GUJARAT TECHNOLOGICAL UNIVERSITY
BE- SEMESTER–V EXAMINATION – WINTER 2025

Subject Code:3150507   **Date:17-11-2025**
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)	Explain the term: energy security.	03
	(b)	List the application of solar energy.	04
	(c)	Explain in detail the Molten Carbonate Fuel Cell (MCFC) with neat diagram.	07
Q.2	(a)	How to measure solar radiation?	03
	(b)	Why do energy sectors need reforms?	04
	(c)	Discuss the types, selection and application of Refractories.	07
		OR	
	(c)	Discuss in detail the handling and preparation of fuels.	07
Q.3	(a)	List site selection criteria for the wind turbine installation.	03
	(b)	Explain the energy future of the world.	04
	(c)	Discuss in detail the floating holder biogas plants.	07
		OR	
Q.3	(a)	Explain the applications of wind energy.	03
	(b)	Explain the need for energy conservation.	04
	(c)	Discuss the methods used to maintain the biogas production.	07
Q.4	(a)	Which criteria have to be considered while designing of biogas digestor?	03
	(b)	Discuss the application of fuel cell technologies.	04
	(c)	What is waste heat recovery? List advantages and applications of waste heat recovery.	07
		OR	
Q.4	(a)	Which points need to be considered while selecting site for biogas plants?	03
	(b)	List the advantages and disadvantages of fuel cell technology.	04
	(c)	Explain the flash steam recovery system. And also list other energy-saving potential for steam systems.	07
Q.5	(a)	List the type of electrode used in the fuel cell.	03
	(b)	Explain solar ponds.	04
	(c)	Discuss the basic components of wind energy conservation system.	07
		OR	
Q.5	(a)	Explain the conversion efficiency of fuel cell energy.	03
	(b)	Explain the chemical storage system for solar energy.	04
	(c)	Classify and explain the wind energy conservation system.	07