Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – I • EXAMINATION – WINTER 2012

Subject code: 710204N **Date: 10-01-2013**

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 aliasing and anti-aliasing using unweighted Area Sampling technique.	**07**
	(b)	What do you mean by raster scan display? Compare it with random scan display	**07**
Q.2	**(a)**	Write and explain mid-point ellipse algorithm	**07**
	(b)	Write and Explain Bresenham's line algorithm. Also find out all the points on line having end-points (20,10) and (30,18) using this algorithm.	**07**
		OR	
	(b)	Explain Midpoint Circle Method for Circle generation and also show tracing of this method with example.	**07**
Q.3	**(a)**	Explain the method Cohen-Sutherland line clipping algorithm with example.	**07**
	(b)	Write short note on Point-Source illumination	**07**
		OR	
Q.3	**(a)**	Explain Sutherland-Hodgeman Polygon clipping with example	**07**
	(b)	Explain parallel and perspective projection with suitable example	**07**
Q.4	**(a)**	Explain rotation about an arbitrary axis for 3-D	**07**
	(b)	Find out transformation matrix that transforms the given square ABCD to half its size with center still remaining at the same position, the coordinate of the square are A(1,1),B(3,1),C(3,3),D(1,3) and center at (2,2)	**07**
		OR	
Q.4	**(a)**	Find out final co-ordinates of the polygon bounded by the co ordinates (1,1), (3,4), (5,7), (10,3) when rotated about a point (8,8) by 30° in clockwise direction.	**07**
	(b)	Write a short note on 2D shearing and reflection	**07**
Q.5	**(a)**	Explain the rendering techniques for line drawing.	**07**
	(b)	Explain the window – to-viewport transformation.	**07**
		OR	
Q.5	**(a)**	Explain the rendering techniques for shaded images	**07**
	(b)	Write a note on a Boundary fill algorithm.	**07**

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