Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. 1ST Semester Remedial Examination –July- 2011

Subject Name: Computer Graphics

Subject code: 710204

Date:13/07/2011 **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)**	Draw a diagram of a CRT and label its five major components.	**07**
	(b)	Write difference between Raster Scan and Random scan method	**07**
Q.2	**(a)**	Write an algorithm for Bresenham line Generation which will work for all slopes. Calculate the pixel positions along a straight line between PI (20, 20) and P2 (10, 12).	**07**
	(b)	Write midpoint circle algorithm. Given a circle with radius r =8. Find out points in first quadrant from x = 0 to X=y using mid-point circle drawing algorithm.	**07**
		OR	
	(b)	Write midpoint ellipse generation algorithm. Given input parameters rx=8 and ry = 6 find other points in region 1 with the help of Midpoint ellipse algorithm	**07**
Q.3	**(a)**	List out the methods to check the point is inside or outside in a polygon.	**07**
	(b)	Explain Cohen-Sutherland line clipping algorithm	**07**
		OR	
Q.3	**(a)**	Explain graphics primitives.	**07**
	(b)	Explain all character generation methods in brief and also list out advantages and disadvantages of all the methods	**07**
Q.4	**(a)**	List different Transformations and explain it in detail.	**07**
	(b)	Explain scaling. What is differential scaling? Derive the matrix for General Pivot Point Scaling.	**07**
		OR	
Q.4	**(a)**	Derive All matrix of reflection	**07**
	(b)	Derive the matrix for Rotation of an object at an arbitrary Point.	**07**
Q.5	**(a)**	Explain with example transformation from world to viewing coordinate.	**07**
	(b)	Differentiate parallel and perspective projection.	**07**
		OR	
Q.5	**(a)**	Explain Back face detection.	**07**
	(b)	Differentiate between object space method and image space method of detecting visible surface.	**07**

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