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## **BRAINWARE UNIVERSITY**

## **Term End Examination 2022** Programme - Dip.CSE-2018/Dip.CSE-2019/Dip.CSE-2020 Course Name – Computer Graphics **Course Code - DCSE502** (Semester V)

Time: 2:30 Hours Full Marks: 60 [The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.] Group-A 1 x 15=15 (Multiple Choice Type Question) Choose the correct alternative from the following: (i) List the types of computer graphics are b) Scalar and raster a) Vector and raster d) None of these c) Vector and scalar (ii) Identify that Vector graphics is composed of b) paths a) Pixels d) None of these c) Patterns (iii) Identify that Raster images are more commonly called b) Bit map a) Pix map d) None of these c) Both pix and bit map (iv) Select the stopping criteria of Bresenham circle drawing algorithm a) x=y b) x>y . c) x >= yd) x<=v (v) Identify If the boundary is specified in a single color, and if the algorithm proceeds pixel by pixel until the boundary color is encountered is called a) Scan-line fill algorithm b) Boundary-fill algorithm c) Flood-fill algorithm d) Parallel curve algorithm (vi) Identify If we want to recolor an area that is not defined within a single color boundary is known as a) Boundary-fill algorithm b) Parallel curve algorithm c) Flood-fill algorithm d) None of these (vii) Write why the DDA algorithm is a faster method for calculating pixel positions than direct use of line equation using  $y = m^*x + c$ a) it eliminates floating point addition

c) it eliminates rounding operation that drift

away from true line path (viii) Write what does Aliasing mean

a) Rendering effect

c) Staircase effect

b) it eliminates floating point multiplication

None of these

b) Shading effect

d) None of these

(ix	) Choose when Flood fill algorithm cannot be a	oplied	
	a) More than one boundary colour c) Single boundary colour	b) More than one interior colour d) Single interior colour	
(x,	Test and write if we change the position of a c		
112	a) Center coordinates	<ul> <li>b) Center coordinates and redraw the new location</li> </ul>	e figure ii
	c) Outline coordinates  Select how scaling of a polygon is done by con	d) All of these	
	<ul><li>a) product of (x, y) of each vertex</li><li>c) Center coordinates</li></ul>	<ul><li>b) (x, y) of end points</li><li>d) None of these</li></ul>	
(xii	<ul> <li>i) Choose the transformation in which the dimension of an object are changed relative to a specified fixed point is called</li> </ul>		
	a) Translation	b) Scaling	
	c) Rotation	d) Reflection	
(xii	) Choose the types of polygon		
	a) Convex polygon	b) Concave polygon	
(xiv	c) Both Convex polygon and Concave polygon  y) Write for filling polygon in a boundary fill algor either connected or connected	d) None of these ithm, boundary defined regions may be	2
	a) 2,4	b) 4,8	
	c) 8,16	d) 8,6	
(xv	<ul> <li>Test and select the process of cutting off the line which are outside the window are called</li> </ul>		
	a) Shear	b) Clipping window	
	c) Clipping	d) Reflection	
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	Grou	· -	
	(Short Answer T	ype Questions)	3 x 5=1
2. E	xpress Clipping Candidate of the Cohen Sutherla	nd Algorithm	(3)
3. ١	Vrite about point clipping and line clipping		(3)
4. E	xplain Mid-Pont Line Drawing Algorithm		· (3)
	5. Write Bresemham's Line Drawing Algorithm		
6. 1	6. Illustrate the advantages and disadvantages of Computer Graphics  OR		
1	lustrate how window to viewport mapping is do	ne	(3)
	Grou	p-C	
	(Long Answer Ty	pe Questions)	5 x 6=30
7.	Test and perform a 60 Degree rotation of triangle	e A(0,0),B(1,1),C(5,2) a)About P(-1,-1)	(5)
	Calculate and plot the points using mid-point circle drawing algorithm and draw a circle with radius of 8 units		
9. 10.	. Consider mid-point circle drawing algorithm and draw a circle with radius of 10 units  O. Describe Boundary Fill Algorithm		
11. 12.	<ol> <li>Calculate and draw a line from (15,34) to (25,22) using Bresenham's line algorithm</li> <li>Define rotation about origin</li> </ol>		
	OF		(5)
	Define Rotation about fixed point	•	(5)
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