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15CS62

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

Time: 3 hrs.   Max. Marks: 80

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

Module-1

1 a. What is Computer Graphics? Explain the applications of Computer Graphics. (08 Marks)
   b. Explain in brief Color CRT Monitor. (08 Marks)

OR

2 a. Explain Bresenham's line drawing algorithm. (08 Marks)
   b. Explain Point attribute functions. (04 Marks)
   c. List OpenGL Line attribute functions. (04 Marks)

Module-2

3 a. Explain Inside outside tests. (08 Marks)
   b. What is Fill area? Explain Polygon classification by identifying concave polygon. (04 Marks)
   c. Explain OpenGL Wire – Frame methods. (04 Marks)

OR

4 a. Explain the Scan Line Polygon Fill algorithm. (08 Marks)
   b. Explain 2 Dimensional Translation , Rotation , Scaling. (08 Marks)

Module-3

5 a. Explain Cohen Sutherland Line clipping algorithm. (08 Marks)
   b. What is Clipping and Clipping window? (04 Marks)
   c. Explain 3 Dimensional translation. (04 Marks)

OR

6 a. Explain the Ambient Light , Diffuse reflection and Specular reflection. (08 Marks)
   b. What is Affine transformation? (04 Marks)
   c. What is Color Models? Explain different color models characteristics. (04 Marks)

Module-4

7 a. Explain the Orthogonal Projections. (08 Marks)
   b. Explain 3D viewing pipeline. (08 Marks)

OR

8 a. Explain OpenGL 3D viewing functions. (08 Marks)
   b. What is Projection plane, Parallel and Perspective projections? (06 Marks)
   c. What is Depth Curing? (02 Marks)

Module-5

9 a. What are major characteristics which describe the logical behavior of an input devices? Explain how OpenGL provides functionality of each of the classes of logical input devices. **(08 Marks)**

 b. How Pop - up menus are created using GLUT? Illustrate with an example. **(08 Marks)**

OR

10 a. What is Display list? Give OpenGL code segment that generates a display list defining a red triangle with vertices at (90, 50) (150, 50) and (100, 150)? **(08 Marks)**

 b. List out any characteristics of good Interactive program. **(04 Marks)**

 c. Explain Bezier surfaces. **(04 Marks)**

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