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13MCA34

Third Semester MCA Degree Examination, Dec.2016/Jan.2017
Computer Graphics

Time: 3 hrs. Max. Marks:100

Note: ***Answer any FIVE full questions.***

1 a. Explain the basic syntax of open GL with simple program. **(08 Marks)**
b. Briefly discuss the open GL point functions. **(06 Marks)**
c. Explain in detail open GL line functions with example. **(06 Marks)**

2 a. Describe DDA line drawing algorithm's merits and demerits. **(04 Marks)**
b. Demonstrate midpoint circle algorithm with one example. **(10 Marks)**
c. Briefly explain – Boundary filling algorithm. **(06 Marks)**

3 a. Explain the basic 2D geometric transformations with equations. **(10 Marks)**
b. Discuss the inverse transformations. **(04 Marks)**
c. Write short notes on: **(06 Marks)**
(i) Reflection (ii) Shear

4 a. Explain in detail 3D translation and 3D scaling. **(10 Marks)**
b. Write a open GL program to rotate the cube about 90° in clockwise with respect to Z axis. **(10 Marks)**

5 a. With neat diagram explain 2D viewing transformation pipeline. **(06 Marks)**
b. Explain the Cohen-Sutherland line clipping algorithm with diagram. **(10 Marks)**
c. Briefly explain about text clipping. **(04 Marks)**

6 a. How modeling co-ordinates are translated into viewing co-ordinates in 3D pipeline? **(10 Marks)**
b. Explain oblique parallel projections with diagram. **(10 Marks)**

7 a. Explain in detail Beizer-Spline curves. **(10 Marks)**
b. Describe the basic approach to design animation sequence. **(06 Marks)**
c. Differentiate traditional animation and computer animation techniques. **(04 Marks)**

8 Write a short notes on: **(20 Marks)**
a. Bresenham's line drawing.
b. Affine Transformations.
c. Depth cueing.
d. Orthogonal projection.

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