

Roll No.

Total No. of Questions : 09]

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B.Tech. (Sem. – 5th)
COMPUTER GRAPHICS
SUBJECT CODE : CS - 309

Paper ID : [A0468]

[Note : Please fill subject code and paper ID on OMR]

Time : 03 Hours

Maximum Marks : 60

Instructions to Candidates:

- 1) Section - A is **Compulsory**.
- 2) Attempt any **Four** questions from Section - B.
- 3) Attempt any **Two** questions from Section - C.

Section - A

Q1) **(10 × 2 = 20)**

- a) What do you mean by the terms: Morphing and planning.
- b) What is “Transformation” in terms of Computer Graphics?
- c) How shearing is different from scaling?
- d) Define the terms: Screen and world coordinates with example.
- e) What is anti-aliasing and its need?
- f) Name various circle and eclipse drawing algorithms.
- g) Give the transformation matrix for rotating a point P(x, y), about X-axis by 90 degrees.
- h) How vector CRTs are different from Raster CRTs.
- i) Define the terms: Rendering and Animation.
- j) What do you mean by Hidden surface removal and why we need it?

Section – B

(4 × 5 = 20)

- Q2)** What is clipping? Name various Graphics clipping algorithms and describe in brief any line clipping algorithm.
- Q3)** What is DDA and its limitations? Why it is named so? Explain in detail DDA line drawing algorithm and discuss its complexity.
- Q4)** Compute the homogeneous Transformations matrix to rotate and scale a 3-d object about a point (x, y, z).
- Q5)** What is the difference between Gouraud and phong shading? Which is better?
- Q6)** Describe in brief the z-buffer algorithm.

Section – C

(2 × 10 = 20)

- Q7)** Name the different types of Bezier curves and their applications. Discuss how the Bezier curves are constructed.
- Q8)** What is 3-D viewing? Explain in brief the role of parallel projections in 3-D visualization.
- Q9)** Write short notes on any two:
 - a) Illumination models
 - b) Drum Plotter
 - c) Text Clipping.

