

JK Lakshmipat University, Jaipur
INSTITUTE OF ENGINEERING AND TECHNOLOGY

End Term Exam, May 2025

BTech VI(DE)

Subject: **Introduction to AR-VR (CS1232)**

Time: 2:00 hours

Roll No.....

Max. Marks: 30

Note: Provide clear, concise, and well-structured answers.

Use bullet points/sketches/short paragraphs where appropriate.

Q. 1	Consider a scenario where you have multiple scenes, and you want to apply a material to a specific part of an object that is not easily accessible. Using the default Blender settings, how can you efficiently select and assign a material to that specific part without manually navigating through the entire object?	6 CO 1
Q. 2	Define the following for Unreal Engine: • Blueprints • Materials • Viewport • Assets • Collision • Sequencer	6 CO 2
Q. 3	A project is given to create a VR-based architectural walkthrough of a modern house using Unreal Engine. The simulation must include realistic lighting, interactive elements (e.g., opening doors, switching lights), and optimization for smooth VR performance. Outline your approach to designing and developing this project, covering aspects like asset import, lighting setup, Blueprint scripting, and VR optimization techniques.	6 CO 3
Q. 4	Suppose you are developing a physics-based puzzle game in Unreal Engine where players manipulate objects using gravity and collision mechanics. Discuss the key challenges you might face, such as real-time physics calculations, performance bottlenecks, and debugging complex interactions. Propose strategies to address these challenges.	6 CO 4
Q. 5	You've been assigned to develop a simple 3D endless runner game using Unreal Engine. The game involves a character automatically running forward while the player controls jumping, sliding, and lateral movement to avoid obstacles, collect power-ups, and achieve high scores. Outline the basic steps you would take to develop this game, considering key components such as: • Procedural level generation • Character movement mechanics (jumping, sliding, side-swiping) • Obstacle and power-up placement • Scoring system and UI feedback • Performance optimization for smooth gameplay	6 CO 5

All the best!