

Exam. Code: 0937  
Sub. Code: 6386

1078  
B. Engg. (Electrical & Electronics Engg.)  
7<sup>th</sup> Semester  
EE-702: Energy Management and Auditing

Time allowed: 3 Hours

Max. Marks: 50

**NOTE:** Attempt five questions in all, including Q. No. 1 which is compulsory and selecting atleast two questions from each Unit.

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- I. (a) List the various lighting sources and energy saving measures.  
(b) What is the need for energy management?  
(c) Distinguish between contract demand and billing demand.  
(d) Define 'Payback Period' and 'Net Present Value'.  
(e) Discuss the effects of power factor and harmonics on power quality. (5×2)

UNIT-I

- II. How energy conservation helps in improving the environment? Discuss the present methods for energy conservation measures. List the important features of the Energy Conservation Act, 2001. (10)
- III. (a) Discuss the different phases of energy auditing methodology.  
(b) Write short notes on: -  
(i) Energy balance  
(ii) Energy conservation opportunities (5+5)
- IV. (a) If 100w bulb is left switched on for 2 hours daily and the cost of electricity is Rs. 4/kwh, determine the annual cost of electricity wasted.  
(b) Discuss the different elements of monitoring and targeting system. Also discuss a case study for CUSUM analysis. (5+5)

UNIT-II

- V. Why the efficiency loss occurs in a rewind motor? How do you check the efficacy of rewind motor? What is the best location of capacitor bank for power factor improvement from energy conservation point of view? (10)
- VI. Explain various types of light sources and discuss about the luminous performance characteristics. Also explain the various steps in design of lighting system. (10)
- VII. Write notes on the following: -  
(a) Energy efficient transforms  
(b) Automatic power factor controller (10)

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