## B.E. (with Credits)-Regular-Semester 2012-Computer Technology Sem VII CT - Computer Graphics

P. Pages : 2 Time : Three Hours			GUG/W/16/6       * 4 6 6 6 *       Max. Mark	<b>V/16/6545</b> . Marks : 80	
	Notes	: 1. 2. 3. 4.	All questions carry equal marks. Illustrate your answers wherever necessary with the help of neat sketches. Due credit will be given to neatness and adequate dimensions. Assume suitable data wherever necessary.		
1.		Explain	the various graphics input and output devices.	16	
			OR		
2.	a)	Explain	the working of CRT with well labelled diagram.	8	
	b)	Explain	cell and run length encoding.	8	
3.	a)	Rasteriz algorith	te a line for the points (0, 0) and (-8, -4) using DDA (Digital Differential Analyzer m)	8	
	b)	Define	Rasterization and scan conversion along with features for a line.	8	
			OR		
4.	a)	A polyg detailed	condefined by the vertices $A(4, 2) B(9, 2) C(9, 8) D(1, 8)$ and $E(1, 5)$ show the working of algo. using seed fill algorithm.	8	
	b)	A polyg algorith	gon defined by the vertices $P_1(1, 4) P_2(4, 8) P_3(6, 1)$ and $P_4(9, 4)$ using edge flag m.	8	
5.	a)	Explain	segment table and write an algorithm for creating and closing a segment.	8	
	b)	Explain	display file Interpreter.	8	
			OR		

Solve the following figures by using Mov and LINE commands. (2, 2) (1, 2)(0.5, 1) (1, 1) (0, 1) (0, 2) (2, 1) (1, 0.5)(0, 1) (0, 0.5)(2, 0)(1, 0) (0, 0)(0, 0)(1, 0) (0.5, 0)

6.

a)

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16

7.	a)	<ul> <li>Find normalization transformation that maps a window from (0, 0) to (5, 5) for the following viewport.</li> <li>i) Normalise screen</li> <li>ii) (1, 1) &amp; (2, 2)</li> </ul>	8			
	b)	Explain Cohen Sutherland outcode algorithm with an example.	8			
		OR				
8.	a)	a) Clip a line using midpoint subdivision algo. having a line passing from points $P_1(-10, 15) \& P_2(15, -10)$ for the window defined (0, 30, 30, 0).				
	b)	A polygon $P_1(1, 1) P_2(7, 1) \& P_3(4, 4)$ clip a line from $Q_1(1, 2)$ to $Q_2(7, 4)$ using cyrus Beck algorithm.	8			
9.	a)	Find out final transformation matrix when point $(x, y)$ is to be reflected about a line $y = mx + c$ .				
	b)	Show that rotation about origin by $270^{\circ}$ is equal to reflection about two axis.	8			
OR						
10.		Write short note on <b>any two</b> .	16			
		i) Perspective projection.				
		ii) B-spline curve.				
		iii) 3D transformation.				
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