

JK Lakshmipat University, Jaipur
INSTITUTE OF ENGINEERING AND TECHNOLOGY
End Term Exam, April 2024
BCA IV(DE)

Subject: Introduction to AR-VR (CS1232)

Time: 2:00 hours

Roll No.....

Max. Marks: 30

Note: Assume suitable data wherever required and mention it clearly.

Q. 1	Define the following for Unreal Engine: • Blueprints • Materials • Viewport • Assets • Collision • Physics	6 CO 2
Q. 2	A project is given to create an educational interactive simulation for medical students to learn about human anatomy. The simulation needs to be immersive and realistic, allowing users to interact with various organs and systems in the body. Additionally, it should support both desktop and virtual reality (VR) platforms. Outline how you would approach designing and developing this project in Unreal Engine, considering factors such as user interaction, graphical fidelity, performance optimization, and platform compatibility.	6 CO 2
Q. 3	Suppose you are developing a multiplayer first-person shooter (FPS) game set in a post-apocalyptic world. The game needs to support large-scale battles with up to 100 players simultaneously, featuring destructible environments, dynamic weather systems, and realistic weapon mechanics. Discuss the key challenges you would face in developing this project in Unreal Engine, including network replication, server performance optimization, physics simulation, and scalability. Propose strategies to overcome these challenges and deliver a high-quality multiplayer experience.	6 CO 3
Q. 4	You've been assigned to develop a simple 2D platformer game using Unreal Engine. The game involves a character navigating through levels, jumping over obstacles, collecting coins, and avoiding hazards. Your task is to outline the basic steps you would take to develop this game, considering key components such as level design, character movement, mechanics and scoring.	6 CO 4
Q. 5	Consider a scenario where you are leading the development of a virtual architectural visualization project for a real estate company. The project involves creating a detailed 3D model of a residential property, including interior and exterior spaces, furnishings, and landscaping. The client wants the visualization to be photorealistic and interactive, allowing potential buyers to explore the property from different perspectives. Describe your approach to modeling, texturing, lighting, and rendering the scene in Unreal Engine to achieve a lifelike representation of the property. Discuss optimization techniques to ensure smooth performance on various hardware configurations.	6 CO 5

All the best!