

Roll No

MEPS-202

M.E./M.Tech., II Semester

Examination, December 2016

Energy Conservation and Management

Time : Three Hours

Maximum Marks : 70

- Note: i) Attempt any five questions.
ii) All questions carry equal marks.
iii) Draw neat diagrams wherever required.

1. a) What is Energy audit? Discuss its types.
b) Define the following terms with examples :
 - i) Energy Monitoring
 - ii) Energy Targeting
 - iii) Energy Accounting
2. a) Draw and discuss Materials Load Energy Balance diagram.
b) Define the following :
 - Irreversibility
 - Energy Efficient Housekeeping
 - Thermal Insulation
3. a) Compare predictive and preventive maintenance.
b) Write short note on thermal energy audit of heating ventilation and air-conditioning.

438

4. a) Define DSM. "DSM programmes can be win-win measures for suppliers and customers". Discuss, considering the benefits and drawbacks.
b) Discuss any three methods in detail for calculating Pay-back period.
5. Mr. Energy Conscious (who lives in East Lansing, MI with an HDD of 7,164) wants to know how many years it will take to recover the cost of installing additional insulation in his attic. He renovated his attic and increased the level of insulation from R-19 to R-30 by adding additional insulation. He has a gas furnace with an AFUE of 0.88 and pays \$0.95/CCF for natural gas. The attic insulation costs \$340 to cover 1,100 sq. ft.
6. a) Define V.S.D. State the features of energy efficient motors.
b) Discuss Energy Conservation in transportation sector especially electric vehicles.
7. a) Define the term co-generation. What are the various electric energy conservation opportunities in buildings especially in domestic gadgets?
b) State energy conservation avenues in sugar and textile industries.
8. Write short note on following (any two) :
 - a) Cost Benefit Risk Analysis
 - b) Energy Conservation Equipments
 - c) Energy Flow Network

439