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

Max. Marks: 80

Time: 3 hrs.

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

Module-1

- 1 a. Explain the prospect of renewable energy sources in our country. Hence mention the merits and demerits of renewable energy sources. (10 Marks)
b. Explain the various types of energy sources available. (06 Marks)

OR

- 2 a. With respect to solar radiation define the following : i) Incident angle ii) Latitude angle iii) Declination angle iv) The hour angle v) Attitude angle vi) Zenith angle. (06 Marks)
b. Explain with the help of neat figure the multipurpose utilization of solar thermal energy application. (10 Marks)

Module-2

- 3 a. With a neat sketch, explain the main components of a FLAT PLATE SOLAR collector by considering the function of each component. (08 Marks)
b. Explain working of a SOLAR POND electric power plant a neat sketch? Hence explain the advantages of solar pond. (08 Marks)

OR

- 4 a. Explain the important requirements of a photovoltaic cell along with main components of a PV cell. (08 Marks)
b. Explain in detail the application of solar cell system. (08 Marks)

Module-3

- 5 a. With the help of a neat diagram, explain the basic components of WECS. (06 Marks)
b. Discuss the main consideration and guidelines in selecting a site for wind energy system. (06 Marks)
c. What are the merits and limitation of Hydrogen energy? (04 Marks)

OR

- 6 a. Explain with the help of a neat diagram the waste recovery management scheme. (06 Marks)
b. Write the merits and demerits of geothermal energy over other energy form. (06 Marks)
c. List out the advantages of waste recycling. (04 Marks)

Module-4

- 7 a. With the help of a neat diagram, explain KHADI VILLAGE INDUSTRIES COMMISSION biogas plant. (08 Marks)
b. Explain with the help of a neat diagram, updraft and downdraft gasifier. (08 Marks)

OR

- 8 a. Discuss the various factors affecting biogas generation. (08 Marks)
b. Explain the advantages and disadvantages of TIDAL POWER. (08 Marks)

Module-5

- 9 a. Explain the merits and demerits of wave energy. (06 Marks)
b. With the help of a neat diagram, explain DOLPHIN – type wave power machine. (06 Marks)
c. Explain the prospect of ocean thermal energy conversion prospect in India. (04 Marks)

OR

- 10 a. With the help of a neat sketch, explain Hybrid cycle. (08 Marks)
b. Explain the advantages, disadvantages and benefits of HETC. (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.

