R18

Code No: 155AM

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year I Semester Examinations, January/February - 2023

COMPUTER GRAPHICS

(Common to CSE, IT, CSIT, CSE(AIML), CSE(DS))

Time: 3 Hours **Max. Marks: 75**

Note: i) Question paper consists of Part A, Part B.
ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.
iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A

(25 Marks)

1.a)	Explain applications for large screen displays.	[2]
b)	Write a short note on video-display device.	[3]
c)	What is viewing functions?	[2]
d)	Explain the 2 D transformation matrix for Translation.	[3]
e)	What is the role of parametric functions in curve generation?	[2]
f)	Write an algorithm for the generation of B-spline?	[3]
g)	Derive the transformation matrix for rotation about y-axis in 3D.	[2]
h)	Derive the matrix form for the Translation operation in 3-D graphics.	[3]
i)	Write about depth-sort algorithm.	[2]
j)	What are the steps in design of animation sequence?	[3]

PART – B

(50 Marks)

2.a)	What are the steps involved in DDA algorithm for line drawing.	
b)	Write a short note on boundary-fill algorithm.	[5+5]
	OR	
3.a)	Briefly explain about mid-point ellipse algorithms with example.	
b)	Discuss about raster-scan systems.	[5+5]
4.a)	Describe the Cohen-Sutherland algorithm.	
b)	What is reflection? Discuss with example?	[5+5]
	OR	
5.a)	Explain the stages in viewing pipeline in 2-D graphics.	
b)	Derive mathematically the transformation that rotates an object point 0^0 anti-clockwise about the origin. What the matrix representation for this rotation.	[5+5]
6.a)	Write a short note on Hermite curve.	
b)	Discuss about quadric surfaces.	[5+5]
	OR	
7.a)	Write a short note on Bezier curve.	
b)	Discuss about polygon rendering methods.	[5+5]

8.a) Derive the matrix form for Rotation in 3-D graphics.
b) Explain about the approaches followed for clipping in 3-D space. [5+5]

OR

9.a) Briefly explain about 3-D composite transformations.
b) Write a short note on shear transformations in 3-D. [5+5]

10.a) Discuss about the graphical languages followed to achieve animation.
b) Explain in detail about depth-buffer algorithm. [5+5]

OR

11.a) Describe linear list notation of animation languages.
b) Write a short note on BSP-trees. [5+5]

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