Roll No. .....

Total No. of Questions : 9] [Total No. of Printed Pages : 4

(2043)

# B.C.A. (CBCS) RUSA VIth Semester Examination

# 4218

## COMPUTER GRAPHICS

Paper : BCA0604

**Time : 3 Hours]** **[Maximum Marks : 70**

***Note*** :– Attempt *five* questions in all, selecting *one* question each from Parts-B, C, D, and E. Question No. **1** (Part-A) is compulsory.

### Part–A

### (Compulsory Question)

1. Attempt all parts :

(A) Fill in the blanks :

(i) A ..... provides a screen with graphic icons or menus and allow user to make rapid selection from them to give instructions to a computer.

(ii) OCR stands for ..... .

(iii) A ..... is an input device used for converting pictures, maps and drawings into digital form for input to computers.

(iv) ..... are the most popular soft-copy output devices used nowadays.

(v) LCD stands for ..... .

(vi) The full form of DDA is ..... .

(vii) Removing objects and lines is the aim for using ..... algorithms in computer graphics.

(viii) ..... algorithm is a method for calculating pixel position.

(ix) 2D transformations are useful for modifying an object's position, size, orientation and ....., among other things.

(x) Computer graphics refers to designing ..... . 1×10=10



(B) Answer the following in **25** to **50** words :

(i) Write a short note on Digitizer.

(ii) What are the disadvantages of DDA algorithm ?

(iii) Define Scaling.

(iv) What is Viewport ? Explain.

(v) What is Morphing ? Explain. 4×5=20

**Part–B** 10×1=10

**(Unit–I)**

2. What are Computer Graphics ? What is the difference between Raster scan and Random scan displays ?

3. What are Image scanners ? Differentiate between flatbed and hand-held scanners.

**Part–C** 10×1=10

**(Unit–II)**

4. Consider a line from (0, 0) to (6, 7). Use DDA algorithm to rasterize this line.

5. Explain the terms aliasing and anti-aliasing. Discuss various approaches and techniques used for antialiasing techniques.

## Part–D

5×2=10

### (Unit–III)

6. Explain the following terms :

   (i) Magnification and reduction

   (ii) Uniform and differential scaling

7. Consider the triangle ABC where A(3, 3), B(6, 2) and C(5, 6). Reflect the triangle :

   (i) about $x$-axis.

   (ii) about a line $y = -x$.

## Part–E

10×1=10

### (Unit–IV)

8. Define Window and viewport. Explain the process of window to viewport mapping.

9. Discuss Sutherland-Hodgeman polygon clipping algorithm with the help of an example.