

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-V (NEW) EXAMINATION – WINTER 2020****Subject Code:3150507****Date:22/01/2021****Subject Name:Energy Technology****Time:10:30 AM TO 12:30 PM****Total Marks: 56****Instructions:**

1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

		MARKS
Q.1	(a) Differentiate between conventional & non-conventional Energy sources.	03
	(b) Discuss on world energy futures.	04
	(c) List out all the commercially available waste heat recovery devices. Explain any one device with neat sketch.	07
Q.2	(a) Discuss selection and applications of refractories.	03
	(b) Explain types of Energy Audit.	04
	(c) Explain proximate and ultimate analysis of coal in detail.	07
Q.3	(a) Define steam traps. State the functions of steam traps.	03
	(b) Explain types of insulations and also discuss its applications.	04
	(c) Discuss in detail about energy conservation. Also state its importance.	07
Q.4	(a) Define: (i) Beam Radiation, (ii) Solar Altitude, (iii) Solar Azimuth Angle	03
	(b) What are the advantages and disadvantages of fuel cell?	04
	(c) Explain solar pond briefly. What are the applications of solar pond?	07
Q.5	(a) List all the factors affecting biodigestion.	03
	(b) What are the advantages and disadvantages of concentrating collectors over flat plate collectors?	04
	(c) Categorize different types of fuel cell and describe Molten Carbonate Fuel Cell (MCFC) with neat diagram.	07
Q.6	(a) Define Photosynthesis. What are the conditions necessary for photosynthesis?	03
	(b) Define biomass and list biomass energy resources.	04
	(c) List out various types of instruments for measuring solar radiation and explain any one.	07
Q.7	(a) What are the techniques suggested for maintaining the biogas production?	03
	(b) Enlist various applications of solar energy.	04
	(c) Describe with neat sketch the working of a wind energy system (WECS) with main components.	07
Q.8	(a) State different applications of wind energy.	03
	(b) Describe the main considerations in selecting a site for wind generators.	04
	(c) Describe construction and working of KVIC digester.	07
