

GUJARAT TECHNOLOGICAL UNIVERSITY**M. E. - SEMESTER – II • EXAMINATION – SUMMER • 2014****Subject code: 1721107****Date: 25-06-2014****Subject Name: Energy Conservation and Management****Time: 02:30 pm - 05:00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Define Energy management. 07
Explain importance and role of energy management.
- (b) What are the different heat loads? 07
Discuss the factors that influence thermal performance of any building.
- Q.2** (a) Explain following energy audit instruments with line sketches: 07
1. Ultrasonic Flow Meter
2. Lux Meter
- (b) Explain ten step methodologies for detailed energy audit. 07
- OR**
- (b) Describe the need for electric load management. 07
- Q.3** (a) Give short note on co-generation process. 07
- (b) Explain i (1) Energy cost, (2) Power factor, (3) Payback period. 07
- OR**
- Q.3** (a) Discuss waste heat recovery in Economiser and Regenerator. 07
- (b) Explain the application of insulating material for hot as well as cold insulation. 07
- Q.4** (a) Give classification of co-generation cycles. 07
Explain bottoming cycle with neat sketch.
- (b) Give technical tips to conserve energy in case of electric motors and drives. 07
- OR**
- Q.4** (a) How losses occur in electric power supply can be reduced? 07
- (b) Describe energy conservation opportunity for furnace. 07
- Q.5** (a) Explain performance assessment methods for steam traps. 07
- (b) Describe energy conservation opportunity for air compressor used in industry. 07
- OR**
- Q.5** (a) Give a note on automatic power factor controller. 07
- (b) Describe energy conservation opportunity for HVAC system. 07
