

B. Tech.

Sub Code: CS- 309 (Computer Graphics)

Paper ID- A0468

Time : 3hrs

Max Marks : 60

Note: Attempt any two questions from Section C, four from section B, Section A is compulsory.

Section A

(2x10)

Q1

- (a) What is Half-toning.
- (b) Differentiate between Gouraud and Phong shading?
- (c) What is a big problem with the painter's algorithm?
- (d) Define the terms: Screen and world coordinates with example.
- (e) What do you mean by anti-aliasing and aspect-Ratio?
- (f) Name various Character generation techniques.
- (g) Give the transformation matrix for scaling a point $P(x,y,z)$ about x-axis.
- (h) How vector CRTs are different from Raster CRTs.
- (i) Define the terms: Rendering and Animation.
- (j) List various Region filling algorithms.

Section B

- Q2 Describe the working of raster scan display. (5)
- Q3 What is 3-D viewing? Explain in brief the role of perspective projections in 3-D visualization. (5)
- Q4 Discuss the construction procedure and applications of Bezier curves. (5)
- Q5 Name various line drawing algorithms? Which is the most efficient one? Explain in detail the Bresenham's line drawing algorithm and discuss its complexity. (5)
- Q6 What is Clipping and its need? Can we use the Graphics clipping algorithms for the Text clipping? Name various Graphics and Text clipping algorithms. (5)

Section C

- Q7 What is "Composite Transformation" in terms of Computer Graphics? Name various types of transformations. Derive the transformation matrices for rotating and Translating a 2-D object about a given point $p(x,y)$. (10)
- Q8 What do you mean by Hidden surface removal and why do we need it. Describe in brief any one algorithm for removal of Hidden surfaces. (10)
- Q9 Write short note on: Illumination Models and Interactive Computer graphics techniques. (10)