Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B E Sem-VI Examination May 2011

Subject code: 160703 **Subject Name: Computer Graphics**

Date:19/05/2011 **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)**	(i) Explain the working of Cathode Ray tube.	**04**
		(ii) For what purpose winding number method is used? What is a winding number?	**03**
	(b)	Explain boundary fill and flood fill for polygon filling.	**07**
Q.2	**(a)**	Explain the term region codes. Write the steps of Cohen –Sutherland line clipping algorithm.	**07**
	(b)	(i) Write the differences between Random Scan display and Raster scan display	**04**
		(ii) Explain perspective projection in 3D display methods.	**03**
		OR	
	(b)	List the properties of Bazier curves.	**07**
Q.3	**(a)**	Explain three methods of character generation.	**07**
	(b)	(i) Explain shadow mask technique and explain how does it differ from beam penetration technique?	**04**
		(ii) Explain scaling in 2D Transformations	**03**
		OR	
Q.3	**(a)**	Write basic principle of Bresenham's line algorithm and write Bresenham's line algorithm.	**07**
	(b)	(i) Define the term (a) Antialiasing, (b) anchoring	**04**
		(ii) Which two types of sensors are used in digital cameras?	**03**
Q.4	**(a)**	Explain and write Liang Bersky line clipping algorithm.	**07**
	(b)	Explain the properties of B-spline curve.	**07**
		OR	
Q.4	**(a)**	Explain NLN clipping algorithm.	**07**
	(b)	(i) Explain reflection with respect to any plane in 3D transformations.	**04**
		(ii) Explain working principle of scanner.	**03**
Q.5	**(a)**	Which is the simplest and commonly used image space approach to eliminate hidden surfaces? Explain.	**07**
	(b)	(i) Explain the term hue and saturation	**04**
		(ii) How coordinate values of selected screen position is determined in touch screens?	**03**
		OR	
Q.5	**(a)**	Explain ambient light and diffuse illumination.	**07**
	(b)	(i) List advantages and disadvantages plasma panel display	**04**
		(ii) Explain three types of axonometric projection in 3D.	**03**

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