Seat No.: _____ Enrolment No._____

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. Explain importance and role of energy management.	**07**
	(b)	What are the different heat loads? Discuss the factors that influence thermal performance of any building.	**07**
Q.2	**(a)**	Explain following energy audit instruments with line sketches: 1. Ultrasonic Flow Meter 2. Lux Meter	**07**
	(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 ï (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. Explain bottoming cycle with neat sketch.	**07**
	(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**

****