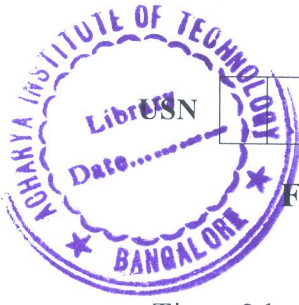


CBCS SCHEME



17EE563

Fifth Semester B.E. Degree Examination, July/August 2021 Renewable Energy Resources

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions.

- 1 a. Briefly explain the factors affecting Energy resource development. (07 Marks)
b. Explain in brief Primary and Secondary Energy Resources and list the classification of energy resources. (07 Marks)
c. Discuss the Renewable Energy availability in India and worldwide. (06 Marks)
- 2 a. Define the following sun angles (06 Marks)
 - i) Lattice angle
 - ii) Declination angle
 - iii) Hour angle
 - iv) Day length Equation
 - v) Solar altitude be angle
 - vi) Surface Azimuth angle.
b. Explain in detail Layer of Sun with a neat diagram. (07 Marks)
c. Discuss about causes of Energy scarcity. (07 Marks)
- 3 a. With a neat schematic diagram. Explain the working of parabolic dish sterling Engine system. (07 Marks)
b. Explain in detail working of Active solar water heating system with neat schematic diagram. (07 Marks)
c. Discuss about different solar cell materials and give application solar PV system. (06 Marks)
- 4 a. List and explain key elements of silicon solar cell with neat diagram. (07 Marks)
b. With a neat schematic diagram, explain working of solar cooker. (07 Marks)
c. Discuss the factors limiting the efficiency of the cell. Define efficiency and fill factor of solar cells. (06 Marks)
- 5 a. Explain various factors to be considered in wind turbine site selection. (07 Marks)
b. Explain in detail Electronic production technologies used to produce Hydrogen Energy Technologies used to produce Hydrogen Energy. (07 Marks)
c. With a neat diagram, Explain flash geothermal based Electric power plant with advantages. (06 Marks)
- 6 a. Give the advantages and disadvantages of Hydrogen Energy. (07 Marks)
b. With a neat block diagram, brief explain waste recovery management system. (07 Marks)
c. Explain the parts of a Horizontal axis wind turbine in detail with neat diagram. (06 Marks)

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.

- 7 a. Define Anaerobic Digestion. Explain in detail the process stages of Anaerobic Digestion with block diagram. (07 Marks)
- b. Briefly explain in detail working of cross draft type of gasifier and give benefit of fluidized Bed gasification. (07 Marks)
- c. Explain working of fixed dome type Biogas plant with a neat diagram. (06 Marks)
- 8 a. Explain various stages of cooling and cleaning of gasifier gas. (06 Marks)
- b. Explain the working of two basin system for tidal power generation. (07 Marks)
- c. Discuss about the problems faced on exploiting tidal energy. (07 Marks)
- 9 a. Explain the working operation of satter duck system for harnessing sea wave energy. (07 Marks)
- b. Discuss in detail OTEC system based on i) Open cycle ii) Closed cycle. (07 Marks)
- c. Give the advantages, disadvantages and benefits of OTEC system. (06 Marks)
- 10 a. Explain the basic principle of ocean thermal Energy Conversion. (07 Marks)
- b. Explain the oscillating water column device for harnessing sea wave energy. (07 Marks)
- c. List and explain the application of OTEC. (06 Marks)

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