

29 2309000022

UTTARANCHAL UNIVERSITY, DEHRADUN  
UTTARANCHAL SCHOOL OF COMPUTING SCIENCES  
INTERNAL EXAMINATION  
ODD SEMESTER 2025-26  
BCA | 5<sup>th</sup> Semester

COMPUTER GRAPHICS

Time: 1:15 Hour

Note: All questions are compulsory.

| BCA – 501(DE1)  
Max. Marks: 30

Q.1- Answer the following questions.

(1 x 6 = 6 Marks)

Multiple Choice Questions

a) Random scan systems are used for:

(CO-2, BL-1)

a. Color drawing application

b. Pixel drawing application

c. Line drawing application

d. None of these

b) The region code of a point within the window is:

(CO-3, BL-2)

a. 1111

b. 0000

c. 1000

d. 0001

c) Which among the following is a part of the Cathode Ray Tube?

(CO-1, BL-1)

a. To resize objects

b. To remove objects outside the viewing area

c. To change the color of objects

d. To enhance image quality

d) If lighting is disabled which function specifies the color of the vertex:

(CO-1, BL-2)

a. glClearColor()

b. None of these

c. glColor()

d. glDisplayfunc()

e) The clipping algorithm is used for polygon clipping :

(CO-3, BL-1)

a. Liang-Barsky

b. Sutherland-Hodgeman

c. Cohen-Sutherland

d. Both (i) and (ii)



- f) Which of this algorithm is used to color a pixel if it is not colored and leaves if it is already filled? (CO-3, BL-4)
- |                           |                                     |
|---------------------------|-------------------------------------|
| a. Boundaryfill algorithm | b. Scan line polygon fill algorithm |
| c. Floodfill algorithm    | d. All of the above                 |

**Q.2- Attempt any two of the following. (2 x 3 = 6 Marks)**

- a) Explain the role of Computer Graphics in today's life. (CO-1, BL-2)
- b) Digitize a line from (1, 1), to (8, 5) on a raster screen using Bresenham line drawing algorithm. (CO-2, BL-3)
- c) Design square using OpenGL. (CO-3, BL-6)

**Q.3-Attempt any one of the following. (1 x 6 = 6 Marks)**

- a) Design a program to fill a polygon using Flood filling algorithm. (CO-3, BL-6)
- OR**
- b) Draw a circle using Mid-point circle drawing algorithm with a radius of 10 and centre of circle at (0, 0). (CO-2, BL-6)

**Q.4- Attempt any one of the following. (1 x 6 = 6 Marks)**

- a) Explain the working of plasma display in detail. (CO- 1, BL-2)

**OR**

- b) Using the Cohen-Sutherland line clipping algorithm, clip the two lines defined by points P1(40, 15) to P2(75, 45) and P3(70, 20) to P4(100, 10) against a rectangular window with vertices A(50, 10), B(80, 10), C(80, 40), and D(50, 40). (CO- 3, BL-5)

**Q.5- Attempt any one of the following. (1 x 6 = 6 Marks)**

- a) Calculate the points between the starting coordinates (5,6) and ending coordinates (13,10) using DDA Algorithm. (CO- 2, BL-3)

**OR**

- b) What is OpenGL and what are its primary applications in the field of computer graphics? (CO- 1, BL-2)