Registration No :

Total Number of Pages : 01

M.Tech.
P2CTCC01

2ⁿᵈ Semester Regular / Back Examination 2017-18
COMPUTER GRAPHICS
BRANCH : COMPUTER ENGG, COMPUTER SCIENCE,
COMPUTER SCIENCE AND ENGG, COMPUTER SCIENCE AND TECH.
Time : 3 Hours
Max Marks : 100
Q.CODE : C631
Answer Question No.1 which is compulsory and any FOUR from the rest.
The figures in the right hand margin indicate marks.
Answer all parts of a question at a place.

Q1		Answer the following questions: *Short answer type*	**(2 x 10)**
	a)	What is aspect ratio?	
	b)	Draw the diagram of a DVST.	
	c)	What is the difference between DDA and Bresenhams Line drawing algorithm?	
	d)	What is aliasing and anti aliasing?	
	e)	What are the properties of a convex polygone?	
	f)	What is isometric projection?	
	g)	Draw the taxonomy of Projection.	
	h)	What is the difference between Cartesian coordinate and HCS.?	
	i)	What is Ray tracing methods?	
	j)	What is half toning?	

Q2	**a)**	Describe a raster scan system with diagram.	**(10)**
	b)	Consider Three different raster systems with resolution of (640×480), (1280×1024) & (2560×2048).What size of frame buffer (in bytes) is needed for each of these systems to store 12 bits per pixel?	**(10)**

Q3	**a)**	Draw a line (20, 10), (30, 18) by using Bresenham's line drawing algorithms.	**(10)**
	b)	Draw a circle of radius 5 and center (2, 2) by using Bresenham's circle drawing algorithm.	**(10)**

Q4	**a)**	A rectangle ABCD whose coordinates are A(1,1),B(4,1),C(4,4),D(1,4) and the window coordinates are (2,2),(5,2),(5,5),(2,5) and the given viewport location is (0.5,0),(1,0),(1,0.5),(0.5,0.5).Calculate the viewing transformation matrix.	**(10)**
	b)	How can you process a simple polygon into monotone regions?	**(10)**

Q5	**a)**	A square consists of vertices A(0,0),B(0,1),C(1,1),D(1,0).after the translation, C is found to be at the new point (6,7).Determine the new location of other vertices.,	**(10)**
	b)	Derive the general transformation of parallel projection onto the XY-plane in the direction of projection d=aI+bJ+cK .	**(10)**

Q6	**a)**	Find the transformation matrix for the refletion about the line Y=X.	**(10)**
	b)	Perform a 45 degree rotation of a triangle A (0, 0),B(1, 1),C (5, 2).about Point the P (-1,-1).	**(10)**

Q7	**a)**	Describe Painters algorithm.	**(10)**
	b)	Describe Gouraud Shading algorithm with its advantages and disadvantages.	**(10)**