

QUESTION BANK (I Scheme)

Course: Energy Conservation and Audit
Course Code: (22525)
Semester: 5I

Course Abbreviation: ECA
Unit Test: I
Program Code: EE

CHAPTER 1: Energy Conservation Basics (08 marks) (CO1)

2 Marks

- 1) List any two functions of BEE and MEDA related to energy conservation.
- 2) Define primary and secondary energy resources with two example of each.
- 3) Define Energy Audit as per Energy Conservation Act, 2001.

4 Marks

- 4) Distinguish between Energy conservation and Energy audit based on activities.

OR

State the difference between energy conservation and energy audit.

- 5) State the needs and benefits of star labelling.
- 6) State salient features of Energy conservation Act-2001.

CHAPTER 2: Energy Conservation in Electrical Machines (14 marks) (CO2)

2 Marks

- 7) List the energy conservation techniques in induction motor.
- 8) State the significant feature of soft starter.
- 9) State the advantages of amorphous core transformer.
- 10) List out the energy conservation equipments suitable for electrical motors.
- 11) Specify any two types of Energy efficient transformers.

4 Marks

- 12) Why energy conservation technique should be adopted in transformer even though its efficiency is mostly more than 90%.
- 13) Explain the energy conservation technique "By improving power quality of I.M."

- 14) Explain when induction motors are run in star condition under 30% load condition, how energy is conserved?
- 15) Identify five and explain energy conservation techniques in transformer by:
(a) Loading sharing (b) Transformer in parallel
- 16) Suggest the energy conservation techniques in following cases: (i) Motor is running with 70% loaded condition. (ii) Motor is continuously loaded at 50%. (iii) Motor runs with 30% loaded condition but sometimes rises to 50% loading condition. (iv) Motor runs continuously under no-load condition.
- 17) Describe variable frequency drive with suitable diagram.
- 18) State the comparison between Energy Efficient motors and conventional motors.
- 19) Epoxy resin transformers are more suitable in hazardous areas. Give reason.

CHAPTER 3: Energy Conservation in Electrical Installation system (16 marks)

(CO3)

2 Marks

- 20) What are the reasons for high technical losses in transmission and distribution system?
- 21) State the advantages of Installing High frequency electronic ballasts in place of conventional ballasts for florescent lamp.
- 22) State technical losses in transmission and distribution systems.

4 Marks

- 23) Explain any four technical losses in transmission and distribution systems.
- 24) Summarize the commercial losses in Electrical Installation System. Also, state EC technique adopted for optimizing distribution.
- 25) Explain the “mitigation of power theft” and “faulty meter replacement” for energy conservation techniques to reduce commercial losses.
- 26) State the working principle and operation of automatic power factor controller used in transmission & distribution system.
- 27) With the help of case study, explain the effect of ‘replacement of Lamps by EEF Lamps’ in an Energy Audit Project (Any two).
- 28) Explain any three types of energy efficient light control devices used in energy conservation project
- 29) Explain the energy conservation technique adopted for a lighting system using the energy efficient luminaries.