Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V (NEW) EXAMINATION – SUMMER 2019

Subject Code: 2151603 Date: 31/05/2019

Subject Name: Computer Grapshics

Time: 02:30 PM TO 05:00 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)**	Define: 1) Refresh Buffer 2) Pixel 3) Bitmap	**[3]**
	(b)	Write short note on DVST	**[4]**
	(c)	Explain different techniques for producing color displays with a CRT.	**[7]**
Q-2	**(a)**	Explain in-line arrangement electron gun in shadow mask method.	**[3]**
	(b)	Explain in brief coordinate representation.	**[4]**
	(c)	Write a brief note Emissive displays.	**[7]**
		or	
	(c)	Derive all formulas to scan convert a line using Mid Point line drawing algorithm. Write a function midline(x1, y1, x2, y2) which draws a dotted line between (x1, y1) and (x2, y2).	**[7]**
Q-3	**(a)**	What is inside-outside test? List out the method for inside-outside test.	**[3]**
	(b)	How point and line generated in graphics system? Explain in short.	**[4]**
	(c)	Explain Mid-point circle generation algorithm with example	**[7]**
		OR	
Q-3	**(a)**	Write short note on Antialiasing.	**[3]**
	(b)	What are the problem occur with line width attribute? How to solve it?	**[4]**
	(c)	Explain NLN line clipping algorithm with proper example(s).	**[7]**
Q-4	**(a)**	List and explain character attributes with example.	**[3]**
	(b)	Write a short note on Viewing Pipeline.	**[4]**
	(c)	Explain in brief Sutherland Hodgeman polygon clipping algorithm.	**[7]**
		OR	
Q-4	**(a)**	Explain non zero winding rule.	**[3]**
	(b)	Explain Hermite curve with necessary equations	**[4]**
	(c)	Explain B-spline curves and surfaces	**[7]**
Q-5	**(a)**	List the properties of Bezier curves	**[3]**
	(b)	Explain back face detection in details.	**[4]**
	(c)	What is scaling transformation? Prove that two scaling transformation commute that is S1S2 = S2S1.	**[7]**
		OR	
Q-5	**(a)**	What is ambient light and Diffuse illumination	**[3]**
	(b)	What is Geometric Transformation? List out all two dimensional geometric transformation? And explain any one in details.	**[4]**
	(c)	Explain z-buffer visible surface determination algorithm.	**[7]**

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