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First Term Examination

Third Semester [B.Tech.] (CSE/IT)

September, 2019

Paper Code: ETCS - 211

Subject: Computer Graphics and Multimedia

Time: 1½Hrs.

Maximum Marks: 30

Note: Attempt Q.No.1 which is compulsory and any two more questions from remaining.

Q1.

[4x2.5=10]

- What do you mean by composite transformations? State the importance of homogeneous coordinate system in transformation operations.
- Distinguish between Raster Scan and Random Scan Display.
- What do you mean by Interpolation and Approximation Splines?
- State the conditions for point clipping against a rectangular window.

Q2.

- Derive equations for Bresenham's circle algorithm. Scan convert a circle centred at (0,0) and radius is 5 units using Bresenham's Circle algorithm. [6]
- Magnify the triangle with vertices A(0,0), B(1,1) and C(5,2) to twice its size while keeping C(5,2) fixed. [4]

Q3.

- Using Cohen-Sutherland line clipping algorithm, clip the following line against a window which has lower left corner at $(-3, 1)$ and upper right corner at $(2, 6)$

Line l: A(-1,5) B(3,8) [5]

- Differentiate between Parallel and Perspective projection. Obtain the standard perspective projection matrix of a point $P(x,y,z)$ onto the projection plane at $z=0$ and the centre of projection is at a distance d from the projection plane on the negative direction of z axis. [5]

Q4.

- What is parametric continuity condition? Explain 4 control point Bezier curves. [6]
- Explain the Specular Reflection Model. [4]
