S.E. (Comps) (Sem-IV) (CBCGS) 91267
(R2016)

Computer Graphics

University of Mumbai

Examinations Summer 2022

Time: 2 hour 30 minutes Max. Marks: 80

Q1.	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1.	Which one of the following is not an antialiasing technique?
Option A:	Super sampling
Option B:	Pixel phasing
Option C:	Post filtering
Option D:	Staircase effect
2.	The very first point that gets plotted by using midpoint ellipse algorithm is at the location
Option A:	(0, ry)
Option B:	(rx, 0)
Option C.	(rx, ry)
Option D:	(0, 0)
3.	In RGB system, which one of the following combinations selects the black color of the object?
Option A:	(1,1,1)
Option B:	(1,1,0)
Option C:	(0,1,1)
Option D:	(0,0,0)
4.	If a line with vertices A(2,3) and B(8,10) is transformed using T = $\begin{vmatrix} 4 & 0 \\ 0 & 1 \end{vmatrix}$ The new coordinates of the line will be
Option A:	(4,5) and (20,30)
Option B:	(6,9) and (10,15)
Option C:	(8,3) and (32,10)
Option D:	(6,9) and (32,10)
5.	In Cohen Sutherland line clipping algorithm, if both the endpoints of line segment lie inside the window boundary, then region code of the end points are
Option A:	0001
Option B:	0000
Option C:	1000
Option D:	0010
6.	_____ is used to detect the visible surfaces and remove hidden surfaces
Option A:	Area subdivision algorithm
Option B:	Boundary fill algorithm
Option C:	Liang Barsky algorithm
Option D:	Cohen Sutherland algorithm
7.	If the line (0.0) (10,5) will be rasterized using DDA algorithm, then which point will lie on the line?
Option A:	(6,3)
Option B:	(7,5)

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Option C:	(10,6)
Option D:	(1,2)
8.	The process of changing the position of an object along the circular path is called
Option A:	Translation
Option B:	Rotation
Option C:	Shearing
Option D:	Reflection
9.	In window to viewport transformation, following is the correct sequence used in composite transformation
Option A:	Translation -> Scaling -> Translation
Option B:	Translation -> Rotation -> Translation
Option C:	Scaling -> Translation -> Scaling
Option D:	Rotation -> Translation -> Rotation
10.	Which vertex of the polygon is clipped first in polygon clipping?
Option A:	Top right
Option B:	Bottom right
Option C:	Bottom left
Option D:	Top left

Q2	Solve any Four out of Six	5 marks each
A	Compare Raster Scan and Random Scan displays.	
B	What is aliasing? Explain any one antialiasing method	
C	Write the flood fill approach for 8 connected method	
D	Prove that two successive rotations are additive i.e. R1(01) * R2(02) =R(01+ 02)	
E	Write a short note on Bezier Curve.	
F	What are the disadvantages of DDA algorithm?	

Q3	Solve any Two Questions out of Three	10 marks each
A	Explain the steps for 2D rotation about arbitrary point and provide a composite transformation for the same	
B	What is B- spline curve? What are the advantages over Bezier curve? Explain it with example.	
C	Discuss Cohen Sutherland line clipping algorithm in detail.	

Q4	Solve any Two Questions out of Three	10 marks each
A	Discuss Depth Buffer and area subdivision method in detail.	
B	Explain window to viewport transformation with example.	
C	Derive homogeneous matrix for reflection and shear transformation of 3D objects.	

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