KNT/KW/16/5270

Bachelor of Computer Application (B.C.A) Semester—V Examination

COMPUTER GRAPHICS—I

Paper—1

Time : Three Hours] [Maximums Marks : 50

Note :— (1) **ALL** questions are compulsory and carry equal marks.

(2) Draw a well labelled diagram wherever necessary.

EITHER

1. (A) Discuss any two application areas in which computer graphics is used. 5

(B) Explain working of CRT in detail. 5

OR

(C) Explain working of random scan systems in computer graphics. 5

(D) Write notes on :

(i) Work station

(ii) Raster-scan system. 5

EITHER

2. (A) Write a vector generation algorithm for line generation. 5

(B) Explain working of Midpoint circle algorithm. 5

OR

(C) Write a procedure for Flood fill algorithm. 5

(D) Write a scan line polygon fill algorithm. 5

EITHER

3. (A) What is translation ? Obtain an equation for translation of 2D object. 5

(B) Explain reflection in detail. 5

OR

(C) What is shear transformation ? Explain its two shear transformation in detail. 5

(D) Give a 3×3 homogeneous transformation matrix for each of the following : 5

(i) Shift the image to the right 3 units

(ii) Move the image down 2/3 units and left 4 units.

EITHER

4. (A) What is View-port ? Give window to View-port co-ordinate transformation in detail. 5

(B) Write a Cohen Sutherland Line Clipping algorithm. 5

OR

(C) Write Sutherland-Hodgeman polygon clipping algorithm. 5

(D) Use the Cohen-Sutherland outcode algorithm to clip a line starting from (–13, 5) and ending at (17, 11) against the window having its lower left corner at (–8, – 4) and upper right corner at (12, 8). 5

5. (A) Give role of Graphic monitor and input device in computer graphics. 2½

(B) What is Pixel ? What is frame buffer ? 2½

(C) What is 2D transformation ? 2½

(D) What is Viewing pipeline ? 2½