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Reg. No. : .....

Name : .....

Sixth Semester B.Tech. Degree Examination, May 2013
(2008 Scheme)
Branch : Electrical and Electronics
08.606 : Elective – II(A) : ENERGY CONSERVATION AND MANAGEMENT

Time : 3 Hours Max. Marks : 100

PART – A

Answer **all** questions.

1. Explain the present Energy Scenario of world.
2. What is the need of Energy Conservation ?
3. How the GDP of a nation is related to Energy Consumption ?
4. Write briefly on four energy saving methods.
5. What do you mean by Energy management ? What is its primary objective ?
6. Give the energy content of following :
   1) One therm
   2) One barrel crude oil
   3) One gallon LPG
   4) One ton coal.
7. Find the Energy utilization Index for a building with 1,00,000 square feet of floor space using 1.76 million kWh and 6.5 million cubic feet of natural gas in one year.
8. State the different methods of energy analysis.
9. How the electrical load and lighting system can be managed for energy efficiency ?
10. Explain Internal Rate of Return (IRR) method of evaluation.

P.T.O.

PART – B

Answer **any one** question from **each** Module. **Each** question carries **20** marks **each**.

Module – I

11. a) List the institutional barriers to increasing energy efficiency.

    b) Explain the general principles of Energy Management and Planning.

OR

12. a) Explain the four types of energy audits to improve energy efficiency of buildings and industries.

    b) Explain energy conservation measures commonly implemented for commercial and industrial facilities.

Module – II

13. a) How are HVAC system works ?

    b) Draw the schematic of a dual duct system.

OR

14. a) A 100 ton chiller has an electrical load of 100.5 kW. Calculate its COP and EER. Also define COP and EER.

    b) Explain the terms relamping, delamping in terms Energy Management Opportunities.

Module – III

15. a) Explain the categories of costs for capital investments and the methods of estimating these costs.

    b) Explain SPP cost analysis. Find the SPP of a heat pump which has an initial cost of 10,000 dollars, an energy savings of 2500 dollars per year and a maintenance cost of 500 dollars per year.

OR

16. a) Explain briefly the application of computers in energy management.

    b) With help of schematic diagram, explain plant topping cycle cogeneration steam system.