



Reg. No. :

Name :

**Sixth Semester B.Tech. Degree Examination, May 2012
(2008 Scheme)**

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

Time : 3 Hours

Max. Marks : 100

PART – A

Answer **all** questions.

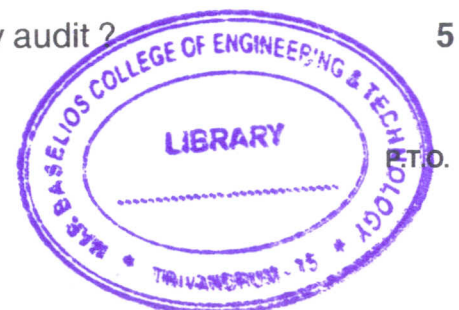
1. Explain briefly the need for energy conservation.
2. What do you mean by energy-GDP coupling ?
3. What are the advantages of establishing energy data base ?
4. What do you mean by coefficient of performance ?
5. With the help of case studies, explain any two energy management opportunities in an HVAC system.
6. What are energy efficient motors ?
7. Explain briefly how energy consumption can be reduced in electrolysis ?
8. Explain how economic analysis of energy projects can be done using pay back period method ?
9. Explain briefly the use of computers in energy management.
10. Explain briefly what is DEFENDUS strategy. (10×4=40 Marks)

PART – B

Module – I

11. a) Explain the purpose of conducting energy audit. 5
- b) What are the different levels of energy audit ? Explain. 10
- c) What are the different instruments used for energy audit ? 5

OR





12. a) Explain the different phases in the process of planning an energy management program. 15
- b) Discuss the structure of an energy management committee in a production unit. 5

Module – II

13. With the help of case studies, explain the energy management opportunities in a process industry. 20

OR

14. With the help of case studies, how energy consumption can be reduced in lighting. 20

Module – III

15. An energy audit in a factory indicates that the total electrical consumption per year is Rs. 5.5×10^6 . By replacing a few motors with energy efficient motors, a 15% saving in energy can be realised. The additional cost of energy efficient motors and their accessories is estimated as Rs. 4,25,000/- and the installation cost is Rs. 80,000/-. Assuming a 15 year life cycle, is the expenditure justifiable on a minimum return of 20%. Conduct an economic analysis using present value method. Determine also the pay back period. 20

OR

16. Write short notes on :
- Average rate of return method.
 - Life cycle costing approach.
 - Least cost power planning.
 - Co-generation of electricity.

(4×5=20 Marks)

