

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER- VIII EXAMINATION – SUMMER 2026****Subject Code:2181916****Date:25-05-2026****Subject Name: Energy Conservation and Management****Time: 10:30 AM TO 01:00 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) Define Energy Conservation. Mention its importance.	03
	(b) Explain in brief	04
	(1) Primary and Secondary Energy	
	(2) Low grade and High grade Energy	
	(c) Define the following terms:	07
	(1) CUSUM	(2) ROI
	(3) Monitoring	(4) Net present value
	(5) Internal rate of interest	(6) Cash flow
	(7) Payback period	
Q.2	(a) State the functions of BEE.	03
	(b) Discuss the role of Energy service companies (ESCOs)	04
	(c) State silent features of Energy Conservation Act 2001.	07
	OR	
	(c) Write short note on EMIS- Energy Management Information Systems.	07
Q.3	(a) Define Energy Management and Audit.	03
	(b) List key instruments for energy audit.	04
	(c) Write selection criterion for Refractories.	07
	OR	
Q.3	(a) List commercially viable waste heat recovery devices.	03
	(b) What is heat pump? State application of heat pump.	04
	(c) Discuss Energy Conservation Opportunity in Boiler.	07
Q.4	(a) List the various types of heat losses in furnace.	03
	(b) What are cogeneration plants? Explain the difference between bottoming and topping cycle co-generation plants.	04
	(c) List the suggestions for improving the efficiency in compressed air system.	07
	OR	
Q.4	(a) Classify the heat recovery system.	03
	(b) Give tips for energy savings in thermal utility devices refrigeration system.	04
	(c) Discuss the effect of climate change on environment in detail due to effect of various energy uses.	07
Q.5	(a) State CDM (Clean Development Mechanism) procedure	03
	(b) Write short note on Energy Security.	04
	(c) Give various electricity saving techniques.	07
	OR	
Q.5	(a) Give full form of UNEP, ISCU, WMO, COP, BLY, PCF	03
	(b) State different Application of Refractories	04
	(c) Explain Sensitivity Analysis and List the micro & macro factors.	07
