June 14, 2024 02:30 pm - 05:30 pm 1T01873 - S.E. Computer Science & Engineering (Artificial Intelligence & Machine Learning) (R-2019)(C-Scheme) SEMESTER - III / 49375 - Computer Graphics QP CODE: 10054849

Duration: 3 Hours   **Total Marks 80**

N.B: 1) Question **number 1** is compulsory.

2) Attempt **any three** out of the remaining.

3) Assume suitable data if **necessary** and justify the assumptions.

4) Figures to the **right** indicate full marks.

Q.1 Attempt **any four**   **20**
  i. Give applications of Computer Graphics.
 ii. What is an antialiasing? Explain any 3 antialiasing techniques.
iii. Compare DDA and BRESENHAM line drawing algorithm.
 iv. Explain Viewing transformation pipeline.
  v. Give fractal dimension of Koch curve.

Q.2   **20**
a. Given a line AB where A(0,0) and B(1,3) find out all the coordinates of line AB using DDA algorithm.
b. Describe different traditional animation techniques.

Q.3   **20**
a. Describe homogeneous coordinates.
b. Describe with neat diagram Boundary Fill and Flood fill algorithm.

Q.4   **20**
a. Derive window to viewport coordinate transformation.
b. Derive matrix for 2D rotation at any arbitrary (fix) point.

Q.5   **20**
a. Give properties of Bezier curve.
b. Describe with neat diagram Sutherland Hodgman polygon clipping algorithm.

Q.6   **20**
a. Describe with neat diagram Depth Buffer algorithm.
b. What is projection? Explain with neat diagram different perspective projections.

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