

# CBCS SCHEME

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18ME751

## Seventh Semester B.E. Degree Examination, July/August 2022 Energy and Environment

Time: 3 hrs.

Max. Marks: 100

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

### Module-1

- 1 a. Intercept world energy scenario with respect to production and consumption using relevant statistics. (10 Marks)
- b. Outline the factors that affect India's energy development. (10 Marks)

OR

- 2 a. Explain various key energy trends in India. (10 Marks)
- b. Define following:
  - (i) Energy
  - (ii) Forms of energy
  - (iii) Power
  - (iv) Energy versus power(10 Marks)

### Module-2

- 3 a. List the various thermal energy storage methods. Explain the working principle for solar pond with neat sketch. (10 Marks)
- b. Explain:
  - (i) Objective of energy management
  - (ii) Audit
  - (iii) Sample report content of energy audit(10 Marks)

OR

- 4 a. Elaborate the different phases provided in detailed energy audit methodology. (10 Marks)
- b. A power plant of 200 MW installed capacity has following particulars:  
Capital cost = Rs.16,000/KW installed  
Interest and depreciation = 12%  
Annual load factor = 60%  
Annual capacity factor = 54%  
Annual running charges = Rs.200 × 10<sup>6</sup>  
Energy consumed by power plant auxiliaries = 6%  
Calculate the cost of power generation per kWh. (10 Marks)

### Module-3

- 5 a. What is ecosystem? Explain different types of forest ecosystem. (10 Marks)
- b. Explain the following terms:
  - (i) Food chain
  - (ii) Food web
  - (iii) Ecological pyramid(10 Marks)

OR

- 6 a. Identify the need for public awareness on environment management. Discuss the effort of important institutions and people in environment management. (10 Marks)
- b. Discuss how carbon is utilized in the ecosystem with the help of a simple flow diagram. (10 Marks)

**Module-4**

- 7 a. Explain main source and effects of air pollution. (10 Marks)  
b. Enumerate the roll of an individual in prevention of pollution. (10 Marks)

**OR**

- 8 a. Discuss strategy and techniques involved in solid waste management. (10 Marks)  
b. Discuss any two case studies related to pollution of environment in detail. (10 Marks)

**Module-5**

- 9 a. Write a short note on global warming. (10 Marks)  
b. What is the need for wasteland reclamation? Explain the methods for reclaiming the wasteland. (10 Marks)

**OR**

- 10 a. What is acid rain? What are its effects and write a short note on ozone layer depletion? (10 Marks)  
b. Discuss Environmental Protection Act and its features. (10 Marks)

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