

## **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 related to energy conservation.
- 2) List any two functions of MEDA.
- 3) Define primary and secondary energy resources with two example of each.

#### **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 any 4 energy conservation techniques in induction motor.
- 8) State advantages of soft starters over conventional starters.
- 9) State the advantages of amorphous core transformer.

#### **4 Marks**

- 10) Why energy conservation technique should be adopted in transformer even though its efficiency is mostly more than 90%.
- 11) Describe the effect of following on Induction Motor?
  - (i) Voltage Unbalance
  - (ii) Harmonic Distortion
- 12) Explain the energy conservation technique "By improving power quality of I.M."

- 13) Explain when induction motors are run in star condition under 30% load condition, how energy is conserved?
- 14) Energy conservation techniques in transformer by:  
(a) Loading sharing (b) Transformer in parallel
- 15) 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.
- 16) State the comparison between Energy Efficient motors and conventional motors.
- 17) How energy efficiency improvement is achieved in energy efficiency motor for following?  
Power loss area: (i) Iron loss (ii) Stator and Rotor Cu loss
- 18) Epoxy resin transformers are more suitable in hazardous areas. Give reason.

### **CHAPTER 3: Energy Conservation in Electrical Installation system (16 marks)** **(CO3)**

#### **2 Marks**

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

#### **4 Marks**

- 21) Explain scenario of transmission and distribution losses at national level.
- 22) State and explain any four technical losses in transmission and distribution systems.
- 23) State the various commercial losses in transmission & distribution system. Also, state EC technique adopted for optimizing distribution.
- 24) Explain the “mitigation of power theft” and “faulty meter replacement” for energy conservation techniques to reduce commercial losses.
- 25) List any three Energy conservation equipment’s in T & D system. Describe the role of any one equipment in T & D system from the energy conservation point of view.
- 26) State the working principle and operation of automatic power factor controller used in transmission & distribution system.
- 27) Discuss the role of replacement of old lamps by new more energy efficient lamps in the conservation of energy.
- 28) Explain energy conservation method in lighting system by using installation of separate transformer / servo stabilizer.