Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE – SEMESTER – VI (OLD).EXAMINATION – WINTER 2016

Subject Code: 160703 **Date: 22/10/2016**

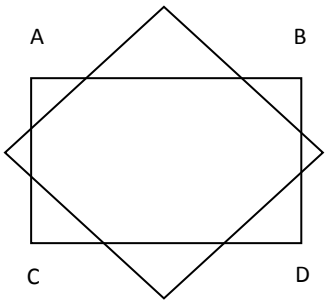
Subject Name: Computer Graphics

Time: 10:30 AM to 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 scan line fill algorithm. What is the use of edge table and active edge list?	**07**
	(b)	1. Explain beam penetration method.	**03**
		2. How long it would take to load a 640 x 400 frame buffer with 12 bits per pixel, If 105 bits can be transferred per second?	**02**
		3. Define: Aspect Ratio and Persistence	**02**
Q.2	**(a)**	Explain working of Cathod Ray Tube with diagram.	**07**
	(b)	Give advantages and disadvantages of DDA algorithm. Draw a line from (0,0) to (8,4) using DDA algorithm.	**07**
		OR	
	(b)	Discuss midpoint circle algorithm with example.	**07**
Q.3	**(a)**	Prove that two successive 2D rotations about origin are additive.	**07**
	(b)	Explain Cohen Sutherland line clipping algorithm.	**07**
		OR	
Q.3	**(a)**	Consider line AB with coordinates of the line A(2, 3) and B(4, 5) in the coordinate plane. Perform reflection of this line about origin and draw the same.	**07**
	(b)	Write the Sutherland – Hodgeman polygon clipping algorithm. Using it clip the given polygon against the clipping window ABCD.	**07**



Q.4	**(a)**	Write a short note on B-Spline curve.	**07**
	(b)	What is Parallel Projection? Explain in details types of Parallel Projection.	**07**
		OR	
Q.4	**(a)**	Compare parallel and perspective projection for 3D display.	**07**
	(b)	Explain 3D Rotation in detail.	**07**
Q.5	**(a)**	Explain different types of reflections form object surface.	**07**
	(b)	Write a short note on HSV color model.	**07**
		OR	
Q.5	**(a)**	Explain Z buffer algorithm for hidden surface removal.	**07**
	(b)	Write a short note on RGB color model.	**07**

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