Program: Computer Engineering
Curriculum Scheme: Rev2019
Examination: Second Year Semester: III

Course Code: CSC305   Course Name: Computer Graphics

Time: 2 hour   Max. Marks: 80

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Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	_____is basically a form of pictorial presentation.
Option A:	Photography
Option B:	Animations
Option C:	Drawing
Option D:	Creativity
2.	Solve if A triangle having coordinates A (0,0),B (5,0),C (5,5), after scaling by 2 units in X and 3 units in Y direction the new coordinates will be_____.
Option A:	A(0,0),B(10,0),C(10,15)
Option B:	A(0,0),B(10,15),C(10,0)
Option C:	A(0,0),B(0,10),C(15,10)
Option D:	A(2,3),B(10,0),C(10,15)
3.	Consider the line from (1,1) to (5,5). Use the simple DDA algorithm to rasterize this line. Which are the correct sequence of plotted pixels
Option A:	(2,2) (3,3) (4,5)
Option B:	(2,1) (3,3) (4,5)
Option C:	(2,2) (3,2) (4,5)
Option D:	(2,1) (3,3) (4,4)
4.	i) State the name of the algorithm that uses decision function while plotting line points? ii) Give the location of decision function to be applied in the midpoint circle drawing algorithm to generate circle
Option A:	i) Bresenham's line algorithm ; ii) At midpoint of two pixels
Option B:	i) Parallel line algorithm; ii) At same Y level
Option C:	i) Mid-point algorithm; ii) At midpoint of two pixels
Option D:	i) DDA line algorithm; ii) At same Y level
5.	Apply Bresenham's line algorithm to plot the points between (2,3) to (5,8) and intermediate points are
Option A:	(3,4),(3,5),(4,6)(4,7)
Option B:	(3,3),(3,5),(4,6)(4,7)
Option C:	(3,4),(3,4),(4,6)(4,7)
Option D:	(3,4),(3,5),(3,6)(4,7)
6.	After rotating a triangle having A(0,0), B(6,0), C(3,3) by 90˚ about origin in anticlockwise direction, then resulting triangle will be ___ _.
Option A:	A(0,0),B(-3,-3),C(0,6)

Option B:	A(0,0),B(-3,3),C(0,6)
Option C:	A(0,0),B(3,-3),C(0,6)
Option D:	A(0,0),B(0,6),C(-3,3)
7.	Two Successive Rotations are _____ and Scalings are_____
Option A:	Additive, Subtractive
Option B:	Additive, Multiplicative
Option C:	Multiplicative, Additive
Option D:	Additive, Additive
8.	Positive values for the rotation angle Ө defines
Option A:	Counterclockwise rotations about the end points
Option B:	Counterclockwise translation about the reference point
Option C:	Counterclockwise rotation about the reference point
Option D:	Negative direction
9.	Identify the correct option. The process of mapping a world window in world coordinate system to viewport are called_____ and the region against which an object is clipped is called a _____
Option A:	Viewport , Clip window
Option B:	Clipping window, Clip square
Option C:	Transformation viewing, Clip window
Option D:	Screen coordinate system, Clip square
10.	The region code of a point is 1001. The point is in the ___region of the window.
Option A:	Top Right
Option B:	Top Left
Option C:	Bottom Left
Option D:	Bottom Right
11.	Liang Barsky algorithm uses the _____equations for a line and solves four inequalities.
Option A:	Linear
Option B:	Quadratic
Option C:	Cubic
Option D:	Parametric
12.	A Bezier curve is a polynomial of degree _____the no of control points used.
Option A:	One more than
Option B:	One less than
Option C:	Two less than
Option D:	Two more than
13.	Identify the correct option. The rectangle portion of the interface window that defines where the image will actually appear are called_____ and The process of extracting a portion of a database or a picture inside or outside a specified region are called_____
Option A:	Transformation viewing , Transformation
Option B:	Screen coordinate system, Transformation
Option C:	View port, Clipping

Option D:	Clipping window, Clipping
14.	The surface that is blocked or hidden from view in a 3D scene are known as
Option A:	Hidden surface
Option B:	Frame buffer
Option C:	Front surface
Option D:	Quad tree
15.	The_____ method is based on the principle of comparing objects and parts of objects to each other to find which are visible and which are hidden and In _____algorithm visibility is decided point by point at each pixel position on the projection plane.
Option A:	Image space, Object-space
Option B:	Object-space , Image space
Option C:	Surface-space, Object-space
Option D:	Object-space , Surface-space
16.	Which visible surface detection algorithm is based on perspective depth
Option A:	Depth comparison
Option B:	Subdivision method
Option C:	Depth-buffer algorithm
Option D:	Back-face removal
17.	The number of pixels stored in the frame buffer of a graphics system is known as
Option A:	Resolution
Option B:	Depth
Option C:	Width
Option D:	Persistence
18.	_____ algorithm is used to clip the line
Option A:	Z buffer algorithm
Option B:	Cohen Sutherland
Option C:	Sutherland Hodgeman
Option D:	Bresenham algorithm
19.	If a point (x,y) is reflected about an axis which is normal to the XY plane and passing through the origin, the reflected point (X,Y) is _____
Option A:	(x,-y)
Option B:	(-x,y)
Option C:	(-x,-y)
Option D:	(y,x)
20.	The_____ algorithm divides a 2D space into 9 regions, of which only the middle part (viewport) is visible.
Option A:	Cohen Sutherland
Option B:	Liang Barsky
Option C:	Cyrus Beck
Option D:	Sutherland Hodgeman

Q2. (20 Marks)	Solve any Four Questions out of Six 05 marks each
A	Explain any two different antialiasing techniques in detail.
B	Compare Object space method and Image space method.
C	Identify the pixel position along the line between (10,10)and (18,16) using Bresenham line drawing algorithm.
D	Apply Liang Barsky line clipping algorithm clip the line with coordinates (5,10) and (35,30) against the window (Xwmin,Ywmin)=(10,10) and (Xmax, Ymax)=(20,20)
E	What is Homogeneous coordinate system? Why it is important?
F	Explain Animation and its techniques..
Q3. (20 Marks)	Solve any Two Questions out of Three 10 marks each
A	Derive mathematical expression for decision parameter of midpoint ellipse drawing algorithm.
B	Explain steps for 2D rotation about arbitrary point.

C	Write a short note on
	   a) Depth buffer
	   b) Area subdivision method