Computer Graphics
2K5-FS-01

Time : 3 hrs. **M.M : 100**

Note :—

1. *Part 'A' may be attempted in first 6 pages of Answer Sheet.*
   भाग 'क' के सभी उत्तर, उत्तर-पुस्तिका के प्रथम छ. पृष्ठों में ही करने है।
2. *Part 'B' in rest of the Sheets of Answer Sheet.*
   भाग ख के उत्तर, उत्तर-पुस्तिका के अगले शेष पृष्ठों में लिखिये।
3. *Answers may be given in English or Hindi*
   प्रश्नों के उत्तर अंग्रेजी अथवा हिन्दी में दीजिये।

PART - 'A'

1. Attempt any ten questions : - (10x2=20)

(a) CRT stands for _____

(b) DDA stands for _____

(c) Name the different display techniques?

(d) List different input devices ?

(e) What are different line drawing algorithms?

(f) What are the uses of computer Graphics?

(g) Why we need scan conversion?

(h) Name the different 2D transformations?

(i) What do you mean by parallel projection?

(j) What do you mean by pixel & resolution ?

(k) What is reflection ?

(l) What is kinematics?

(m) Define morpheing

(n) What is shearing.

2. Attempt any five questions : (5x4=20)

(a) Write short note on any two:

(i) Trackball (ii) Joystick (iii) mouse (iv) keyboard

(b) List all the application of Computer Graphics?

(c) What do you mean by animation? Explain the various. types of animation techniques.

(d) Scan convert a circle of radius 6 using Bresenham's circle algorithm.

(e) Explain scaling transformation.

(f) Write short note on :
(i) Reflection (ii) GKS

(g) Define clipping ? Explain the point clipping algorithm.

(h) What do you mean by scan conversion of a point. Explain with example.

PART- B

Attempt any three questions. (3x20=60)

3. (a) Explain Bresenham's line algorithm and explain it with suitable example.

(b) Digitize a line from (10,12) to (20,18) on raster screen using DDA line algorithem.

4. (a) What is bezier curve? Explain the properties of bezier curves?

(b) Define vanishing point Explain one point, two and three point vanishing projection.

5. (a) What do you mean by region filling? Explain the various algorithom for region filling.

(b) Explain wire frame model in detail. Explain its advantages and disadvantages.

6. (a) What is need of homogeneous cordinates ? Give the homogenous co-ordinates for translation,rotation and scaling.

(b) Find out the final transformation matrix, when a point P (x,y) is to be reflcted about a line y=mx+c

7. (a) Obtain the transformation matrix for rotaion about line joining points (0,0,1) and (1,1,1) by an angle 45° in anti clockwise direction about Z-axis.

(b) What is windowing and clipping ? Explain Sutherland Hodgman algorithm for clipping a polygon.