

B.E. Sixth Semester (Mechanical Engineering) (CGS)
10860 : Elective - I : Energy Management : 6 FEME 05

P. Pages : 2

Time : Three Hours



AU - 2746

Max. Marks : 80

- Notes :
1. Answer **three** question from Section A and **three** question from Section B.
 2. Assume suitable data wherever necessary.
 3. Illustrate your answer necessary with the help of neat sketches.

SECTION – A

1. a) What are the different sources of renewable energy? State importance of renewable energy in the present context. 6
- b) Discuss the energy scenario in India in terms of overall production and consumption of petroleum, natural gas, coal and electricity sector. 7

OR

2. a) List down the various principles involved in energy conservation. 6
- b) Define the term 'Energy Management'. Explain its importance. 7
3. a) What is energy audit? Differentiate between preliminary audit and Detailed audit. 6
- b) What kind of energy conservation opportunities are identified after carrying out the energy audit. 7

OR

4. a) Explain various steps involved in detailed energy audit methodology. 6
- b) List down the important energy audit instruments used in energy audit also explain briefly about their function. 7
5. a) What are the different methods for energy conservation in steam generation plant? Discuss any one with neat sketch. 7
- b) What do you mean by equivalent evaporation from and at 100°C. How this term is related with boiler performance, Justify. 7

OR

6. a) What is boiler efficiency? List the parameters to be monitored for calculation of boiler efficiency by direct method. 7
- b) A boiler uses 8kg/kg of fuel for generation of steam. The steam is produced at 12 bar and feed water temperature is 25°C calorific value of coal is 31,000 kJ/kg. Find 7
 - i) Equivalent evaporation
 - ii) Boiler efficiency

SECTION – B

7. a) Discuss the energy conservation needs and objectives. 6
b) List various methods of flow measurement. Explain any two of them. 7

OR

8. a) How proper selection of fans and regulators help in saving electricity. 6
b) Enlist and explain various options available for improving energy efficiency of refrigeration plant. 7
9. a) Enlist most common luminaires and equipment used in domestic circuit and highlight their energy conservation pattern. 7
b) Discuss energy saving tips for a building heating, ventilation and Air-Conditioning system. 7

OR

10. a) Define following terms 7
i) Illuminance
ii) Luminous efficiency
iii) Luminaire
iv) Control Gear
v) Colour Rendering Index
b) What type of things need to look into the building to identify energy saving opportunities? 7
11. a) What is the need for environmental Impact Assessment. 7
b) What is 'Energy conservation act – 2001'. Explain in brief. 7

OR

12. Write short notes on: 14
i) Global warming.
ii) Ozone depletion.
