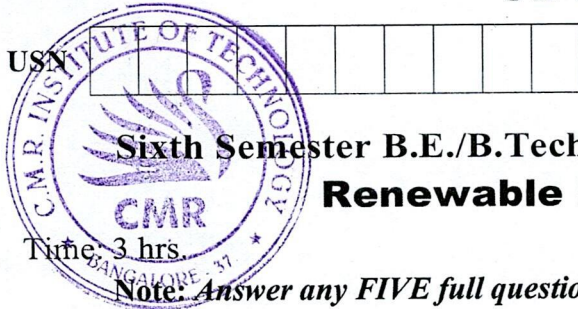


CBCS SCHEME



21ME652

Sixth Semester B.E./B.Tech. Degree Examination, June/July 2025 Renewable Energy Power Plants

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Briefly explain energy resources and its classifications. (06 Marks)
- b. What is the need of non-conventional energy sources. (06 Marks)
- c. Briefly describe energy alternatives : i) Photovoltaic ii) Tar Sand and oil shale. (08 Marks)

OR

- 2 a. With a neat sketch explain : i) Sunshine recorder ii) Pyranometer. (08 Marks)
- b. Distinguish between beam and diffused radiations. (06 Marks)
- c. Explain terrestrial and extra terrestrial radiations. (06 Marks)

Module-2

- 3 a. Define : i) Solar latitude ii) Declination angle iii) Zenith angle
iv) Surface azimuth angle v) Hour angle. (10 Marks)
- b. With neat sketch explain any two types of concentrating collectors. (10 Marks)

OR

- 4 a. Explain with sketch : i) Solar distillation ii) Solar pond. (10 Marks)
- b. With a neat sketch, explain photovoltaic conversion. Given one application of solar cell. (10 Marks)

Module-3

- 5 a. List the types of wind mill. Explain with sketch horizontal axis wind mill. (10 Marks)
- b. Explain with neat sketch Savonius and derrickus types of vertical axis wind turbines. (10 Marks)

OR

- 6 a. With a neat sketch explain fixed dome type biogas plant. (10 Marks)
- b. What are the problems associated in bio-gas production. (10 Marks)

Module-4

- 7 a. With a neat sketch explain Hydel power plant. (10 Marks)
- b. With a neat sketch explain use of : i) Hydrographs ii) Flow duration curves. (10 Marks)

OR

- 8 a. With the help of diagram, explain two basin systems in tidal power harnessing. (10 Marks)
- b. List the advantages and disadvantages of tidal plants. (10 Marks)

Module-5

- 9 a. Describe the closed cycle OTEC system with the help of diagram. (10 Marks)
- b. What are the problems associated with OTEC. (10 Marks)

OR

- 10 a. With a neat sketch explain dry steam based geothermal power plant. (10 Marks)
- b. List the advantages and disadvantages geo-thermal energy. (10 Marks)

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