

Enrollment No./Seat No.:

## GUJARAT TECHNOLOGICAL UNIVERSITY

Bachelor of Engineering - SEMESTER - VII EXAMINATION - WINTER 2025

**Subject Code: 3170629**

**Date: 20-11-2025**

**Subject Name: Green Built Environment**

**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.

	<b>Marks</b>
<b>Q.1 (a)</b> What is sustainability? Why is it important for development to be sustainable?	<b>03</b>
<b>(b)</b> Write methods of saving & recycling water in your house.	<b>04</b>
<b>(c)</b> How can indoor environment quality be maintained? What are the various steps that can be taken to ensure the same?	<b>07</b>
<b>Q.2 (a)</b> What are the parameters of checking water quality. How does bad quality affect human health?	<b>03</b>
<b>(b)</b> List the types of Roof & Non-Roof.	<b>04</b>
<b>(c)</b> Write about the various sustainable construction materials and explain how they are advantageous over conventional construction materials.	<b>07</b>

### OR

<b>(c)</b> What will you suggest for maintaining energy efficiency in a new building construction?	<b>07</b>
<b>Q.3 (a)</b> Write about the current water-crisis in our country. List its causes.	<b>03</b>
<b>(b)</b> What are local building regulations? State a few of them.	<b>04</b>
<b>(c)</b> List the causes of Soil Erosion and state why it is harmful with some real life examples. Also list its control measures.	<b>07</b>

### OR

<b>(a)</b> How does natural topography influence building design?	<b>03</b>
<b>(b)</b> What are HCFCs? Why should equipment be HCFC free?	<b>04</b>
<b>(c)</b> Explain the Heat Island effect. List strategies to mitigate it.	<b>07</b>
<b>Q.4 (a)</b> List and state the functions of various Water Efficient Plumbing Fixtures.	<b>03</b>
<b>(b)</b> What are the various alternative constructions materials along with how their use is incorporated in construction.	<b>04</b>
<b>(c)</b> Explain Enhanced Rain Water Harvesting? List its key components.	<b>07</b>

### OR

(a) State the importance of Minimum Energy Performance. **03**

(b) What are certified green products? List a few certification agencies for the same. **04**

(c) List the techniques of Recycling & Reusing of Waste water. **07**

**Q.5** (a) Define Enhanced Energy Performance. List its components. **03**

(b) What are VOCs? Describe Low VOC Materials and their benefits in indoor environments. **04**

(c) Explain in detail the role of alternate water heating systems in reducing energy consumption. **07**

**OR**

(a) List the types of Renewable Energy Systems for Common Area Lighting. **03**

(b) Discuss any 2 case studies which have successfully demonstrated sustainable building practices **04**

(c) Write a note on the Green procurement policy. What are its benefits and challenges? **07**

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