



VIT

Vellore Institute of Technology
CHENNAI

Reg. Number: _____

Continuous Assessment Test(CAT) – I February 2025

Programme	:	B.Tech. Computer Science and Engineering (BCE)	Semester	:	Winter 2024-25
Course Code & Course Title	:	BCSE316L & Design of Smart Cities	Class Number	:	CH2024250502240
Faculty	:	Dr.S.Sandosh	Slot	:	G2+TG2
Duration	:	90 minutes	Max. Mark	:	50

General Instructions:

- Write only your registration number on the question paper in the box provided and do not write other information.
- Use statistical tables supplied from the exam cell as necessary
- Use graph sheets supplied from the exam cell as necessary
- Only non-programmable calculator without storage is permitted

Answer all questions

Q. No	Sub Sec.	Description	Marks
1	a)	Imagine you are part of a team working on the development of a Smart City project for Bengaluru, aimed at enhancing urban living standards through innovative, technology-driven solutions. Identify and list the key metrics used to measure performance of a smart city project for Bengaluru. Explain how these metrics contribute to evaluating the city's overall efficiency and sustainability. [4 Marks]	10
	b)	Discuss in detail about the various complexities in implementing and managing smart city. [6 Marks]	
2	a)	Imagine a city is addressing the challenges of increasing urban heat islands and deteriorating air quality by implementing a smart environmental monitoring system. Due to budget constraints and the need for comprehensive data collection, the city plans to integrate community remote sensing alongside government-installed sensors. As an urban planner for this initiative, propose a design with community remote sensing components for effective environmental monitoring. [8 Marks]	10
	b)	Discuss its crucial role to ensure accurate and actionable insights for city planning. [2 Marks]	

3		Assume, you have been appointed as the chief planner for a rapidly growing urban area that aims to become a model city for the 21st century. Now, prepare a detailed plan in order to design the urban development incorporating its trends. Ensure your plan addresses the areas such as sustainability, inclusivity, technological advancements and public well-being while proposing innovative solutions for current urban challenges.	10
4		“A city is planning a new residential and commercial zone to address population growth. However, the area faces challenges like traffic congestion, air pollution, and limited green spaces.” As an urban planner, recommend a plan to ensure the project aligns with the Principles of Sustainable Urban Planning focusing on sustainability.	10
5		“In the context of modernizing a large-scale transportation network, data is constantly collected from diverse sources, including traffic monitoring sensors, public transportation systems, and interactions with commuters.” Considering the complexity and scale of urban data management, design a robust database system that efficiently performs the data organization with the various key aspects.	10

*****All the best *****