

PRN No.	
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PAPER CODE	U325-214 BCESE
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May 2025 (ENDSEM) EXAM

TY B. TECH (SEMESTER - II)

**COURSE NAME:**  
Augmented Reality  
Virtual Reality

**Branch:**  
Artificial Intelligence & Data  
Science  
(PATTERN 2020R1)

**COURSE CODE:**  
ADUA32204(B)

Time: [1Hr. 30 Min]

[Max. Marks: 40]

(\*) Instructions to candidates:

- 1) Figures to the right indicate full marks.
- 2) Use of scientific calculator is allowed
- 3) Use suitable data wherever required
- 4) All questions are compulsory. Solve any one sub question from Question 3 and any two sub questions each from Questions 4,5 and 6 respectively.

Q. No.	Question Description	Max. Marks	CO mapped	BT Level
Q.1	a) Explain different components of VR system.	[4]	CO1	Remember
	b) Describe different types of virtual environments.	[4]	CO1	Remember
	c) Compare and contrast AR, VR, and MR technologies	[4]	CO1	Remember
Q2	a) Explain the difference between standalone, PC-based, and mobile-based HMDs in Virtual Reality.	[4]	CO2	Understand
	b) State the working of VR system.	[4]	CO2	Understand
	c) Explain in detail Non-Immersive VR and Fully Immersive VR.	[4]	CO2	Understand
Q3.	a) Describe the VR app development cycle.	[2]	CO3	Understand
	OR			
	b) Write a short note on Blueprint programming language.	[2]	CO3	Understand
Q.4	c) Explain the working principles of Head-Mounted Displays (HMDs) in Virtual Reality. Provide a detailed explanation with examples to demonstrate your understanding.	[4]	CO3	Understand
	a) Discuss any two challenges encountered during VR app development.	[2]	CO4	Understand
Q.4	OR			
	b) Compare and contrast Mobile-AR with Web-AR.	[2]	CO4	Understand

	c) Describe the types of Augmented Reality and their applications.	[4]	CO4	Understand
Q.5	a) What are the different technologies used in iOS and Android device for implementing AR ?	[2]	CO5	Understand
	OR			
	b) Explain Vuforia Engine.	[2]	CO5	Understand
	c) Describe creation of Geo AR experiences with Wikitude.	[4]	CO5	Understand
Q.6)	a) Explain the technology requirements for Mixed Reality.	[2]	CO6	Understand
	OR			
	b) Discuss the security issues associated with AR/VR/MR technologies.	[2]	CO6	Understand
	c) Describe the challenges encountered in computer vision with OpenCV for MR applications.	[4]	CO6	Understand