



# CBCS SCHEME

18ME81

## Eighth Semester B.E./B.Tech. Degree Examination, June/July 2025 Energy Engineering

Time: 3 hrs.

Max. Marks: 100

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

### Module-1

- 1 a. With a neat sketch explain pneumatic ash handling system. (10 Marks)  
b. With a neat sketch explain the Benson Boiler. (10 Marks)

OR

- 2 a. What are the different types of cooling ponds and cooling towers? (06 Marks)  
b. Explain the function of Air-Pre-heater and super heater in thermal power plant. (06 Marks)  
c. List the types of high pressure boilers, explain La-Mont boiler. (08 Marks)

### Module-2

- 3 a. With a neat diagram, explain typical solar flat plate collector. (10 Marks)  
b. With the help of neat sketch, explain the working principle of pyrheliometer for measuring beam radiation. (10 Marks)

OR

- 4 a. With a neat sketch explain the working principle of Janta biogas digester. (10 Marks)  
b. Explain the factors affecting the biogas generation. (06 Marks)  
c. Differentiate between biomass and biogas. (04 Marks)

### Module-3

- 5 a. Explain with a neat sketch the water dominated geothermal system. (10 Marks)  
b. Explain the typical horizontal axis wind mill. With a neat sketch. (10 Marks)

OR

- 6 a. With a neat sketch explain the arrangement of single basin and double basin for tidal power plant. (10 Marks)  
b. With a neat sketch explain vertical axis wind machine and list the advantages and disadvantages. (10 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.

**Module-4**

- 7 a. Explain the following :
- i) Hydrograph
  - ii) Flow Duration Curve
  - iii) Surge tank
  - iv) Water hammer.
- b. With a neat sketch explain pumped storage hydroelectric power plant.
- (10 Marks)  
(10 Marks)

**OR**

- 8 a. Explain Closed Rankine Cycle OTEC system with neat sketch. (10 Marks)
- b. List the advantages ocean thermal energy conversion system. (04 Marks)
- c. List the problems associated with OTEC. (06 Marks)

**Module-5**

- 9 a. Explain the working of Nuclear Power Plant. (10 Marks)
- b. Explain with a neat sketch fast Breeder Reactor. (10 Marks)

**OR**

- 10 a. With a neat sketch explain the concept of Gas Cooled Reactor (GCR). (10 Marks)
- b. Write a note on :
- i) Nuclear fusion and fission
  - ii) Radioactive waste disposal.
- (10 Marks)

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