CBCS SCHEME

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18CS62

Sixth Semester B.E. Degree Examination, Jan./Feb. 2023
Computer Graphics and Visualization

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. List and explain any six applications of computer graphics. **(08 Marks)**

b. Explain the Refresh Cathod Ray Tubes with the neat diagram. **(12 Marks)**

OR

2 a. Develop the code of the Bresenhams Line Drawing Algorithm. Also illustrate the algorithm the line end points are (20, 10) and (30, 18). **(10 Marks)**

b. Write circle drawing algorithm. Given a circle radius r = 10, solve the midpoint circle algorithm by determining positions along the circle octant in the first quadrant from x = 0 to x = y. **(10 Marks)**

Module-2

3 a. Classify the polygon. Explain two methods for inside-outside test of a polygon. **(10 Marks)**

b. Develop the concept of Scanfill algorithm for filling algorithm for filling polygon with suitable diagrams. **(10 Marks)**

OR

4 a. Explain translation, rotation and scaling of 2D transformation with suitable diagrams, code and matrix. **(10 Marks)**

b. Explain OpenGL raster transformations and OpenGL geometric transformation functions. **(10 Marks)**

Module-3

5 a. Develop the Cohen Sutherland Line Clipping program using OpenGL. **(10 Marks)**

b. Explain any two of the 3D geometrical transformation. **(10 Marks)**

OR

6 a. Explain the Sutherland Hodgeman Polygon clipping with example. **(10 Marks)**

b. Discuss the RGB color model and CMY color model. **(10 Marks)**

Module-4

7 a. Define orthogonal projections. Explain clipping window and orthogonal projection view volume in 3D. **(10 Marks)**

b. Explain the three dimensional view pipeline. **(10 Marks)**

OR

8 a. Construct perspective-projection transformation coordinates and perspective projection equations special cases. **(10 Marks)**

b. Explain the Depth-Buffer method and develop its algorithm. **(10 Marks)**

Module-5

9 a. Explain any three programming event driven input with suitable examples. **(10 Marks)**

b. Explain the various input modes with neat diagram. **(10 Marks)**

OR

10 a. Explain Animating Interactive Program. **(10 Marks)**

b. Discuss Logical Device and Hierarchical Menus. **(10 Marks)**

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