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UTTARANCHAL UNIVERSITY, DEHRADUN
UTTARANCHAL SCHOOL OF COMPUTING SCIENCES
INTERNAL EXAMINATION
ODD SEMESTER 2025-26
BCA | 5th 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)