

Roll No																			
---------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



**PRESIDENCY UNIVERSITY
BENGALURU**

**SCHOOL OF ENGINEERING
END TERM EXAMINATION - JUN 2023**

Semester : Semester IV - 2021

Course Code : CSE2066

Course Name : Sem IV - CSE2066 - Computer Graphics

Program : CAI,CEI&CBD

Date : 16-JUN-2023

Time : 9.30AM - 12.30PM

Max Marks : 100

Weightage : 50%

Instructions:

- (i) Read all questions carefully and answer accordingly.
 - (ii) Question paper consists of 3 parts.
 - (iii) Scientific and non-programmable calculator are permitted.
 - (iv) Do not write any information on the question paper other than Roll Number.
-

PART A

ANSWER ALL THE QUESTIONS

(5 X 2 = 10M)

1. List out the advantages of Bresenham's line drawing algorithm over DDA line drawing algorithm.
(CO1) [Knowledge]
2. Describe the applications of Clipping in Computer Graphics.
(CO3) [Knowledge]
3. If one uses a 512x512 element raster display, then identify the minimum size of memory required to store bit map?
(CO2) [Knowledge]
4. Differentiate between 2D and 3D Transformation from World coordinates to Viewpoint coordinates.
(CO3) [Knowledge]
5. Define 2D Curves and 3D Space Curves with suitable diagrams.
(CO4) [Knowledge]

PART B

ANSWER ALL THE QUESTIONS

(5 X 10 = 50M)

6. Classify types of Clipping : Point, Line and Polygon with suitable example and diagrams.
(CO2) [Comprehension]

7. Explain Three Dimensional Translation, Rotation and Scalling with proper examples and diagrams.
(CO3) [Comprehension]
8. Discuss and distinguish the advantages of Bresenham's circle drawing algorithm over Mid-point circle drawing algorithm.
(CO1) [Comprehension]
9. Explain Bezier and Spline curves for curve representations in computer graphics with suitable diagrams.
(CO4) [Comprehension]
10. Extend the Cohen Sutherland line clipping algorithm to clip the line segment coordinate (30,60) and (60,25) against the clip window whose coordinates are $(X_{wmin}, Y_{wmin})=(10,10)$ and $(X_{wmax}, Y_{wmax})=(50,50)$.
(CO3) [Comprehension]

PART C

ANSWER ALL THE QUESTIONS

(2 X 20 = 40M)

11. Illustrate Sutherland-Hodgman Polygon Clipping algorithm. Consider any polygon of your choice, apply Sutherland-Hodgman algorithm to demonstrate polygon clipping. Draw the polygon before clipping and after clipping.
(CO3) [Application]
12. Demonstrate a routine to display a two dimensional cardinal spline curve, given an input set of control points on the xy plane.
(CO4) [Application]