

# CBCS SCHEME

17EE563

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## Fifth Semester B.E. Degree Examination, Jan./Feb. 2023 Renewable Energy Resources

Max. Marks: 100

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

### Module-1

- 1 a. Explain causes of Energy Scarcity. (06 Marks)  
b. Classify the Renewable Energy Resources. (08 Marks)  
c. Discuss Renewable Energy availability in India. (06 Marks)

OR

- 2 a. With the help of diagram, define i) Hour angle ii) Latitude angle  
iii) Declination angle iv) Solar Azimuth angle v) Solar Altitude angle. (10 Marks)  
b. Explain any Five Solar Thermal Energy application. (10 Marks)

### Module-2

- 3 a. Discuss Solar space cooling and Solar cookers working and uses. (10 Marks)  
b. With a neat sketch, discuss important parts of flat plate collector. (10 Marks)

OR

- 4 a. Explain with neat diagram, elements of Silicon Solar cell. (10 Marks)  
b. Explain I – V characteristics of Solar cells. Mention application of Solar Cell Systems. (10 Marks)

### Module-3

- 5 a. Mention the application, advantages and disadvantages of Hydrogen Energy. (10 Marks)  
b. What are the factors to be considered for site selection of wind mill? Explain. (10 Marks)

OR

- 6 a. Explain with neat diagram, Geothermal based Electric Power Generation. (10 Marks)  
b. With a block diagram, briefly explain Waste Recovery Management Scheme. (10 Marks)

### Module-4

- 7 a. With a neat sketch, explain Updraft and Downdraft gasifiers. (10 Marks)  
b. What is Gasifier? Give their classification. Mention application of Biomass gasifier. (10 Marks)

OR

- 8 a. With a neat diagram, explain Fixed dome type biogas plant. (10 Marks)  
b. Mention advantages and disadvantages of Tidal power. Also explain problems faced in exploiting tidal energy. (10 Marks)

### Module-5

- 9 a. Explain various devices for Harnessing Seawave Energy. (10 Marks)  
b. Mention advantages and disadvantages of Wave power. (10 Marks)

OR

- 10 a. Explain Open Cycle and Closed Cycle OTEC techniques. (10 Marks)  
b. Explain base Rankine Cycle and its working. Mention advantages of OTEC. (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.

