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B.C.A. IVth Semester (Even) Examination, 2023

COMPUTER GRAPHICS AND MULTIMEDIA SYSTEMS

Paper : BCA–403

Time : 3 Hours] *[M.M. : 70*

Note :– Answer any *five* questions. All questions carry equal marks.

1. Define computer graphics with an example. Discuss five application areas where computer graphics plays big role.

2. Explain Cathode Ray Tube with proper diagram. Also differentiate Raster Scan Display and Random Scan Display.

3. Discuss rotation and reflection along with their metrics in computer graphics. Prove that two reflections equal one rotation.

4. Explain Cohen Sutherland algorithm. Use the Cohen Sutherland algorithm to clip the line $P_1(35, 10)$-$P_2(62, 40)$ against a window A(50, 10), B(80, 10), C(80, 40) and D(50, 40).

5. Find the new coordinates of the point (3, 4) when :

   (i) The origin is shifted to the point (1, 2)

   (ii) The axes are rotated by an angle θ anticlockwise, where $\tan\theta = 4/3$.

   (iii) The origin is shifted to (1, –2) and the axes are rotated by 90° in the clockwise direction.

6. Discuss classification of hardware in computer graphics along with conceptual framework for interactive graphics.

7. What is solid modelling in computer graphics ? Elaborate sweep representation in detail with example.

8. Explain the production process of multimedia applications with example.

9. Write the role of Animation in computer graphics by demonstrating their important application areas. Also explain types of Animation techniques.

10. Describe scan conversion of line with an example. Draw a line between points $P_1(2, 2)$ and $P_2(5, 5)$.