Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V (NEW) EXAMINATION – WINTER 2022

Subject Code:3150507 Date:04-01-2023

Subject Name:Energy Technology

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)**	Give your thoughts about energy consumption and world energy future	**03**
	(b)	Differentiate : Conventional and Non-conventional energy, primary and secondary energy resources	**04**
	(c)	Describe flate plate solar collector with neat sketch	**07**
Q.2	**(a)**	Define terms : Energy security and Energy audit	**03**
	(b)	Discuss about commercially viable waste heat recovery devices	**04**
	(c)	Explain application and advantages of various solar collectors	**07**
		OR	
	(c)	Short Note : Solar pond	**07**
Q.3	**(a)**	Define terms: Proximate analysis, ultimate analysis and calorific value	**03**
	(b)	Discuss about Insulation types and its application	**04**
	(c)	Explain about solar energy storage system	**07**
		OR	
Q.3	**(a)**	State various types of fuel cells.	**03**
	(b)	Advantages and disadvantages of fuel cell.	**04**
	(c)	Give applications of fuel cell with explanation.	**07**
Q.4	**(a)**	What are the factors affecting biogas generation?	**03**
	(b)	Describe about energy conservation along with its importance.	**04**
	(c)	Short note : Types of biogas plant	**07**
		OR	
Q.4	**(a)**	Define pyrolysis and explain	**03**
	(b)	List out the main considerations for site selection of wind energy?	**04**
	(c)	Give applications of wind energy	**07**
Q.5	**(a)**	Define: (i) Beam Radiation, (ii) Solar Altitude, (iii) Solar Azimuth Angle	**03**
	(b)	List out applications of solar energy.	**04**
	(c)	Describe construction and working of KVIC digester	**07**
		OR	
Q.5	**(a)**	Define Photosynthesis. What are the conditions necessary for photosynthesis?	**03**
	(b)	State various types of instruments for measuring solar radiation? Explain any one.	**04**
	(c)	Describe Molten Carbonate Fuel Cell (MCFC) with neat diagram.	**07**

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