Seat No.: _____   Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER– VI (Old) EXAMINATION – WINTER 2019
Subject Code: 160703   **Date: 04/12/2019**
Subject Name: Computer Graphics
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)**	Discuss any five computer graphics applications.	**07**
	(b)	Explain working of CRT in detail with diagram	**07**
Q.2	**(a)**	Why touch panels are used? Explain working of optical touch panel, electrical touch panel and acoustical touch panel	**07**
	(b)	Explain refresh operation of video controller in raster-scan systems.	**07**
		OR	
	(b)	Find intermediate points of line from (6,6) to (14,10) using DDA line drawing algorithm. Which are limitations of DDA line drawing algorithm?	**07**
Q.3	**(a)**	What do you mean by inside-outside test? Explain Odd parity rule and Non-zero winding number rule in detail.	**07**
	(b)	Write and explain mid point circle drawing algorithm.	**07**
		OR	
Q.3	**(a)**	Explain any two methods of character generation.	**07**
	(b)	Apply following transformation to a triangle with coordinates A(2,5) , B(7,10) and C(10,2) (i) Translate original by 3 units in x direction and 4 units in y direction. (ii) Scale original triangle by 1.5 unit in x-direction and 2 unit in y direction. (iii) Rotate the original triangle by 45^0 about origin in clock wise direction	**07**
Q.4	**(a)**	Why window to view port transformation is required? Explain this transformation in detail.	**07**
	(b)	Explain Liang Barsky Line Clipping Algorithm with example	**07**
		OR	
Q.4	**(a)**	Explain Bezier curves and surfaces.	**07**
	(b)	Explain 3D parallel projections	**07**
Q.5	**(a)**	Explain RGB and YIQ color models	**07**
	(b)	What is polygon clipping? Explain Sutherland Hodgeman Polygon clipping with example.	**07**
		OR	
Q.5	**(a)**	Explain following illumination models: ambient light and diffuse refection	**07**
	(b)	What do you mean by composite transformation? Explain 3D Reflection and Shears transformation in detail.	**07**

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