

Model Question Paper (CBCS) with effect from 2015-16
Fifth Semester B.E. Degree (CBCS) Examination
Energy and Environment

Time: 3 hrs.

Max. Marks: 80

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

MODULE – I

- 1 a** With relevant statistics, enumerate the primary energy production trend for India. (09 Marks)
b Explain the various key energy trends in India. (07 Marks)

OR

- 2 a** Outline the factors that affect India's energy development. (10 Marks)
b Define Energy and Power. Differentiate the same. (06 Marks)

MODULE – II

- 3 a** Calculate the cost of generation per kWh for a power station having the following data:
 Installed capacity of the plant = 200 MW
 Capital cost = Rs 400 crores
 Rate of interest and depreciation = 12% (08 Marks)
 Annual cost of fuel, salaries and taxation = Rs 5 crores
 Load factor = 50%
 Also estimate the saving in cost per kWh if the annual load factor is raised to 60%.
b Explain in the detail the various phases of energy audit methodology. (08 Marks)

OR

- 4 a** Company owns a premium plot. They have to decide which of the several alternatives to select in trying to obtain a desirable return on his investment. After much study and calculation, they decide that the two best alternatives are as given in the following table: (08 Marks)

	Build Solar power plant	Build Hydro power plant
First cost (Rs.)	20,00,000	36,00,000
Annual property taxes (Rs.)	80,000	1,50,000
Annual income (Rs)	8,00,000	9,80,000
Life of land(years)	20	20

Evaluate the alternatives based on future worth method at $i=12\%$

- b** Elaborate the benefits of thermal energy storage. (08 Marks)

MODULE – III

- 5 a** Enumerate the utilization of carbon in ecosystem. (08 Marks)
b Describe grassland ecosystem. What are its types? How conservation of grassland can be made. (08 Marks)

OR

- 6 a** Discuss how oxygen cycle is utilized in the ecosystem. (08 Marks)
b Define Environment. Mention its scope. Discuss the need for public awareness (08 Marks)

MODULE – IV

- 7 **a** Enumerate the water pollution causes and its effects. Mention the control measures that can be initiated for mitigating the same. (08 Marks)
- b** Discuss any two case studies related to pollution of environment in detail. (08 Marks)

OR

- 8 **a** Elaborate the causes, effects and control measures of (i) Soil Pollution (ii) Noise Pollution (iii) Thermal Pollution (08 Marks)
- b** Discuss Solid Waste Management techniques. (08 Marks)

MODULE – V

- 9 **a** Write a note on ozone layer depletion. (08 Marks)
- b** Express the need for reclaiming the wasteland and its development (08 Marks)

OR

- 10 **a** What are the regulations governing water pollution prevention act? (08 Marks)
- b** Enumerate the impact of global warming on our mother nature. (08 Marks)