PRN:		Course Code :	BCA206

Second Year **BCA** End Semester Examination Summer 2023

Computer Graphics

Day and Date: Saturday, 17/06/23 Max Marks: **100**

Time : 2:00 to 5:00 pm Duration: **03** hrs

Instructions: All questions are compulsory. Draw diagrams wherever necessary

			Marks	Bloom's Level	CO
Q.1		**Attempt the following**			
	a)	Illustrate raster scan display device and write its advantages and disadvantages.	08	L4	CO1
	b)	Which are the applications and software of computer graphics explain them.	08	L1	CO1
		OR			
	b)	Explain the following graphics primitives: a) Pixel b) Resolution c) Aspect Ratio d) Frame Buffer	08	L2	CO1
Q.2		**Attempt the following**			
	a)	With the help of diagrams explain orthographic projections.	08	L2	CO2
	b)	Explain with the help of diagram rotation about arbitrary access in space.	08	L2	CO2
		OR			
	b)	Scale the triangle A(2,5), B(7,10) and C(10,2) by 2 units in x-direction and 2 units in y-direction to calculate the new co-coordinates of vertices of triangle after scaling. Given a line segment with starting point as (0,0) and ending point as(4,4). Apply 30-degree rotation anticlockwise direction on the line segment and find out the new coordinates of the line.	08	L3	CO2
Q.3		**Attempt any two from the following**			
	a)	Demonstrate the working of Frame Buffer.	08	L2	CO1
	b)	Summarize the fundamentals of antialiasing.	08	L2	CO1
	c)	Find all the intermediate points lying on the line whose endpoint coordinates are (9,18) and (14,22) by Bresenham's line drawing algorithm.	08	L3	CO1
Q.4		**Attempt any two from the following**			
	a)	Explain Cohen-Sutherland Algorithm with diagram. How to test the trivial acceptance and rejection of line ?	08	L1	CO4
	b)	Calculate Scaling factor Sx and Sy and also find out value of point on the viewport if window coordinates are : Xwmin = 20, Xwmax = 80, Ywmin =40 , Ywmax = 80. Viewport coordinates are : Xvmin = 30, Xvmax = 60, Yvmin =40 , Yvmax = 60. Cordinates of point on window are (30,80).	08	L4	CO4
	c)	Explain clipping technique and point clipping with the help of appropriate diagrams.	08	L2	CO4

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Q.5	**Attempt any Two of the following**				
	a)	Implement Warnock area subdivision algorithm with proper diagrams.	09	L3	CO3
	b)	Evaluate equations of parametric representation of curve.	09	L4	CO3
	c)	Write about cubic spline curve and derive their equations.	09	L4	CO3
Q.6	**Attempt any Two of the following**				
	a)	Classify motion control methods based on different information.	09	L2	CO1
	b)	Define key frame. Discuss key frame animation. Mention its advantages and disadvantages.	09	L1	CO1
	c)	Explain warping techniques.	09	L2	CO1

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