss the types of pollution caused by nuclear power plants.

SECTION-B

2. Discuss the problems in ash handling. With the help of a neat sketch describe the working of any one type of ash handling system.

3. Name the different type of hydro-turbines. Explain any two of them in detail.

4. Find the power produced by fissioning 5 grams of U^{235} per day.

5. Draw the layout of a diesel power plant and explain it in detail.

6. Discuss the advantages of interconnections of various power plants.

SECTION-C

7. Explain briefly :

   (a) Open and closed cycles for gas turbines

   (b) Electrostatic precipitator

8. A proposed hydro-electric station has a available head of 25 m, a catchment area of 5×10^7 m^2, the rainfall for which is 120 cm per annum. If 75% of the total rainfall can be collected, calculate the power that could be generated. Assume overall efficiency as 65%.

9. How nuclear reactors are being classified? Explain with the help of suitable diagrams.