Seat No.: _____ Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VIII EXAMINATION – SUMMER 2020

Subject Code: 2180910 **Date: 29/10/2020**

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)**	What are the various principles of Energy Management?	**03**
	(b)	Explain various constraints and limitations of the energy optimization.	**04**
	(c)	Explain the steps for calculating the efficiency of the boiler in detail.	**07**
Q.2	**(a)**	How can the energy saving be done in any Electrical System? Explain in brief to reduce the losses.	**03**
	(b)	What are the skills required to do energy audit?	**04**
	(c)	Describe the value of capacitance required for power factor improvement with necessary equation and optimize it costing point of view.	**07**
		OR	
	(c)	Explain the energy conservation possibilities in case of Industry having large induction furnaces.	**07**
Q.3	**(a)**	Prepare a questionnaire for the energy audit for an engineering college, at least six.	**03**
	(b)	Write a short note on Energy Conservation Act, 2003.	**04**
	(c)	How is demand side management helpful in energy conservation? Explain in detail.	**07**
		OR	
Q.3	**(a)**	Enlist the various tools used in Energy management.	**03**
	(b)	Explain the role of Management Information System in Energy Conservation for an industry.	**04**
	(c)	How is measurement of harmonics and its mitigation increases energy saving? Explain in detail.	**07**
Q.4	**(a)**	Explain the hot and cold insulators required for thermal system. What is optimum thickness for the insulation?	**03**
	(b)	Write a short note on “Energy saving in pumps”.	**04**
	(c)	Explain the energy conservation and its latest trends in lighting system.	**07**
		OR	
Q.4	**(a)**	Explain lux meter and flue gas analyzer in brief.	**03**
	(b)	Write a short note on “Energy saving in compressors”	**04**
	(c)	Explain the energy conservation and its latest trends in water treatment of thermal system.	**07**
Q.5	**(a)**	Explain power analyzer with necessary connection diagrams and applications.	**03**
	(b)	Write a short note on “steam trapping”	**04**

	(c)	Explain the energy conservation and its latest trends in blowers.	**07**

OR

Q.5	**(a)**	Enlist the various energy conservation methods for thermal power plant.	**03**
	(b)	Write a short note on "Energy saving in cooling towers"	**04**
	(c)	Explain the energy conservation and its latest trends in boilers.	**07**

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