Seat No.: _____   *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY
M. E. - SEMESTER – I • EXAMINATION – WINTER • 2014

Subject code: 710204N   **Date: 04-12-2014**
Subject Name: Computer Graphics
Time: 10:30 am - 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 CRT in detail with its merits and demerits	**07**
	(b)	Explain different Scan conversation methods and compare it	**07**
Q.2	**(a)**	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**
	(b)	Write midpoint ellipse generation algorithm. Given input parameters rx=8 and ry = 6 find other points with the help of Midpoint ellipse algorithm	**07**

OR

	(b)	Write midpoint circle generation algorithm with suitable example	**07**
Q.3	**(a)**	Define Clipping. Write and explain Cohen-Sutherland line clipping algorithm.	**07**
	(b)	Explain and compare Boundary fill and Flood fill algorithm	**07**

OR

Q.3	**(a)**	Explain Weiler-Atherton polygon clipping assuming that the clipping window is a rectangle in standard position	**07**
	(b)	Explain different character generation method in detail	**07**
Q.4	**(a)**	List different Transformations and show that the composition of two rotations is additive by concatinating the matrix representation for R(Θ1) • R(Θ2) = R(Θ1 + Θ2)	**07**
	(b)	Explain Window to View-port Coordinate Transformation	**07**

OR

Q.4	**(a)**	Describe Hermite Interpolation	**07**
Q.4	**(b)**	Describe Perspective projections and Parallel Projections	**07**
Q.5	**(a)**	Determine the Bezier blending functions for five control points. Plot each function and label the maximum and minimum values.	**07**
	(b)	Explain i) Back face Detection method ii) Depth buffer method for detection	**07**

OR

Q.5	**(a)**	Explain the classification of Visible surface Detection methods with example.	**07**
	(b)	List basic illumination models, explain all in detail.	**07**

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