REG.NO.:

VIT
Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

SCHOOL OF COMPUTER SCIENCE AND ENGINEERING
CONTINUOUS ASSESSMENT TEST - I
WINTER SEMESTER 2024-2025

SLOT: D1 + TD1

Programme Name & Branch	: Integrated M. Tech. (MIC & MID), CSE
Course Code and Course Name	: CSI4005 - Augmented Reality and Virtual Reality
Faculty Name(s)	: Prof. Niha K, Prof. Durgesh Kumar, Prof. Somasundaram S K
Class Number(s)	: VL2024250502145, VL2024250502149, VL2024250502154
Date of Examination	: 30-Jan-2025
Exam Duration	: 90 minutes **Maximum Marks:** 50

General instruction(s):

- Answer All Questions
- M - Max mark; CO – Course Outcome; BL – Blooms Taxonomy Level (1 – Remember, 2 – Understand, 3 – Apply, 4 – Analyse, 5 – Evaluate, 6 – Create)
- Course Outcomes

CO1 - Understand the fundamental of AR, VR and Mixed Reality and to design a customized solution
CO3 - Explore the methods used to Visualization, Interaction and Modelling in AR & VR
CO4 - Explore the techniques, technologies and approaches needed for developing AR applications

Q. No	Question	M	CO	BL
1.	a) What are the key benefits and drawbacks of Augmented Reality (AR) and Virtual Reality (VR) technologies?	5	1	2
	b) Highlight the significances of multimodal interaction in enhancing the AR experience. Elaborate the possible ways the users can interact with the system that aids in successful task completion.	5	1	2
2.	You are developing an AR application for a city planning project. The application will allow citizens to visualize proposed urban development plans, such as new parks, buildings, and transportation routes, superimposed onto their real-world environment. i. How would you categorize and visualize different types of urban development data using an AR visualization taxonomy? [5] ii. Distinguish with specific examples of how different physical depth cues pipeline could be used to effectively communicate the impact of proposed developments on the city's landscape and its residents. [5]	10	4	3
3.	Considering the core structural components of an AR system, how would you determine the current state of the physical world and determine the current state of the virtual world? Also, discuss the challenges related to registration for virtual objects, such as occlusions, lighting conditions, and the movement of visitors.	10	4	3
4.	You are developing an AR application for a museum exhibit featuring ancient artifacts. The application will allow visitors to interact with virtual replicas of the artifacts, providing historical context and interactive elements. Describe how you would utilize different AR methods to enhance the AR experience. Discuss the advantages and disadvantages of each method.	10	3	3
5.	a) How do the categories of interaction in the virtual world relate to and influence the user experiences within those environments?	5	3	2
	b) Wireless displays significantly enhance the impact of Augmented Reality in education by fostering collaboration, flexibility, and accessibility – Justify.	5	3	2

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