Seat No.: _____   Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–VII (NEW) EXAMINATION – WINTER 2021

Subject Code:3171612   **Date:29/12/2021**
Subject Name:Virtual and Augment Reality
Time:10:30 AM TO 01:00 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)	Explain the features of virtual reality.	03
	(b)	What do you understand by virtual reality? What are differences between virtual reality applications and multimedia applications?	04
	(c)	What is projection? Explain in detail with its type.	07
Q.2	(a)	Explain Google Card Board in detail.	03
	(b)	What is the current trends and state of the art in immersive technologies?	04
	(c)	Explain the various components of virtual reality systems with block diagram.	07

OR

	(c)	What is reflection? Explain its models in detail.	07
Q.3	(a)	What are the benefits/advantages of virtual reality?	03
	(b)	What is 3D computer graphics and also discuss rendering process.	04
	(c)	What is Shading? Explain the various algorithms of it.	07

OR

Q.3	(a)	Explain 3 'I' of virtual reality.	03
	(b)	Explain the various display technologies of Augmented Reality with neat diagram.	04
	(c)	List and explain the various challenges with Augmented Reality.	07
Q.4	(a)	Define: i) Flicker ii) Touch Receptors iii) Optical Distortions	03
	(b)	Explain the following transformations with the help of suitable example: Rotation and Scaling.	04
	(c)	Discuss the use of virtual reality in Automation field.	07

OR

Q.4	(a)	Define: i) Visual Acuity ii) The blind spot iii) Motion parallax cues	03
	(b)	Explain Virtual World Space with suitable example.	04
	(c)	Discuss the use of virtual reality in Medical field.	07

Q.5 **(a)** Explain visual computation in virtual reality. **03**

(b) Describe the purpose of following nodes in VRML (Virtual Reality Modeling Language). Anchor node, Collision node, Group node, Shape node. **04**

(c) Discuss in detail the use of Augmented Reality in military. **07**

OR

Q.5 **(a)** Differentiate virtual reality and augmented reality. **03**

(b) What is flight simulation? Explain in detail. **04**

(c) Discuss in detail the use of Augmented Reality in entertainment field. **07**

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