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Question Paper Code : 27380

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2015.

Fifth Semester

Electrical and Electronics Engineering

ME 6701 — POWER PLANT ENGINEERING

(Regulations 2013)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is meant by super critical boiler?
2. What is pulveriser and why it is used?
3. Mention the major difference between otto cycle and diesel cycle.
4. Why power generation by gas turbine is more attractive than other turbines?
5. List the function of control rods.
6. How do you cater for safety of nuclear power plant?
7. Mention the various advantage of wind power.
8. What are the limitations of tidal power plant?
9. What is the significance of load curve?
10. What are the equipment used to control the particulates?

PART B — (5 × 16 = 80 marks)

11. (a) Write short notes on :
 - (i) Ash handling system. (8)
 - (ii) Different draught systems. (8)

Or

- (b) Explain with a neat sketch the working of a thermal electric power plant station and discuss the function of major components in it. (16)

12. (a) Explain the working of open cycle and closed cycle gas turbine power plant and discuss its advantages and disadvantages. (16)

Or

- (b) (i) Explain in detail about the construction and working of IGCC. (10)
(ii) Draw and explain PV and TS diagrams of Brayton cycle. (6)

13. (a) Explain with a neat diagram the various parts of nuclear power plant and mentioning the function of each part. (16)

Or

- (b) (i) Explain CANDU reactor with neat sketch. Give its advantages and disadvantages. (8)
(ii) Explain what is chain reaction in connection with a nuclear reactor. (8)

14. (a) (i) Draw a schematic diagram of a hydro plant and explain the operation. (10)
(ii) Write a short note on Bio energy. (6)

Or

- (b) (i) Briefly explain solar PV system. (8)
(ii) What are the various kinds of fuel cell and explain the working of anyone? (8)

15. (a) (i) Explain the analysis of pollution from thermal power plants. (10)
(ii) Elucidate the objectives and requirements to tariff and general form of tariff. (6)

Or

- (b) (i) Write short note on Nuclear waste disposal. (8)
(ii) A central power station has annual factors as follows. Load factor = 60%, Capacity factor = 40% and use factor = 45%. Power station has a maximum demand of 15,000 KW. Determine the annual energy production, reserve capacity over and above peak load and hours per year not in service. (6)