

**300802(37)**

**B. E. (Eighth Semester) Examination,  
April-May 2021**

**(Old Scheme)**

**(Mechanical Engg. Branch)**

**ENERGY CONSERVATION & MANAGEMENT**

***Time Allowed : Three hours***

***Maximum Marks : 80***

***Minimum Pass Marks : 28***

***Note : Part (a) is compulsory solve any two part from (b), (c) and (d). Part (a) carries 2 marks and rest of carries 7 marks.***

**Unit-I**

1. (a) List any four portable instruments used in energy auditing.

2

[ 2 ]

- (b) Define energy security. Enlist different strategies to achieve it and discuss role of energy conservation to achieve energy security. 7
- (c) Discuss India's present energy scenario and long term energy scenario. 7
- (d) What is energy intensity? Explain the methodology and barriers in energy auditing. 7

**Unit-II**

2. (a) Mention the significance of NPSH in pumps. 2
- (b) Write the areas for improving the thermal efficiency of the HVAC systems. 7
- (c) Enlist the methods to improve the performance of pumping system. 7
- (d) What are the necessary steps in an energy management programme? 7

**Unit-III**

3. (a) Define : 2

[ 3 ]

- (i) Stoichiometry
- (ii) Refractories
- (b) State and explain energy efficiency measures for industrial furnace. 7
- (c) Explain the opportunities for improving energy efficiency in the boilers. 7
- (d) Explain the function of steam traps, its types and its performance assessment. 7

**Unit-IV**

4. (a) Define Lower Heating Value (LHV) and Higher Heating Value (HHV) of fuel. 2
- (b) Describe the two types thermal storage in detail. 7
- (c) Describe the different applications of energy storage. 7
- (d) Describe any two mechanical energy storage technology in brief. 7

**Unit-V**

5. (a) Define Power Factors. 2
- (b) What are the basic elements of an energy management program? 7
- (c) State the importance of fuel use and heat in industry. 7
- (d) Describe the role of new equipment and technology in industrial energy efficiency. 7