HE-3590

Third Year B. C. A. (Sem. VI) Examination
February / March – 2018
601 - Computer Graphics

Time : Hours]　　　　　　　　　　　　　　[Total Marks : 70

Instruction :

1 Answer the following in short : (any **seven**) 　　14

   (a) What is Vector Graphics ? Explain with example.

   (b) Define Aspect Ratio.

   (c) What is line segment ? How to find a slope of line segment?

   (d) List the methods used for producing color displays with CRT.

   (e) State the limitations of winding number method.

   (f) What is scaling? Differentiate between Uniform and Differential scaling.

   (g) Define Circle and Chord of a circle.

   (h) List out various graphics standards.

   (i) Define reflection.

2 Answer the following questions in detail.

   (a) Discuss the application of graphics in the area of Entertainment and Education in detail.　　8

   (b) Write a note on LCD.　　6

OR

   (b) Differentiate Random Scan and Raster Scan Display.　　6

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3   Answer the following in detail.

a)   What are the limitations of VECGEN's line drawing   8
     algorithm? Explain Bresenham's line drawing algorithm.

(b) Write a note on various line caps and line joints.   6

OR

(b) Define slope. Discuss various types of slope by giving   6
     proper examples.

4   Do as directed : (any **two**)   14

(a) List the polygon filling methods. Explain any one
     method in detail.

(b) Discuss the inside test method that work efficiently
     with over lapping polygons.

(c) Write a note on boundary fill algorithm.

5   Do as directed :

(a) Write a note on Scaling and Shearing.   6

OR

(a) Explain Rotation of a point about origin.   6

(b) Attempt the following with example : (any **two**)   8

(a) Derive single matrix to shift the image 5 units
     up and to scale the image with factor of two.

(b) Give a single matrix to translate object 6 units
     up, 6 units right and then rotate clock wise 45°.

(c) Derive a matrix to increase height twice of the
     original image, rotate it in antiwise direction with
     an angle 90° about origin. (Take sin 90° = 1 and
     cos 90° = 0)

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