

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-VI EXAMINATION – WINTER 2025

Subject Code:3160916

Date:21-11-2025

Subject Name:Energy Conservation

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.
4. Simple and non-programmable scientific calculators are allowed.

	Marks
Q.1 (a) Write down guidelines for writing energy audit report.	03
(b) Explain objective and general principles of Energy management.	04
(c) Discuss various instruments used for energy audit.	07
Q.2 (a) How energy conservation done by demand side management?	03
(b) Discuss energy saving in lighting system.	04
(c) State disadvantages of low power factor. Discuss any one method of Power factor improvements.	07
OR	
(c) Explain the effects of harmonics and improvement methods.	07
Q.3 (a) Discuss components of Cooling Tower.	03
(b) Compare reciprocating and rotary air compressor.	04
(c) Explain energy conservation opportunities in pump and pumping system.	07
OR	
Q.3 (a) List out the types, applications and advantages of blower.	03
(b) Enumerate the energy saving opportunities in cooling towers.	04
(c) Describe “Energy Saving in Compressors & Compressed Air Systems”.	07
Q.4 (a) List factors affecting furnace performance.	03
(b) Write difference between FBC and PFBC boilers.	04
(c) Discuss the sources of waste heat and its potential applications.	07
OR	
Q.4 (a) Write advantages and properties of thermal insulating material.	03
(b) Write down properties of steam utilization.	04
(c) Describe Water treatment and its impact on boiler losses.	07
Q.5 (a) How losses are reduced in Transformer?	03
(b) What are the Advances in boiler technologies.	04
(c) Classify the energy audit & explain the three phases of detailed energy audit.	07
OR	
Q.5 (a) State advantages and application of soft starters.	03
(b) Describe technical aspects of energy efficient motors for energy saving.	04
(c) Classify heat recovery systems and explain any one in detail.	07