

GUJARAT TECHNOLOGICAL UNIVERSITY**BE – SEMESTER- VII EXAMINATION-SUMMER 2023****Subject Code: 2170505****Date: 21/06/2023****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) Discuss solar method for hydrogen generation.	03
	(b) List the type of storage systems for solar energy and explain to anyone.	04
	(c) Compare open cycle with closed cycle of Magneto Hydro-Dynamic (MHD) Power Generation.	07
Q.2	(a) Write a short note on the open cycle for power generation from the ocean.	03
	(b) Explain the rank of coal.	04
	(c) Discuss fast breeder reactor for energy generation from nuclear.	07
	OR	
	(c) Explain the preparation of nuclear fuel for power generation.	07
Q.3	(a) Explain energy management.	03
	(b) Brief on the origin of coal.	04
	(c) Discuss in detail the thermal gasification of biomass.	07
	OR	
Q.3	(a) Explain the role of an energy audit.	03
	(b) List the difference between bituminous coals and anthracite coals based on properties.	04
	(c) Discuss in detail the factors affecting biogas generation.	07
Q.4	(a) Discuss the need for hydrogen safety & management.	03
	(b) List out the advantages of coal preparation processing.	04
	(c) Explain liquid-dominated systems used for geothermal energy.	07
	OR	
Q.4	(a) Explain the fossil fuel method for hydrogen production.	03
	(b) List the factors which affect the rate of screening.	04
	(c) How & why is geothermal energy better than other resources? Discuss the application of geothermal energy.	07
Q.5	(a) What is the principle of energy generation from the ocean? List tidal power plant components.	03
	(b) Explain site selection role to use wind power for energy generation.	04
	(c) Explain in brief fossil fuel cell and molten carbonate cell.	07

OR

- Q.5** (a) What is ocean wave energy conversion? List components required for wave energy conversion. **03**
- (b) Write short notes on basic components required for wind energy conversion systems. **04**
- (c) Explain the types of electrodes used for the fuel cell. Correlate effect of electrode material on energy conversion efficiency. **07**
