Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA – SEMESTER -IV • EXAMINATION – WINTER 2015

Subject Code: 2640008 **Date: 09/12/2015**

Subject Name: Computer Graphics (CG) Elective - I

Time:10.30 a.m. To 01.00 p.m. **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) Write short note on Random Scan Display.	**04**
		(ii) Write acronym for the following: DVST, PHIGS and GKS.	**03**
	(b)	List types of input devices. Explain Data Glove and Digitizers in detail.	**07**
Q.2	**(a)**	Explain Digital Differential Analyzer (DDA) line drawing algorithm.	**07**
	(b)	List and explain various application areas of computer graphics.	**07**
		OR	
	(b)	Explain Bresenham's Line Drawing algorithm.	**07**
Q.3	**(a)**	Define Dimensional translation. Explain three dimensional translation with appropriate example.	**07**
	(b)	Write a short note on CRT. Explain its Design and Operational Structure with figure.	**07**
		OR	
Q.3	**(a)**	Explain Boundary Fill algorithm. Also differentiate between Boundary Fill and Flood Fill algorithm.	**07**
	(b)	List types of Flat Panel Display. Explain each category in brief.	**07**
Q.4	**(a)**	Define Antialiasing. List various types of antialiasing and explain each in brief.	**07**
	(b)	List and explain Line attributes and its function. Also list types of line joins.	**07**
		OR	
Q.4	**(a)**	Define Projection Reference Point. Explain Perspective Projection in detail.	**07**
	(b)	Explain and Derive general three dimensional rotation of an object for an arbitrary axis.	**07**
Q.5	**(a)**	Define Depth Cueing and Explain Transformation from World to Viewing Coordinates.	**07**
	(b)	Explain Sutherland-Hodgman polygon clipping algorithm.	**07**
		OR	
Q.5	**(a)**	Explain Liang-Barsky line clipping algorithm with example.	**07**
	(b)	Explain in detail: 3D viewing pipeline with all its steps.	**07**

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