Roll No. | | | | | | | | | | | | |

Total No. of Pages :02

Total No. of Questions : 09

B.Tech.(ME) (2011 Onwards E-II) (Sem.–7,8)

POWER PLANT ENGINEERING

Subject Code :DE/ME-1.8

M.Code :72004

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. Answer briefly :

a. What are high pressure boilers?

b. What is the function of economizer? Where it is usually installed?

c. What is a chain reaction? How it is controlled?

d. What area the different types of hydroelectric power plants?

e. What are the different components of a nuclear power plant?

f. Enlist the various parts of a nuclear reactor.

g. What is the working principle of photo voltaic power station?

h. What are fissile materials?

i. What is flow duration curve?

j. What are renewable sources of energy?

SECTION-B

2. Discuss the present status and future trends of energy sources in India.

3. What is a mass curve? What information does it provide? What is its use?

4. In a gas turbine cycle, the compressor compresses air from 100 kPa and 22°C to 600 kPa. The turbine inlet temperature is 800°C. A regenerator with 80% efficiency is provided. The isentropic efficiencies of compressor and turbine are 0.90 and 0.80 respectively. Find the improvement in efficiency due to installation of regenerator. Assume y = 1.4 and Cp = 1 kJ/kg K.

5. Describe a pneumatic ash handling system for thermal power station with neat sketch.

6. What are the different methods to calculate annual depreciation cost?

SECTION-C

7. Describe the construction and working of Boiling water reactor with neat diagram. Also explain its advantages and disadvantages.

8. Describe different methods of fuel injection used in diesel plant. Which method is commonly used in large capacity diesel plant and why?

9. Write short notes on:

   a) Tidal energy

   b) Thermoelectric conversion system

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.