P-844

Total Pages : 3   Roll No. ....

BCA-17

Interactive Computer Graphics

Bachelor of Computer Application (BCA)

5th Semester Examination, 2023 (June)

Time : 2 Hours]   **[Max. Marks : 70**

Note : This paper is of Seventy (70) marks divided into two (02) Sections A and B. Attempt the questions contained in these sections according to the detailed instructions given therein. Candidates should limit their answer to the questions on the given answer sheet. No additional (B) answer sheet will be issued.

SECTION–A
(Long Answer Type Questions)

Note : Section 'A' contains Five (05) long answer type questions of Nineteen (19) marks each. Learners are required to answer any Two (02) questions only.

(2×19=38)

1. Explain Bresenham's line drawing algorithms along with their derivations.

2. Describe the 2-D transformation matrix for rotation about arbitrary point.

3. Define Projection. What are different types of projections in computer graphics? Explain with example.

4. What do you mean by Computer Graphics? Discuss the applications of computer graphics.

5. Describe a general purpose algorithm for plotting a straight line using Bresenham's approach. Test your algorithm by plotting a line from (-15,13) to (0,0). Also draw the line.

SECTION–B
(Short Answer Type Questions)

Note : Section 'B' contains Eight (08) short answer type questions of Eight (08) marks each. Learners are required to answer any Four (04) questions only.   (4×8=32)

1. Draw the block diagram of CRT and explain its working in detail.

2. What are the difference between Raster and Random Scan display?

3. Explain window to viewport mapping?

4. Explain RGB, CMYK, HSV color model.

5. With suitable examples explain all 3D transformations.

6. What is an animation? Explain principles of animation.

7. Find the reflection of a triangle defined by the vertices A(l,l), B(5,l) and C(l,5) about a line $y = 2x + 10$.

8. Write Short note on following :

   (a)   Reflection.

   (b)   Plasma panel.

   (c)   Shearing.

   (d)   Aspect ratio.

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