

CBCS SCHEME

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Sixth Semester B.E. Degree Examination, Jan./Feb. 2023 Renewable Energy Sources

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Define the following terms : i) Solar Constant ii) Direct Radiation
iii) Solar Aximuth Angle iv) Zenith Angle v) Declination. (10 Marks)
b. With the neat sketch, explain the flat plate solar collector. (10 Marks)

OR

- 2 a. With a neat sketch, explain Solar Pond. (10 Marks)
b. Explain with a neat sketch, the working of Photo voltaic cell. Mention any 2 application of Solar PV system. (10 Marks)

Module-2

- 3 a. Describe the main consideration in selecting a site for Wind generation. (10 Marks)
b. Write the classification of Wind Energy Conversion (WEC) System. Explain any one type. (10 Marks)

OR

- 4 a. Explain the different types of performance factors of a wind machine. Explain any two. (10 Marks)
b. Write the advantages and disadvantages of the WEC system. (10 Marks)

Module-3

- 5 a. Explain with neat sketch, the working principle of Geo Thermal power plant. (10 Marks)
b. List the advantages and disadvantages of Geo Thermal Energy. (10 Marks)

OR

- 6 a. With neat sketch, explain the working of 'Hot Dry Rock' of Geothermal plant. (10 Marks)
b. Write a brief note on Application of Geothermal Energy. (10 Marks)

Module-4

- 7 a. Describe the working principle of a Open Cycle OTEC system, with neat diagram. (10 Marks)
b. Briefly explain the selection of Site for Ocean Thermal Energy Conversion. (10 Marks)

OR

- 8 a. Explain briefly the advantages and limitations of Tidal Power. (10 Marks)
b. Write the advantages and disadvantages of Wave Energy. (10 Marks)

Module-5

- 9 a. Explain briefly the different methods for Hydrogen storage. (10 Marks)
b. With a neat sketch, explain any one type of Hydrogen Production. (10 Marks)

OR

- 10 a. Explain briefly the design consideration for Mini and Micro Hydel Projects. (10 Marks)
b. Write the advantages and limitations of Small Scale Hydro Electric. (10 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.