

B.E. (Electrical and Electronics Engineering)  
Sixth Semester  
EE-613: Energy Management and Auditing

Time allowed: 3 Hours

Max. Marks: 50

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

x-x-x

- I. Attempt the following:-
- How is economic growth of any country linked to energy conservation?
  - What is the need of energy audit?
  - What are billing components in two-part tariff structure of industrial utility?
  - Write about, the control gears that are used in lightning equipments?
  - Differentiate between conventional and electronic ballast in electric circuit. (5x2)

**UNIT - I**

- II. Discuss The Energy Conservation Act. 2001 and its various features. (10)
- III. Explain in detail various steps in the implementation of energy management in an organization. (10)
- IV. a) Discuss various financial analysis techniques for energy financial management.  
b) What are different elements of energy monitoring and targeting system? (2x5)

**UNIT - II**

- V. a) A unit has two identical 500 kVA transformers each with no load loss of 840 W and full load copper loss of 5700 W. The plant load is 400 kVA. Compare the transformer losses when single transformer is in operation and when both transformers are in parallel operation.  
b) What are total harmonic distortion and its effects on electric system? (2x5)
- VI. Write ten good practices in lightning necessary for energy saving. (10)
- VII. a) Explain Automatic Power Factor Controller.  
b) Explain the role of soft starter in AC induction motor. Write its advantages. (2x5)

x-x-x