

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VIII (NEW) EXAMINATION – WINTER 2018****Subject Code: 2180910****Date: 15/11/2018****Subject Name: Energy Conservation, And Audit****Time: 02:30 PM TO 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.

	MARKS
Q.1 (a) Explain objective of energy management.	03
(b) Explain need of energy audit.	04
(c) Explain various instruments used for energy audit and monitoring of energy saving.	07
Q.2 (a) What is harmonics? Give the causes of harmonics.	03
(b) What are the causes of high transmission and distribution losses?	04
(c) Explain ROI, IRR, NPV and pay back period.	07
OR	
(c) Why energy conservation act is framed? Explain the words “standard and labeling” and “designated consumers” and “ BEE” with reference to this act.	07
Q.3 (a) Explain impact of renewable energy on energy audit recommendations.	03
(b) Explain guidelines for writing energy audit reports.	04
(c) Explain the concept of co-generation and its applications.	07
OR	
Q.3 (a) Compare magnetic ballast and electronics ballast.	03
(b) How variable frequency drive is useful in energy conservation?	04
(c) What are the characteristics of energy efficient motors? Explain in detail.	07
Q.4 (a) Explain scope of energy saving in steam distribution.	03
(b) Explain the procedure to save the energy of a lighting system.	04
(c) Write short note on demand side management.	07
OR	
Q.4 (a) Explain types of pumps.	03
(b) How energy can be saved in cooling tower?	04
(c) What is Automatic power factor controller? Explain in detail.	07
Q.5 (a) Discuss the effect of excess air and waste heat utilization of performance of boiler.	03
(b) Explain various methods of energy conservation in house.	04
(c) Explain indirect method of energy efficiency calculation for furnace.	07
OR	
Q.5 (a) Which are the various applications of blowers.	03
(b) Explain in detail various methods of Energy Conservation in Compressors.	04
(c) Describe various methods of Energy Conservation in Pumps.	07
