

Exam. Code: 0936
Sub. Code: 6643 ✓

2023
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. 1 which is compulsory and selecting two questions from each Unit.

x-x-x

I. Attempt the following:-

- a) State IE rules and regulations followed in energy audit program.
- b) Refer to present scenario, list out the important steps taken by society to reduce global warming.
- c) Explain briefly ROI and IRR.
- d) What do you mean by TOD tariff and power factor tariff?
- e) Explain briefly different types of lamps used in lightning system. (5x2)

UNIT - I

- II. What are the principles of energy management? Also explain the need for managerial skills in energy management. Explain how matching energy usage to requirement can enhance energy efficiency? (10)
- III. a) What do you mean by simple payback period? Calculate simple payback period for a boiler that cost Rs. 75 lakhs to purchase and Rs. 5 lakhs per year on an average to operate and maintain and is expected to save annually Rs. 30 lakhs.
b) Explain the different steps involved in detailed energy audit? Also write the format of report. (2x5)
- IV. a) List down the various steps involved in project management. Explain in detail different project planning techniques.
b) How benchmarking of energy consumption may be useful internally and externally. List five benchmarking parameters followed for either equipment or industrial production. (2x5)

P.T.O.

(2)

UNIT - II

- V. a) What do you mean by loading of motor? Why does efficiency of motor reduce when it operates at lower loading? List down any two steps to improve the operating efficiency of under loaded motors.
b) Explain reactive power, active power, contract demand and maximum demand w.r.t electricity. Define 'Demand Side Management'. And state its features. (2x5)
- VI. What possible improvement measure you would look for in general lighting system? Tabulate the types of luminaries with their gears and controls used in industrial location. (10)
- VII. a) Explain working of soft starter and its advantages over other conventional starters.
b) Write a note on energy efficient lighting controls. (2x5)

x-x-x