

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – SUMMER 2024****Subject Code: 3171612****Date:01-06-2024****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: a) Mixed Reality b) Augmented Reality c) Virtual Reality.	03
	(b) Explain 2D to 3D conversion in detail.	04
	(c) Explain the various components of the virtual reality system with diagram.	07
Q.2	(a) Write a short note on Virtual Reality advantages.	03
	(b) Explain in detail on 3D clipping with suitable example.	04
	(c) Write down the difference between Virtual Reality and Augmented Reality.	07
	OR	
	(c) List and explain the various algorithms of Shading.	07
Q.3	(a) Write a short note on computer graphics and rendering process.	03
	(b) Explain in detail on the use of Virtual Reality in Tourism.	04
	(c) Explain in detail about VRML (Virtual Reality Modeling Language).	07
	OR	
Q.3	(a) Define a) Scotopic vision b) photopic vision.	03
	(b) Explain collision detection generic Virtual Reality system.	04
	(c) List and explain the various challenges with Augmented Reality.	07
Q.4	(a) Define: a) Flicker b) Touch Receptors c) Optical Distortions.	03
	(b) Write a short note on VR and AR in flight simulation.	04
	(c) Explain in detail the use of Virtual Reality and Augmented Reality in Sports.	07
	OR	
Q.4	(a) List out Entertainment applications of Virtual Reality.	03
	(b) Write a short note on Google Cardboard.	04
	(c) Explain in detail the use of Virtual Reality and Augmented Reality in education.	07

- Q.5 (a)** Define a) Virtual Reality Hardware b) Virtual Reality Software. **03**
- (b)** Explain Virtual Reality and Augmented Reality in Healthcare. **04**
- (c)** Explain in detail the role of eyes, ears and senses in Augmented Reality. **07**

OR

- Q.5 (a)** Define a) RGB Color spaces b) HSV Color spaces. **03**
- (b)** Explain in detail on Augmented Reality methods. **04**
- (c)** Explain in detail the use of AR and VR in the Architecture & design. **07**
