

Roll No.

ME-602(N)

B. E. (Sixth Semester) EXAMINATION, June, 2010

(New Scheme)

(Mechanical Engg. Branch)

POWER PLANT ENGINEERING

[ME-602(N)]

Time : Three Hours

Maximum Marks : 100

Minimum Pass Marks : 35

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Note : All questions are compulsory, internal choice with all questions are given.

1. Write short notes on the following : 5 each
- (a) MHD-Converter
 - (b) Geothermal energy
 - (c) Solar and Wind energy options
 - (d) Methods of converting various energy sources to electric energy

Or

2. Write short notes on the following :
- (a) Fuel cells 6
 - (b) Tidal energy 7
 - (c) Hybrid system of energy conversion 7

3. (a) With the help of a simple sketch explain and discuss main elements of a nuclear reactor. 12
- (b) Differentiate between nuclear fission and fusion processes. 8

Or

4. (a) Discuss the functions of moderator and reflector. 7
- (b) Explain a fast breeder reactor's working principle. 8
- (c) Write down safety and reliability features of a nuclear power plant. 5
5. (a) Discuss the parameters on which the selection of site for a hydraulic power plant depends. 10
- (b) Explain hydrographs. What are mass curves? How they are plotted? 10

Or

6. (a) What do you mean by spillway? Discuss its various types. 5
- (b) List the essential elements of a hydroelectric power plants. 5
- (c) What are microhydro and picohydropower plants? 5
- (d) What are flow power duration plant curves? 5
7. (a) Discuss various terminology used concerning loads in power plants such as connected load, maximum demand, demand factor, average load, load factor, diversity factor, plant capacity factor and plant use factor. 16
- (b) What are interconnected systems? Enlist their advantages. 2, 2

Or

8. (a) Compare nuclear power plants with hydroelectric power plants. 8

- (b) What are the elements of load dispatch in interconnected systems? 6
- (c) How the load for a power plant is estimated and predicted? 6

9. Write short notes on the followings : 5 each

- (a) Plant design and layout of steam power plants.
- (b) Fuel handling system for steam power plants.
- (c) Cooling towers for steam power plants.
- (d) Testing and plant heat balance of steam power plant.

Or

10. Write short notes on the following : 5 each

- (a) Elements of feed water treatment plant of a steam power plant.
- (b) Outdoor and indoor plants.
- (c) Steam condensing plant of steam power plants.
- (d) Effects of climatic factors on steam power plant design.