Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – I • EXAMINATION – SUMMER • 2014

Subject code: 710204N **Date: 21-06-2014**

Subject Name: Computer Graphics

Time: 02:30 pm - 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.**

Q.1	**(a)**	Explain CRT and LCD in detail.	**07**
	(b)	Explain in detail different Scan conversation methods and compare it.	**07**
Q.2	**(a)**	Explain different Line drawing algorithm and discuss its merits and demerits.	**07**
	(b)	Describe (i) Perspective projections, and (ii) Parallel Projections.	**07**
		OR	
	(b)	Explain Window to View-port Coordinate Transformation.	**07**
Q.3	**(a)**	Explain all character generation methods in brief.	**07**
	(b)	Explain symmetric property used in circle generation algorithm and Write midpoint circle generation algorithm	**07**
		OR	
Q.3	**(a)**	Write midpoint ellipse generation algorithm and explain it with suitable example.	**07**
	(b)	List and explain different Transformations in detail.	**07**
Q.4	**(a)**	Explain scaling. What is differential scaling? Derive the matrix for General Pivot Point Scaling.	**07**
	(b)	List out the methods to check the point is inside or outside in a polygon.	**07**
		OR	
Q.4	**(a)**	Derive All matrix of reflection.	**07**
	(b)	Explain aliasing and anti-aliasing techniques. Describe un-weighted area sampling for anti-aliasing. What are its drawbacks? How are these drawbacks tackled through weighted area sampling?	**07**
Q.5	**(a)**	Describe the basic steps required for line-clipping using Cohen-Sutherland algorithm using region outcodes. Take various scenarios (examples) of lines intersecting different regions; and describe the sequence of clipping to be carried out for each case as per this algorithm.	**07**
	(b)	Describe rendering techniques for shaded images.	**07**
		OR	
Q.5	**(a)**	Differentiate between object space method and image space method of detecting visible surface.	**07**
	(b)	Describe Uniform Non-rational B-Splines.	**07**

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