

PRN No.

PAPER CODE

U315-214C(E)

(AY:2025-26) December 2025 (ENDSEM) EXAM

TY (SEMESTER - I)

**COURSE NAME:**  
AUGMENTED REALITY &  
VIRTUAL REALITY

**Branch: ARTIFICIAL  
INTELLIGENCE & DATA  
SCIENCE**

**COURSE CODE:**  
AD31234C

(T.Y (Pattern 2023))

Time: [1Hr 30 Min]

[Max. Marks: 40]

(\*) Instructions to candidates:

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

Q. No.	Question Description	Max. Marks	CO mapped	BT Level
Q.1	a) Define Immersive Technology and explain taxonomy of AR, VR, and MR.	[4]	CO1	Understand
	b) Compare AR, VR, and MR based on spectrum and level of immersion.	[4]	CO1	Understand
	c) Explain the consequences of excessive use of immersive technologies with real-world examples.	[4]	CO1	Apply
Q2	a) Describe the working principle of a Head Mounted Display (HMD).	[4]	CO2	Understand
	b) Discuss the VR Application Development Cycle and compare it with SDLC.	[4]	CO2	Apply
	c) Explain the evolution of VR technology and its modern collaborative VR applications.	[4]	CO2	Analyze
Q3	a) Briefly enlist & precisely write about templates in Unreal Engine.	[2]	CO3	Understand
	OR			
	b) Write short notes on C# scripting in Unity.	[2]	CO3	Understand
	c) Explain step-by-step process to create a simple classroom simulation in Unity.	[4]	CO3	Apply

Q4	a) Differentiate between Mobile AR and Web AR. OR	[2]	CO4	Understand
	b) Define keypoint detection and describe it's role in AR systems.	[2]	CO4	Understand
	c) Explain the image processing pipeline for AR application development.	[4]	CO4	Apply
Q.5	a) What are the functions of the Vuforia Engine? OR	[2]	CO5	Understand
	b) Discuss the challenges faced with AR application development.	[2]	CO5	Understand
	c) Design an AR application concept for tourism using Vuforia and Unity.	[4]	CO5	Design
Q.6	a) Define Mixed Reality and list its technological requirements. OR	[2]	CO6	Understand
	b) Explain security concerns in MR applications	[2]	CO6	Understand
	c) Describe how AI integration enhances Mixed Reality for digital twin applications.	[4]	CO6	Apply