

Enrollment No./Seat No.:

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**Bachelor of Engineering - SEMESTER - V EXAMINATION - WINTER 2025**

**Subject Code: N115AF01**

**Date: 06-12-2025**

**Subject Name: Sustainable Smart City**

**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 the difference between urban & rural area?	<b>03</b>
<b>(b)</b> What do you understand by Sustainable Urban Development?	<b>04</b>
<b>(c)</b> How does quality of life improve in smart city?	<b>07</b>
<b>Q.2 (a)</b> Explain in detail qualities of good urban planner.	<b>03</b>
<b>(b)</b> Write a short note on land use in urban area.	<b>04</b>
<b>(c)</b> Explain in detail various types of urban forms.	<b>07</b>
<b>OR</b>	
<b>(c)</b> What are the challenges in sustainable urban planning?	<b>07</b>
<b>Q.3 (a)</b> Enlist various green technologies which can be adopted for sustainable urban development.	<b>03</b>
<b>(b)</b> What is the Framework in India Related to Urban Governance?	<b>04</b>
<b>(c)</b> Explain in detail principles of smart city planning.	<b>07</b>
<b>OR</b>	
<b>(a)</b> Explain the term:- Green Urban Infrastructure	<b>03</b>
<b>(b)</b> How sustainable urban planning would be beneficial in reducing carbon footprint?	<b>04</b>
<b>(c)</b> Write a short note on scope of sustainable urban planning.	<b>07</b>
<b>Q.4 (a)</b> Explain term: Ecological footprint	<b>03</b>
<b>(b)</b> What are the roles of Urban Local Bodies in India?	<b>04</b>
<b>(c)</b> How can city planners use zoning and transport planning to enhance overall energy efficiency?	<b>07</b>
<b>OR</b>	
<b>(a)</b> Write a short note on green building.	<b>03</b>
<b>(b)</b> How citizens would be helpful in shaping the cities?	<b>04</b>

- (c) Explain the concept of a smart grid and how it contributes to the energy efficiency of a city's services. 07
- Q.5** (a) Enlist various methods of solid waste management. 03
- (b) What is the purpose of an energy performance certificate for a building? 04
- (c) Discuss the role of integrated spatial and transport planning in creating a more energy-efficient city. 07

**OR**

- (a) Explain in detail significance of cleaning public spaces. 03
- (b) Write a short note on Solid waste management in urban area 04
- (c) Propose an energy efficiency retrofit plan for the public lighting and water supply systems of a medium-sized city 07

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