

30/5/19 (E)

Exam.Code:0936
Sub. Code: 6989

(21)

1059

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) What do mean by Time of day Tariff?
- b) Give one advantage and limitation of availability based tariff?
- c) What are the advantages of standard and labeling?
- d) Explain the Extended Financing Terms contract and traditional contract.
- e) What is difference between monitoring and targeting?
- f) How does efficiency loss occur in a rewind motor?
- g) What are the benefits of Maximum demand controller?
- h) What do you mean by Total Harmonic Distortion?]
- i) What are the benefits of automatic Power factor controller?
- j) How do you size the capacitor rating required for an induction motor? (10x2)

UNIT - I

II. Write a detailed note on Energy Reforms taken place in India specifying major milestones. Give their impact on general public.

- III. a) Write a detailed note on benchmarking and energy performance.
b) Explain the concept of fuel and energy substitution with examples. (2x5)

- IV. a) List all the requirements of energy action planning?
b) What are the various ways to relate the plant's energy consumption with production? (2x5)

UNIT - II

- V. a) Explain how the following factors affect the motor efficiency:
i) Reducing under loading
ii) Sizing to variable load

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(20)

- b) A 3-phase, 415V, 100kW induction motor is drawing 50kW at a 0.75pf. Calculate the capacitor rating requirements at motor terminals for improving PF to 0.95. Also calculate the reduction in current drawn and kVA reduction, from the point of installation back to the generated side due to the improved PF. (2x5)
- VI. What are different types of retrofits possible for energy efficiency? Explain their application and benefits. (10)
- VII. a) Describe the performance characteristics of commonly used luminaries.
b) Compare the techno-economics of replacing 400 W HPMV lamps with 250 W HPSV, 250 W HPMV with 150 W HPSV and 125 W HPMV with 70 W HPSV lamps for same light output for 5000 hours of annual operation and consider Rs. 5.0 as per unit cost? (2x5)

x-x-x