

Seat No./Enrollment No.: _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BACHELOR OF ENGINEERING – SEMESTER 4 – EXAMINATION – SUMMER 2026

Subject Code: 3141308

Date: 19/05/2026

Subject Name: Environmental Resource management

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.**

- Q.1**
- (a) Define renewable and non-renewable resources with one example each. **03**
 - (b) Explain the concept of water reuse and recycling with an example. **04**
 - (c) Discuss the classification of resources. Highlight challenges in their utilization and exhaustion with real-world examples. **07**
- Q.2**
- (a) State environmental consequences of fossil fuel use. **03**
 - (b) Explain the importance of biodiversity for human survival. **04**
 - (c) Discuss briefly water budget of India **07**
- OR
- Q.2**
- (c) Discuss Briefly two water management techniques used in India. **07**
- Q.3**
- (a) Explain the importance of forests in ecological balance. **03**
 - (b) Explain the working principle of solar energy generation in brief. **04**
 - (c) Compare and evaluate solar, geothermal, and wind energy in terms of generation technique and environmental impact. **07**
- OR
- Q.3**
- (a) List any three reasons for the decline of biodiversity. **03**
 - (b) Evaluate the role of social forestry programs in wildlife and forest conservation. **04**
 - (c) Discuss the role of biomass energy and nuclear energy in achieving sustainable energy goals. **07**
- Q.4**
- (a) Define the concept of doubling time **03**
 - (b) State the basic equation of population dynamics. **04**
 - (c) Discuss the social & environmental consequences of population explosion. **07**
- OR
- Q.4**
- (a) State Malthusian theory of population. **03**
 - (b) Derive the growth rate equation. **04**
 - (c) Analyze the relationship between population explosion and environmental degradation in India. **07**
- Q.5**
- (a) Enlist the Environmental resource management tools. **03**
 - (b) Explain the concept of carbon footprint with examples. **04**

- (c) Evaluate the role of Clean Development Mechanism (CDM) in achieving Sustainable Development Goals (SDGs). **07**

OR

- Q.5** (a) Define sustainable development. **03**
- (b) Highlights the principles & challenges of Sustainable development **04**
- (c) Discuss the role of international and national resource conservation steps in achieving Sustainable Development Goals (SDGs). **07**
