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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**
- a. Describe the significance of Bureau of Energy Efficiency (BEE)
 - b. What do you mean by Energy Conservation Legislation?
 - c. Explain Evolution of demand side Management
 - d. What is energy conservation planning?
 - e. Draw flow chart of energy audit?
 - f. List four relevant instruments to carry out energy audit.
 - g. Define time off day tariff.
 - h. What are the factors that affect the cooling rate in Air conditioning?
 - i. What is meant by life cycle costing?
 - j. What is the effect of Load factor on energy conservation?

SECTION B

- 2. Attempt any three of the following: 10 x 3 = 30**
- a. Why energy conservation is important. Explain different scheme / initiatives started by government to conserve energy.
 - b. What do you understand by national and international experiences with demand side management? Explain in detail.
 - c. Explain in detail objectives of energy audit; give various types of energy audits? Give detailed explanation of each.
 - d. Write in detail different methods of saving energy and increasing the efficiency of Boiler/ blowers/ compressor/ pumps.
 - e. 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**
- (a) Write short note on- Energy Conservation act 2001 & its features.
 - (b) Explain the energy Conservation in small scale and large scale industries.
- 4. Attempt any one part of the following: 10 x 1 = 10**
- (a) Explain DSM Strategy, its implementation and application.
 - (b) What is the difference between DISCOMS, TRANSCO and GENCO how UDAY scheme is beneficial discusses.
- 5. Attempt any one part of the following: 10 x 1 = 10**
- (a) Explain the methodology for detailed Energy Audit Process.
 - (b) Distinguish between Energy conservation and Energy audit based on activities.
- 6. Attempt any one part of the following: 10 x 1 = 10**
- (a) Explain in detail how conservation of energy is done in the following process
(i) space heating (ii) air-conditioning
 - (b) 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**
- (a) How energy efficiency improvement is achieved in Energy Efficiency Motor for following power loss area: i) Iron ii) Stator and Rotor I²R iii) Friction and Windage?
 - (b) Demonstrate the Energy Conservation Technique adopted in Lighting System by using energy efficient luminaries and using light controlled gears.