1. What are the different classifications of energy resources? Explain briefly with examples?
2. Explain present Indian energy scenario?
3. Write short note on Kyoto protocol?
4. What are the advantages of conducting an energy audit?
5. Explain Sankey diagram?
6. What do you mean by Cusum technique?
7. How the electric load and lighting system can be managed for energy efficiency?
8. What do you mean by coefficient of performance?
9. Explain internal rate of return method of evaluation?
10. Explain pay back method in energy management proposal?

PART B

MODULE 1

11.a) Explain the importance of energy conservation? How does energy use impact the environment? (10)
    b) Discuss in detail the major objectives and fundamental principles in green building concept? (10)
12. a) Explain the general principles of energy management? (10)

b) What are the planning steps necessary to establish the energy management program? (10)

MODULE 2

13. a) Define energy audit and explain the various types of energy audit? (10)

b) What are the key instruments for energy audit? (10)

OR

14. Explain energy audit report writing as per prescribe format? (20)

MODULE 3

15. a) State and explain energy management opportunities in heating, ventilating and air conditioning system? (10)

b) Write notes on energy efficient lighting? (10)

OR

16. With the help of case studies, explain the energy management opportunities in a process industry? (20)

MODULE 4
17. a) Explain use of computers in energy management (10)
b) Write notes on cogeneration of electricity (10)

OR

18. What do you mean by life cycle costing approach? Perform the economic analysis of two 75kw motors using life cycle costing approach

<table>
<thead>
<tr>
<th></th>
<th>Motor A</th>
<th>Motor B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficiency</td>
<td>80 %</td>
<td>90 %</td>
</tr>
<tr>
<td>Initial cost</td>
<td>Rs. 30,000</td>
<td>Rs. 60,000</td>
</tr>
<tr>
<td>Replacement life</td>
<td>5 yrs</td>
<td>20 yrs</td>
</tr>
<tr>
<td>Salvage value</td>
<td>Rs. 10,000</td>
<td>Rs. 20,000</td>
</tr>
<tr>
<td>Annual maintenance cost</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>Cost of electricity is Rs 1/kWh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating schedule is 8 hours/day</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(20)