Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V (NEW) EXAMINATION – WINTER 2023

Subject Code:3150712 Date:07-12-2023

Subject Name: Computer Graphics

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.**

Q.1	**(a)**	Write the differences between Random Scan display and Raster scan Display.	**03**
	(b)	Write the essential application of computer-graphic?	**04**
	(c)	Explain the working of CRT with Suitable diagram.	**07**
Q.2	**(a)**	Explain bitmap method used for character generation.	**03**
	(b)	Write short note on Boundary fill algorithm.	**04**
	(c)	Explain DDA Algorithm with suitable examples.	**07**
		OR	
	(c)	Write an algorithm for bresenham's line drawing algorithm.	**07**
Q.3	**(a)**	Explain 2D Rotation with example	**03**
	(b)	Discuss Specular refection and Phong Model	**04**
	(c)	Explain the midpoint circle drawing algorithm.	**07**
		OR	
Q.3	**(a)**	Discuss window-to-viewport transformation.	**03**
	(b)	Justify Successive scaling are multiplicative.	**04**
	(c)	Explain liang-bersky Line Clipping with example.	**07**
Q.4	**(a)**	What Are The Two Classifications Of Shear Trformation?	**03**
	(b)	Explain 3D Scaling with example.	**04**
	(c)	Explain illumination methods in detail.	**07**
		OR	
Q.4	**(a)**	Explain B-spline curves.	**03**
	(b)	Explain Bezier curve with necessary equations. List all properties of a Bezier curve	**04**
	(c)	Derive transformation matrix for 3D rotation about axis which is parallel to any one of the co-ordinate axis.	**07**
Q.5	**(a)**	Define terms 1. Pixel 2. Resolution 3. Aspect Ratio	**03**
	(b)	Differentiate: Parallel projection vs. Perspective projection	**04**
	(c)	Explain how RGB to CMY color models with proper diagram.	**07**
		OR	
Q.5	**(a)**	Explain the term hue and saturation.	**03**
	(b)	Explain Hermite curve with necessary equations.	**04**
	(c)	Explain Depth-Buffer method.	**07**

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