Eighth Semester B. Tech. [ELECTRICAL] Degree Examination

(2013 Scheme-April/May 2017)

13.806.1 ENERGY CONSERVATION AND MANAGEMENT (E) (Elective V)

Time: 3Hours Max. Marks: 100

- ***Instruction:*** *Answer* ***all*** *questions from Part* ***A****.* ***One full*** *question from* ***each*** *Module of Part* ***B****.*

PART A (*Each carries 2 mark*)

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)

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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

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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

	Motor A	Motor B
Efficiency	80 %	90%
Initial cost	Rs. 30,000	Rs. 60,000
Replacement life	5 yrs	20 yrs
Salvage value	Rs. 10,000	Rs. 20,000
Annual maintenance cost	500	500

Cost of electricity is Rs 1/ kWh
Operating schedule is 8hours/day

(20)