

CBCS SCHEME

15EE563



USN

Time: 3 hrs.

Fifth Semester B.E. Degree Examination, Feb./Mar. 2022 Renewable Energy Sources

Max. Marks: 80

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

Module-1

- 1 a. Define and explain the term 'energy resources'. Discuss different ways of their classification. (08 Marks)
- b. Discuss causes of energy scarcity further mention factors to be considered for solving energy crunch problems. (08 Marks)

OR

- 2 a. Give the details of renewable energy capacity installed in India. (08 Marks)
- b. With block diagram representation, explain multipurpose utilization of solar energy. (08 Marks)

Module-2

- 3 a. What are solar collectors? Give their classification and compare them based on construction and area of applications. (10 Marks)
- b. What are the advantages and disadvantages of concentrating collectors over a flat plate collector? (06 Marks)

OR

- 4 a. Describe principle of solar P.V. conversion with neat sketch. (08 Marks)
- b. Discuss the different applications of solar cell systems. (08 Marks)

Module-3

- 5 a. What is hydrogen energy? Discuss the benefits of hydrogen energy. (08 Marks)
- b. Give the comparison of vertical – axis and horizontal – axis wind turbines. (08 Marks)

OR

- 6 a. Give the world wide wind energy scenario. (08 Marks)
- b. Discuss the environmental effects of geothermal energy. (08 Marks)

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Module-4

- 7 a. With schematic diagram, explain the working of down draft gasification plant. (10 Marks)
- b. Discuss the benefits of biogas. (06 Marks)

OR

- 8 a. Explain the single-basin and two-basin systems of tidal power harnessing plant. (10 Marks)
- b. Discuss the relative merits and limitations of tidal power. (06 Marks)

Module-5

- 9 a. Discuss the principle and working of sea wave energy conversion system. (08 Marks)
- b. Explain the working principle of land based OTEC power plant with schematic diagram. (08 Marks)

OR

- 10 a. With neat schematic diagram explain the working principle of closed-cycle OTEC plant. (08 Marks)
- b. Discuss the advantages and disadvantages of OTEC. (08 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.