

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI (NEW) EXAMINATION – SUMMER 2022****Subject Code:3160916****Date:08/06/2022****Subject Name:Energy Conservation****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) What is Energy Audit? Why it is important?	03
	(b) Define General Principles of Energy Management.	04
	(c) Discuss Economics of implementation of energy optimization projects, its constraints, barriers and limitations.	07
Q.2	(a) What do mean of Energy Management Skills?	03
	(b) List out Instruments for Audit and Monitoring Energy and Energy Savings.	04
	(c) Discuss Guidelines for writing energy audit report.	07
OR		
	(c) Discuss Case studies of implemented energy cost optimization projects in electrical utilities as well as thermal utilities.	07
Q.3	(a) Write Importance of parallel operations in power system.	03
	(b) List out the Methods of Reductions of Transformers loss.	04
	(c) Write a short note on “Demand Side management (DSM)”.	07
OR		
Q.3	(a) Define T & D losses.	03
	(b) What do you mean by Load Management?	04
	(c) Write a short note on “Energy efficient Motors”	07
Q.4	(a) List out the Methods of Power factor improvements.	03
	(b) Define Automatic power factor Controllers.	04
	(c) Discuss Case Studies related to Power factor improvement in detail.	07
OR		
Q.4	(a) Define Water treatment and its impact on boiler losses.	03
	(b) What are the Advances in boiler technologies.	04
	(c) Discuss heat recovery boilers with it's Limitations and Constrains.	07
Q.5	(a) List out the Types and classifications of Furnace.	03
	(b) Define Furnaces refractory- types and sections.	04
	(c) Discuss Steam Utilization Properties, distribution and losses & steam trapping,	07
OR		
Q.5	(a) List out the Types and application of Pumps.	03
	(b) Define Energy Saving in Pumps & Pumping Systems.	04
	(c) Write a short note on “Energy Saving in Compressors & Compressed Air Systems”.	07
