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18EE754

Seventh Semester B.E. Degree Examination, Dec.2023/Jan.2024 Electrical Energy Conservation & Auditing

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Explain the following sources of energy with examples :
(i) Primary and Secondary Sources. (10 Marks)
(ii) Commercial and Non commercial sources. (10 Marks)
(iii) Renewable and Non Renewable sources. (10 Marks)
- b. Elaborate and write a note on the global energy reserves. (10 Marks)

OR

- 2 a. Explain Energy Conservation and its importance. (10 Marks)
b. Explain Green house effect and climate change. (04 Marks)
c. Explain the ill effects of energy usage on environment, mentioning major Air pollutants and their effects. (06 Marks)

Module-2

- 3 a. Discuss Electricity Billing and Steps taken for maximum demand control. (10 Marks)
b. Write a note on Energy Efficient motors and Soft starters. (10 Marks)

OR

- 4 a. Elaborate on Energy Conservation opportunities in Pumps and Fans. (10 Marks)
b. Discuss Energy Efficient lighting and energy efficient lighting controls. (10 Marks)

Module-3

- 5 a. What is Energy Audit? Briefly explain the types of energy audits. (10 Marks)
b. Write a note on measuring instruments for energy audits. (10 Marks)

OR

- 6 a. Explain the 10 step methodology for Energy Audit. (10 Marks)
b. Write a note on presentation of Energy Audit results with a brief report format. (10 Marks)

Module-4

- 7 a. Explain the distinguishing features of electricity as a commodity. (10 Marks)
b. Explain briefly, the four pillars of market design. (10 Marks)

OR

- 8 a. Briefly explain Ancillary services and its types. (10 Marks)
b. What is Availability based Tariff? What are its effects? (10 Marks)

Module-5

- 9 a. Explain Energy Saving measures in new buildings. (10 Marks)
b. Explain Tariff options for DSM. (10 Marks)

OR

- 10 a. Explain Load management as a DSM strategy. (10 Marks)
b. Write a note on End-use energy conservation. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and/or equations written eg, 42+8 = 50, will be treated as malpractice.