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

Total No. of Pages : 02

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B.Tech.(EE) (2011 Onwards)/(Electrical & Electronics)/(Electronics & Electrical) (2011 & 2012 Batch)/(Electrical Engg. & Industrial Control) (2012 Onwards)

(Sem.–4)

POWER PLANT ENGINEERING

Subject Code : BTEE-406

M.Code : 57110

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

Q1. Answer briefly :

a) Discuss the role of a condenser in a steam power plant.

b) Why is ash handling plant necessary in a thermal plant?

c) What is a hydrograph?

d) Define mass defect.

e) Differentiate between fertile and fissile materials.

f) What is aeroderivative gas turbine?

g) What do you mean by nuclear fission?

h) Name the main parts of diesel power plant.

i) Differentiate between two stroke and four stroke diesel engines.

j) What is an electrostatic precipitator?

SECTION-B

Q2. Draw and explain the flue gas and water steam flow diagrams of a steam power plant.

Q3. Explain how hydroelectric plants are classified.

Q4. Show that a mass defect of 1 amu is equivalent to about 931 MeV of energy.

Q5. Discuss the principle of operation of a closed cycle gas turbine plant. Compare it with open cycle gas turbine plant.

Q6. Discuss the advantages of combined operation of different plants. Explain with the help of suitable example.

SECTION-C

Q7. Discuss the factors which affect the thermal efficiency of a thermal power station. A thermal power station has an overall efficiency of 24% and 0.80Kg of coal is burnt per kWh of generated energy. Determine the calorific value of coal.

Q8. What are the advantages of diesel plants over the thermal plants? Why diesel plants are not used for high capacity? What are its drawbacks when used for high capacity compared to steam plants?

Q9. What considerations have to be kept in view in sitting nuclear plants? How nuclear reactors are being classified? Explain.

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.