Roll No. .....

Total No. of Questions : **10**] [Total No. of Printed Pages : 7

(1048)

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

4040

COMPUTER GRAPHICS

Paper : BCA0604

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

Note :– Attempt *five* questions in all. Section–A, Q. No. **1** is compulsory. Section–B, answer any *four* questions, selecting *one* question from each Unit.

Section–A

1. Attempt all *ten* objective type questions (MCQ) :

   (i) The transformation in which an object is moved from one position to another in circular path around a specified pivot point is called a :

   (a) Rotation (b) Shearing

   (c) Translation (d) Scaling

(ii) The transformation in which the dimension of an object are changed relative to a specified fixed point is called :

(a) Rotation

(b) Reflection

(c) Translation

(d) Scaling

(iii) The transformation that produces a parallel mirror image of an object are called :

(a) Rotation

(b) Reflection

(c) Translation

(d) Scaling

(iv) Coordinates of viewport are known as ..... .

(a) World coordinates

(b) Polar coordinates

(c) Screen coordinates

(d) Cartesian coordinates

(v) The region against which an object is clipped is called a ..... .

(a) Clip window

(b) Boundary

(c) Enclosing rectangle

(d) Clip square

(vi) ..... identifies the picture portions that are exterior to the clip window :

(a) Interior clipping

(b) Exterior clipping

(c) Extraction

(d) None of the above

(vii) Identify line clipping algorithms form the following :

(a) Cohen-Sutherland algorithm

(b) Liang-Barsky clipping

(c) Nicholl-Lee-Nicholl clipping

(d) All of the above

(viii) In CRT, the electron intensity is adjusted using ..... .

(a) Accelerating anode

(b) Control grid

(c) Electron gun

(d) Focusing anode

(ix) Brightness of a display is controlled by varying the voltage on the ..... .

(a) Focusing anode

(b) Connection pins

(c) Control gird

(d) Power supply

(x) Lower persistence phosphorus is used in :

(a) Animation

(b) Simple object

(c) Complex object

(d) All of these

$1 \times 10 = 10$

2. Attempt the following questions in **(25–50)** words. Each question consists of 4 marks.

(a) Define text clipping

(b) Differentiate oblique and orthogonal projections.

(c) Give the single-point perspective projection transformation matrix when projectors are placed on the z-axis.

(d) List any *four* real time animation techniques.

(e) Discuss the basic concept of Computer Graphics. 5×4=20

Section–B

(Unit–I) 10

3. (a) List the input devices and explain the working of each.

(b) List the display devices and explain the classification of display devices used in computer graphics.

Or

4. Explain the following Video Displays Devices :

(a) Refresh cathode ray tube

(b) Raster Scan Displays

(c) Random Scan Displays

(d) Color CRT Monitors

(Unit–II)

5. Write down and explain the midpoint circle drawing algorithm. Assume 10 cm as the radius and co-ordinate origin as the centre of the circle.

Or

6. Explain about different line drawing algorithms. 10

(Unit–III)

7. Illustrate the following basic two dimensional geometric transformations :

   (a) Translation

   (b) Rotation

Or

8. Explain how transformation can be done from window to view port. Explain using example and also compare between window port and view port. 10

(Unit–IV)

9. Explain about Cohen-Sutherland line clipping algorithm.