



Reg. No. :

Name :

**Sixth Semester B.Tech. Degree Examination, April 2014
(2008 Scheme)**

08.606 Elective II(A) : ENERGY CONSERVATION AND MANAGEMENT (E)

Time : 3 Hours

Max. Marks : 100

PART – I

Answer all questions.

1. Explain what do you mean by global warming.
2. Explain the structure of an energy management committee in a production unit.
3. Write notes on the various governmental agencies related to energy conservation and management.
4. Explain what do you mean by energy effectiveness.
5. Write notes on solar powered lightings.
6. With the help of case studies, explain how energy consumption can be reduced in a process industry.
7. Explain briefly the energy management opportunities in electrolysis.
8. Explain how economic evaluation of energy projects can be done using internal rate of return method.
9. Explain briefly the use of computers in energy management.
10. Explain what do you mean by DEFENDUS strategy. **(10×4=40 Marks)**

PART – II

Module – I

11. Describe the general principles of energy management with the help of case studies. **20**
- OR
12. Describe the purpose of energy audit. What are the different types of energy audit ? Explain the different activities involved in the energy audit. How energy audit report can be prepared ? **20**

P.T.O.



Module – II

13. With the help of case studies, explain the general principles of energy management in an HVAC system. 20

OR

14. a) Explain how energy consumption can be reduced in electric heating. 10
 b) Write notes on energy efficient lightings. 10

Module – III

15. Perform the economic analysis of two 7.5 kW 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	Rs. 500	Rs. 500

Cost of electricity is Re. 1/kWh

Operating schedule is 8 hours/day.

20

OR

16. Write short notes on :
- i) Present value method.
 - ii) Least cost power planning.
 - iii) Cash flow models.
 - iv) Cogeneration of electricity.

(4×5=20 Marks)