



PAPER ID-410654

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Subject Code: KEE071

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**B.TECH**  
**(SEM VII) THEORY EXAMINATION 2021-22**  
**ENERGY CONSERVATION & AUDITING**

Time: 3 Hours

Total Marks: 100

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

**SECTION A**

1. Attempt all questions in brief. 2 x 10 = 20
- Describe the significance of Bureau of Energy Efficiency (BEE)
  - What do you mean by Energy Conservation Legislation?
  - Explain Evolution of demand side Management
  - What is energy conservation planning?
  - Draw flow chart of energy audit?
  - List four relevant instruments to carry out energy audit.
  - Define time off day tariff.
  - What are the factors that affect the cooling rate in Air conditioning?
  - What is meant by life cycle costing?
  - What is the effect of Load factor on energy conservation?

**SECTION B**

2. Attempt any three of the following: 10 x 3 = 30
- Why energy conservation is important? Explain different scheme / initiatives started by government to conserve energy.
  - What do you understand by national and international experiences with demand side management? Explain in detail.
  - Explain in detail objectives of energy audit; give various types of energy audits? Give detailed explanation of each.
  - Write in detail different methods of saving energy and increasing the efficiency of Boiler/ blowers/ compressor/ pumps.
  - Describe the working principle of Automatic Power Factor Controller. Its importance. What are the effects of poor power factor on energy efficiency.

**SECTION C**

3. Attempt any one part of the following: 10 x 1 = 10
- Write short note on- Energy Conservation act 2001 & its features.
  - Explain the energy Conservation in small scale and large scale industries.
4. Attempt any one part of the following: 10 x 1 = 10
- Explain DSM Strategy, its implementation and application.
  - What is the difference between DISCOMS, TRANSCO and GENCO how UDAY scheme is beneficial discuss.
5. Attempt any one part of the following: 10 x 1 = 10
- Explain the methodology for detailed Energy Audit Process.
  - Distinguish between Energy conservation and Energy audit based on activities.
6. Attempt any one part of the following: 10 x 1 = 10
- Explain in detail how conservation of energy is done in the following process  
(i) space heating (ii) air-conditioning
  - What are the modes of transfer of heat, Explain the different types of Electric heating methods & method to measure its performance.
7. Attempt any one part of the following: 10 x 1 = 10
- How energy efficiency improvement is achieved in Energy Efficiency Motor for following power loss area: i) Iron ii) Stator and Rotor  $I^2R$  iii) Friction and Windage?
  - Demonstrate the Energy Conservation Technique adopted in Lighting System by using energy efficient luminaries and using light controlled gears.