Reg. No. : | | | | | | | | | | | | |

Question Paper Code: R5201

B.E./B.Tech. DEGREE EXAMINATION, NOV 2025

Fifth Semester

Computer Science and Engineering

R21UCS501-GRAPHICS AND MULTIMEDIA

(Regulation R2021)

Duration: Three hours | Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1.	Digitize the line with end points (0, 0) and (4, 6) using DDA algorithm.	CO2- App
2.	Difference between DDA and Bresenham's Algorithm.	CO2- App
3.	Show that reflection is equivalent to 180 ^{o} rotation	CO1- U
4.	What is composite Transformation?	CO1- U
5.	Differentiate interpolation and approximation spline.	CO1- U
6.	Construct a 3D viewing pipeline.	CO1- U
7.	What are the 3 components of illumination?	CO1- U
8.	Classify the types of reflection of incident light.	CO1- U
9.	Define MIDI.	CO1- U
10.	Show the basic objects of multimedia.	CO1- U

PART – B (5 x 16= 80 Marks)

11.	(a)	Use and explain the DDA line algorithm to digitize the line with end points (2, 3) & (12, 8).	CO2- App	(16)
		Or		
	(b)	Use and explain the Brenham's line algorithm to digitize the line with end points (35,40) & (43,45).	CO2- App	(16)

12.	(a)	Use the concept of 2D Transformation to Translate a polygon with coordinates A(2,5), B(7,10), C(0,2) by 3 units and 4 unit along x and y axis respectively .also, perform rotation by 180 degree anticlockwise direction.	CO2- App	(16)
		Or		
	(b)	Use the Cohen Sutherland algorithm to clip line p1(70, 20) and p2(100,10) against a window lower left-hand corner (50,10) and upper right-hand corner (80,40).	CO2- App	(16)
13.	(a)	Describe on the following visible surface detection methods.	CO1- U	(8)
		i) Depth –Buffer method		(8)
		ii) Back face detection		
		Or		
	(b)	List the properties of the Bezier Curve and also explain Bezier techniques of generating curves?	CO1- U	(16)
14.	(a)	(i) Compare and contrast between the RGB and CMY Color Models?	CO1- U	(8)
		(ii) Summarize about CIE Color model. What are its advantages?		(8)
		Or		
	(b)	Explain in detail about Halftone approximation and Dithering techniques in detail.	CO1- U	(16)
15.	(a)	Explain in details about Virtual reality concepts in graphics.	CO1- U	(16)
		Or		
	(b)	Explain in detail about various compression technique in detail.	CO1- U	(16)