S.E Sem III R-2019 - C Scheme NOV 2023

Time: 3 Hours

Total Marks: 80

2/12/23

N.B. 1. Question No. 1 is compulsory
2. Attempt any 3 from remaining questions.
3. Assume any suitable data if necessary and justify the assumptions.

Q.1 Attempt any Four 4x5=20

1. Compare DDA and BRESENHAM line drawing algorithm.
2. Give application of computer graphics.
3. Explain with neat diagram rasterization.
4. Give fractal dimension of KOCH curve.
5. Define Projection, Describe perspective projection with neat diagram.

Q.2 20

1. Given a triangle ABC where A(0,0), B(10,10) and C(20,0), scale the given triangle ABC 2-unit in X direction and 0.5-unit in Y direction. Find out the new coordinate of triangle ABC after scaling.
2. Explain with neat diagram Sutherland and Hodgman polygon clipping algorithm in detail.

Q.3 20

1. Derive window to viewport coordinate transformation.
2. Give properties of Bezier curve.

Q.4 20

1. Derive Mid-point circle generation algorithm.
2. Give principles of animation

Q.5 20

1. Explain with neat diagram Area Sub division (Warnock's) algorithm to remove hidden surfaces.
2. Derive matrix for 2D rotation transformation.

Q.6 Attempt any Four 20

1. Explain point clipping algorithm.
2. Give pseudo code for 4-connect Boundary fill algorithm.
3. Give transformation matrix for 3D – Translation, Scaling, Rotation (about x, y, z axis)
4. Explain with neat diagram composite transformation for scaling.
5. Given a line AB where A(0,0) and B(1,3) find out all the coordinate of line AB using DDA algorithm.

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