

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VII EXAMINATION – SUMMER 2025

Subject Code:3171612

Date:27-05-2025

Subject Name: Virtual and Augment Reality

Time:02:30 PM TO 05:00 PM

Total Marks:70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

	Marks
Q.1	
(a) Define Virtual Reality. Why do we need virtual reality?	03
(b) List out and explain the components of VR.	04
(c) Explain the difference between Virtual Reality and Augmented Reality.	07
Q.2	
(a) What software is used for AR?	03
(b) Draw and explain system structure of Augmented reality.	04
(c) Explain the Primary Features and Present Development on Virtual Reality in detail.	07
OR	
(c) How Movement captures from video based input? Explain in detail.	07
Q.3	
(a) List out the Real Time Application of AR and VR.	03
(b) Discuss the Visual Computation in Virtual Reality.	04
(c) Explain the various interactive techniques in Virtual Reality.	07
OR	
Q.3	
(a) Discuss Collision detection Generic VR system.	03
(b) Explain in detail about scene illumination	04
(c) Describe the purpose of following nodes in VRML (Virtual Reality Modeling Language). Anchor node, Collision node, Group node, Shape node.	07
Q.4	
(a) What is Tracker, Sensor and Digital Glove?	03
(b) Write short note on “Real Time rendering”.	04
(c) Explain Some features of 3D and VR Tools.	07
OR	
Q.4	
(a) Explain Virtual World Space with suitable example.	03
(b) List out the challenges of AR.	04
(c) Differentiate between behavior and Physically based simulation in VR.	07
Q.5	
(a) What is 3D computer graphics and also discuss rendering process.	03
(b) What are the tools for Virtual Reality game developer?	04
(c) Explain the Following:	07
1. Haptic Devices	
2. 3D Menus and 3D Scanner	
OR	
Q.5	
(a) Discuss wireless displays in educational augmented reality applications.	03
(b) What is the application of VR in digital entertainment?	04
(c) Explain Augmented reality methods with suitable examples.	07
