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Question Paper Code : 41046

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2013.

Sixth Semester

Mechanical Engineering

080120036 — POWER PLANT ENGINEERING

(Regulation 2008)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What do you understand by water hammer?
2. What are the advantages of combined cycles?
3. What is the use of electrostatic precipitator?
4. What is the mechanism of pulverized fuel firing system?
5. Explain the term nuclear fission.
6. What is the function of moderator and give examples?
7. What is the use of regenerator?
8. What is meant by reheating combustion chamber?
9. What are the various types of load?
10. What are the elements of fixed and operating costs?

PART B — (5 × 16 = 80 marks)

11. (a) Describe the working of a “pumped storage plant” and discuss its importance as a peak load plant.

Or

- (b) What are auxiliaries of a hydro —power plant, and what methods of drives are employed for these? Discuss the advantages and disadvantages of each method.

12. (a) Name the various methods of ash handling. Describe the pneumatic system of ash handling. Why it is essential to quench the ash before handling?

Or

- (b) Draw the neat diagram of hyperbolic cooling tower and discuss its merits and demerits.
13. (a) How are nuclear reactor classified? Describe some common types of reactors used for electric power plants. Discuss fast breeder reactor.

Or

- (b) How waste is disposed off in a nuclear power station? What are the main difficulties in handling radioactive waste?
14. (a) Draw a neat sketch of a diesel power plant showing all the systems.

Or

- (b) What are the fuels used in gas turbine plants and what fuel characteristics suit such plants best? Discuss the recent trends to use solid fuels in such plants.
15. (a) Enumerate various types of tariff and explain any two of them.

Or

- (b) The annual peak load on a 30MW power station is 25 MW .The power station supplied loads having maximum demands of 10 MW, 8.5 MW, 5 MW and 4.5 MW. The annual load factor is 45%. Find
- (i) Average load
 - (ii) Energy supplied by year
 - (iii) Diversity factor
 - (iv) Demand factor.
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