

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VIII(NEW) EXAMINATION – SUMMER 2019****Subject Code:2180910****Date:09/05/2019****Subject Name:Energy Conservation, And Audit****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.

		MARKS
Q.1	(a) Discuss pre-audit phase activities.	03
	(b) Discuss advantages and disadvantages of simple payback analysis.	04
	(c) What is LED lamp? Mention advantages and disadvantages of LED.	07
Q.2	(a) How to reduce transformer loss?	03
	(b) List the advantages and disadvantages of synchronous motor VSD system.	04
	(c) Explain the working principle of soft starters with its advantages and application.	07
OR		
	(c) Discuss demand side management.	07
Q.3	(a) What are the advantages of good power factor?	03
	(b) List the barrier and limitations of energy optimization projects.	04
	(c) Explain the guidelines for writing energy audit report.	07
OR		
Q.3	(a) Explain the effect of harmonics and improvement method.	03
	(b) Explain the application of following instruments used for energy audit and monitoring: Water flow meter, Leak detector, Temperature sensor, Speed meter.	04
	(c) Explain the conditions and advantages of parallel operation of transformers and generators.	07
Q.4	(a) Write a short note on reheaters.	03
	(b) Explain deaeration and evaporation feed water treatment.	04
	(c) What is an application of economizer? List out its advantages and design aspects to improve the boiler efficiency.	07
OR		
Q.4	(a) List factors affecting furnace performance.	03
	(b) Describe the factors affecting the fuel economy in furnaces.	04
	(c) Explain the working of Circulating Fluidized Bed Combustion Boilers (CFBCB).	07
Q.5	(a) Explain the performance characteristics of pumps.	03
	(b) Explain the performance of pumps in parallel and series operation.	04
	(c) Describe the methods to improve performance of compressed air system.	07
OR		
Q.5	(a) Enlist the applications of compressed air in industry.	03
	(b) Enumerate the energy saving opportunities in cooling towers.	04
	(c) What is thermal insulation? Write down its advantages and properties of thermal insulating material.	07
