Code No: 135BY

R16

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year I Semester Examinations, December - 2019

COMPUTER GRAPHICS

(Common to CE, CSE, IT)

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

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A

(25 Marks)

1.a)	List out the input devices.		[2]
b)	Differentiate between raster scan system and random scan system.		[3]
c)	Distinguish between window port and viewport.		[2]
d)	Write a short note on viewing transformation.		[3]
e)	Write a short note on polygon surfaces.		[2]
f)	What is meant by composite transformations?		[3]
g)	What are binary-space partitioning trees?		[2]
h)	Write a short note on boundary representation of solids.		[3]
i)	What is meant by animation?		[2]
j)	What is raster animation?		[3]

PART – B

(50 Marks)

2.a)	Generate all raster points on the line segments, if two end points are given as (10,20) and (18,30) using the Bresen-ham's line drawing algorithm for $\|m\|>1$ where m is slope of the Line ?	
b)	Write a boundary-fill procedure to fill an 8-connected region.	[5+5]
	OR	
3.a)	Describe about direct view storage tube with neat sketch.	
b)	What are the steps involved in midpoint circle algorithm?	[5+5]
4.	Explain Sutherland Hodgeman polygon clipping algorithm. Explain the disadvantages of it and how to rectify this disadvantages?	[10]
	OR	
5.	Give the 2 D transformation matrix for the following: a) Translation b) Rotation c) Scaling	[10]

6.a) Derive the Basis Matrix for Bezier curve.
b) Discuss the role of parametric functions in curve generation. [5+5]

OR

7.a) Derive the matrix form for reflection in 3-D graphics.
b) Discuss briefly about 3-D composite transformations. [5+5]

8.a) Explain the procedure followed for back face detection.
b) Write a short note on z-buffer algorithm. [5+5]

OR

9.a) Describe the classification of visible surface detection method.
b) Explain about the goura. [5+5]

10.a) Explain various kinds of input devices used for computer animation.
b) Write a short note on stage action rule of animations. [5+5]

OR

11.a) Discuss the characteristics of key frame animation.
b) Describe the problem of temporal aliasing. [5+5]

---ooOoo---