Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI (NEW) - EXAMINATION – SUMMER 2016

Subject Code:2160703 **Date:17/05/2016**

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.**

Q.1	**(a)**	Explain the working of CRT in detail.	**07**
	(b)	(1) Explain Beam Penetration method. (2) Compare Raster Scan system and Random Scan System.	**07**
Q.2	**(a)**	Explain DDA line drawing algorithm with its advantages and disadvantages.	**07**
	(b)	Explain Scan line fill algorithm. What is the use of active edge list and edge table?	**07**
		OR	
	(b)	List the techniques used for inside-outside test of points and explain any one method in detail.	**07**
Q.3	**(a)**	Define Clipping. Write and explain Cohen-Sutherland line clipping algorithm.	**07**
	(b)	Write a short note on 2D shearing along with X-direction and Y-direction.	**07**
		OR	
Q.3	**(a)**	Explain Sutherland-Hodgeman polygon clipping algorithm.	**07**
	(b)	Perform 45° rotation of a triangle A(0,0), B(1,1) and C(5,2). Find transformed coordinates after rotation , (1) About origin (2) About point P(-1,-1).	**07**
Q.4	**(a)**	What is Bezier Curve? Define properties of Bezier Curve.	**07**
	(b)	Derive the transformation matrix for 3D rotation about a line parallel to principle axis.	**07**
		OR	
Q.4	**(a)**	Show that Two dimensional reflection through X-axis followed by two dimensional reflection through line Y= -X, is equivalent to Pure rotation about origin by 270°.	**07**
	(b)	Explain 3D reflection with respect to selected axis and selected plane.	**07**
Q.5	**(a)**	Write a short note on Back face detection method	**07**
	(b)	Explain RGB color model.	**07**
		OR	
Q.5	**(a)**	What is Parallel Projection? Explain types of Parallel Projection in details.	**07**
	(b)	Explain CMY color model.	**07**

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