

--	--	--	--	--	--	--	--	--	--

**Seventh Semester B.E. Degree Examination, Dec.2024/Jan.2025**

## Electrical Energy Conservation and 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 briefly the energy sector reforms in India. (06 Marks)
- b. Define the following terms with examples for each:
  - i) Commercial and non commercial energy (06 Marks)
  - ii) Primary and secondary energy. (08 Marks)
- c. What are the issues addressed by the energy conservation Act, 2001? (08 Marks)

**OR**

- 2 a. Discuss the present energy scenario in India. (06 Marks)
- b. Explain the energy conservation techniques used to reduce energy costs. (06 Marks)
- c. Discuss the various components of energy strategies for the future. (08 Marks)

### Module-2

- 3 a. Explain various types of automatic power factor controllers. (07 Marks)
- b. With maximum demand controllers, explain the realization of savings on energy bill. (07 Marks)
- c. Write the advantages of soft starters over conventional starters. (06 Marks)

**OR**

- 4 a. Briefly explain the types of variable speed drives. (07 Marks)
- b. Explain the reduction of losses by using energy efficient motors. (06 Marks)
- c. Explain the types of energy efficient lighting controls. (07 Marks)

### Module-3

- 5 a. Briefly explain the key instruments used for the energy audit. (10 Marks)
- b. Explain in detail the contents of the typical energy audit report. (10 Marks)

**OR**

- 6 a. What is energy Audit? Explain the need for energy audit. (10 Marks)
- b. Give the ten steps methodology for detailed energy audit and explain. (10 Marks)

### Module-4

- 7 a. Define transmission congestion. Explain the importance of congestion management in the deregulated environment. (10 Marks)
- b. Explain briefly the following power sector reforms:
  - i) Framework of Indian power sector.
  - ii) Availability Based Tariff (ABT). (10 Marks)

OR

- 8 a. What are the distinguishing features of electricity as a commodity? (10 Marks)  
b. What are Ancillary services? Explain the types of Ancillary services. (10 Marks)

**Module-5**

- 9 a. Explain the tariff options for demand side management. (10 Marks)  
b. Explain various steps followed in DSM planning and implementation. (10 Marks)

OR

- 10 a. Explain the energy saving measures in New Buildings. (10 Marks)  
b. Explain the methodology of water audit. (10 Marks)

\* \* \* \* \*