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Question Paper Code : 90795

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2025.

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Fifth/Sixth/Eighth Semester

Mechanical Engineering

CME 384 — POWER PLANT ENGINEERING

(Common to : Electrical and Electronics Engineering)

(Regulations 2021)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is the difference between stocker firing and pulverized fuel firing?
2. Define Binary cycle.
3. What do you mean by regeneration in gas turbine power plant?
4. What is gasifier?
5. Brief about Boiling Water Reactor (BWR).
6. What is LMFBR? Why liquid metal preferred in fast breeder reactor?
7. Why is a surge tank important in a hydro electric power plant?
8. What is the source of geothermal energy?
9. Define demand factor.
10. What is the purpose of electrostatic precipitator?

PART B — ($5 \times 13 = 65$ marks)

11. (a) Explain in detail about different types of Fluidized Bed Combustion (FBC) boiler.

Or

- (b) Explain the various processes involved in coal and ash handling with neat sketch.

12. (a) Explain various components and operation of gas turbine power plant.

Or

- (b) Explain in detail about integrated gasifier based combined cycle systems.

13. (a) Draw and explain the construction and working principle of CANDU Type Reactor with neat sketch.

Or

- (b) Discuss in detail about gas cooled and liquid metal cooled Reactor.

14. (a) Explain how electrical energy can be generated in single basin two way cycle of tidal power generation.

Or

- (b) Discuss about fuel cell power system with neat sketch.

15. (a) What are the objectives of power tariff? Discuss the different types of power tariff.

Or

- (b) Discuss in detail about economic aspects of power generation.

PART C — ($1 \times 15 = 15$ marks)

16. (a) With neat sketch explain in detail about the various types of wind energy system with example.

Or

- (b) Draw and explain the block diagram of Nuclear power plant and write the advantages and disadvantages.