BCA-17

Interactive Computer Graphics

Bachelor of Computer Application (BCA-11/16/17)

5th Semester Examination, 2019 (June)

Time : 3 Hours]   **Max. Marks : 80**

Note : This paper is of Eighty (80) marks divided into three (03) sections A, B and C. Attempt the questions contained in these sections according to the detailed instructions given therein.

SECTION–A

(Long Answer Type Questions)

Note : Section 'A' contains four (04) long answer type questions of Nineteen (19) marks each. Learners are required to answer any two (02) questions only.

(2×19=38)

1. What do you mean by an interactive devices ? Explain about any five types of interactive devices.

2. What do you mean by an Animation? What are the four steps of animation? Explain all the types of Animation.

3. What do you mean by window to view post transformation? Find the normalization tranformation for window to view post which uses the rectangle whose lower left corner (2,2) and upperright corner (6,10) as a window and the viewpost that has lower left corner oat (0,0) and upper right corner at (1,1).

4. Justify the approach of using integer arithmetic in a bresnham line-drawing algorithm. Explain how sasterization accuracy is preserved despite using integer arithmetic.

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. Compare DVST and Refresh display. List the properties of phosphor used in CRT monitors.

2. Enumerate the advantages and disadvantages of flood fill and boundary fill algorithm.

3. Prove that a triangle ABC given by [(-0.5,1),(0,2),(0.5,1)] after being reflected about y=x is the same as it is being reftected relative to x-axis followed by counterclockwise rotation of 90°.

4. Derivate the bresenham's line generation algorithm.

5. What do you mean by clipping of lines? What are the three categories of lines defined in cohen-suthesland? Derivate it.

6. Prove that for viewing transformation Sx=Sy if and only if aspect ratio of window is equal to the aspect ratio of the viewport.

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

8. Explain parallel projection and its type in detail.

(Objective Type Questions)

Note : Section 'C' contains ten (10) objective type questions of one (01) mark each. All the questions of this section are compulsory. (10×1=10)

1. The region code 0000 respresent the --------?

(a) Left clipping window

(b) Right clipping window

(c) Top clipping window

(d) Viewing window

2. The process of selecting and viewing the picture with different view is called____?

(a) Windowing

(b) Clipping

(c) Projection

(d) None of them.

3. In which system the shadow mark method are commonly used?

    (a) Raster Scan system

    (b) Random scan system

    (c) Both (a) and (b)

    (d) None of them.

4. If the resolution of a printer is 1200 dpi, the nunber of dots per square inch is

    (a) 120

    (b) 12

    (c) 1200×1200

    (d) 12000.

5. What technology is used for flat panel displays ?

    (a) RGB monitor

    (b) DVST

    (c) Solid State

    (d) VLSI.

6. Pixel stands for :

   (a) Picture extension

   (b) Pixel element

   (c) Picture element

   (d) None of them.

7. Which type of display is used in digital watches ?

   (a) LED

   (b) LCD

   (c) CRT

   (d) None of them.

8. GIF stands for:

   (a) Google Instruction format

   (b) Graphics instruction file

   (c) Graphics interchange format

   (d) None of them.

9. Shearing means to change the size of an object .

   (a) True

   (b) False.

10. Coordinates of window are known as_____

    (a)   Screen coordinate

    (b)   Device coordinate

    (c)   cortesian coordinate

    (d)   World coordinate

————————