K. K. Wagh Institute of Engineering Education & Research, Nashik

(An Autonomous Institute From A.Y. 2022-23)

WINTER-2025	
Exam Seat No.:	
Academic Year:2025-2026	Semester:II
Class:FYMCA	Program:MCA
Branch Code:M.C.A.	Pattern:2022
Name of Course:Elective I: C: Augmented Reality and Virtual	Course Code:MCA222003C
Max. Marks:60	Duration:2.30 Hrs.

Instructions: Candidates should read carefully the instructions printed on the Question Paper and on the cover page of the Answer Book, which is provided for their use.

1. This question paper contains ___TWO__page(s).
2. Answer to each new question is to be started on a new page.
3. Assume suitable data wherever required, but justify it.
4. Draw the neat labelled diagrams, wherever necessary.
5. The last columns indicates the Course Outcome and level of Blooms Taxonomy of the Question/sub-question.

		Marks	CO
Question No. 1			
1a)	Define Animation and write any three uses of animation. Also, explain the DDA algorithm for line drawing with a neat diagram.	(6)	CO2
Question No. 2			
2a)	Explain the concept of Augmented Reality. Describe its working principle and explain any three applications of Augmented Reality in simple words.	(6)	CO1
Question No. 3			
3a)	Apply the working of natural feature tracking by detection in Augmented Reality.	(8)	CO4
	OR		
3b)	Apply the method of SLAM (Simultaneous Localization and Mapping.	(8)	CO4
3c)	Apply the marker-less tracking method in Augmented Reality to augment a virtual object in a real-world scene. Explain the process of localization-based augmentation and how feature-based tracking is used.	(8)	CO4
	OR		
3d)	Illustrate the steps involved in marker-less tracking.	(8)	CO4
Question No. 4			
4a)	Illustrate the use of Virtual Reality systems.	(8)	CO3
	OR		
4b)	How would you use the role of human physiology in Virtual Reality.	(8)	CO3
4c)	Demonstrate how the input devices are used in Virtual Reality.	(8)	CO3
	OR		
4d)	Illustrate the input–output interface of a Virtual Reality system.	(8)	CO3
Question No. 5			

5a)	Examine the working of combined Visual, Auditory, and Haptic Devices.	(8)	CO5

OR

5b)	Break down the use of 3D Menu interaction in Virtual Reality.	(8)	CO5
5c)	Outline the use of multiple output models in Virtual Reality systems by analyzing how each model contributes to user interaction and immersive experience.	(8)	CO5

OR

5d)	Categorize the stages involved in the working of a 3D scanner for Virtual Reality applications.	(8)	CO5

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