

CBCS SCHEME

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15ME71

Seventh Semester B.E. Degree Examination, Dec.2018/Jan.2019
Energy Engineering

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Explain with neat sketch, Spreader Stokers. (08 Marks)
b. What is Pulvarised coal? What are the advantages and limitations of Pulvarised coal? (08 Marks)

OR

- 2 a. Explain with neat sketch, Cyclone Burner. (08 Marks)
b. Explain Forced draught system. (08 Marks)

Module-2

- 3 a. Explain with neat sketch air intake and exhaust system. (08 Marks)
b. List the advantages, limitation and application of Diesel Power Plant. (08 Marks)

OR

- 4 a. How the Hydel power plants are classified and explain with neat sketch Pumped storage plant? (07 Marks)
b. Define i) Hydrograph ii) Flow duration curve iii) Surge tank. (09 Marks)

Module-3

- 5 a. What is Beam Radiation? Explain working principle of Pyrhelimeter for measuring beam radiation. (08 Marks)
b. The incident beam of sunlight has a power density of 1 kW/m^2 in the direction of beam. The angle of inclination is 60° . Calculate the power collected by the surface having a total area of 120 m^2 . (08 Marks)

OR

- 6 a. Explain with neat sketch, working principle of a solar cell. (08 Marks)
b. Explain three Basic methods of Thermal Energy Storage. (08 Marks)

Module-4

- 7 a. Explain with neat sketch, Vertical axis type wind mill. (08 Marks)
b. Wind at 1 standard atmospheric pressure and 15°C temperature has a velocity of 15 m/s with turbine operating speed of 40 rpm at maximum efficiency. Assume turbine diameter 120 m . Calculate i) Total power density in the wind stream ii) The maximum obtainable power density iii) A reasonably obtainable power density @ $\eta = 35\%$ iv) Total power. (08 Marks)

OR

- 8 a. How Tidal power plants are classified and what are the limitations of Tidal power plant? (09 Marks)
b. Explain Fundamental characteristics of Tidal power plant selection. (07 Marks)

Module-5

- 9 a. Write short notes on :
i) Photo synthesis ii) Energy plantation. (08 Marks)
b. With neat sketch, explain down draft gasifier. (08 Marks)
- OR
- 10 a. What is Fuel cell? How fuel cells are classified? (08 Marks)
b. What is Green energy? What are the benefits of green energy? (08 Marks)

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