

Computer Graphics
(IT-306, June-07)

Note: Attempt any five questions.

1. a) Discuss the interactive and non interactive Graphics system.
b) Define resolution and coordinate precision of display system.
c) Describe CRT. What is the difference between raster and random scan display?
2. a) explain the following devices:-
 - i) Tablet
 - ii) Mouse
 - iii) Light Penb) Discuss the advantages and disadvantages of the DDA and Bresenham's Line drawing Algorithm.
c) Describe the naming schemes involved in graphic packages.
3. a) What are the Basic transformations? Explain shearing transformation in detail with neat diagram.
b) Prove that a uniform scaling ($S_x = S_y$) and a rotation form a commutative pair of operations but that, in general, scaling and rotation are not commutative operations.
c) Use the Cohen-Sutherland out code Algorithm to clip two lines P1 (70, 20), P2 (100, 10) against window A (50, 10), C (80, 40).
4. a) Draw the flow chart to illustrate the Cohen Sutherland algorithm.
b) Explain the following:-
 - i) Homogeneous Scaling
 - ii) Magnification
 - iii) Scalingc) Discuss spatial coherence and scan line coherence. How are polygons scan converted?
5. a) Describe the hidden surface removal problem, give its solution. Write the name of the solution algorithms and describe any one of them.
b) State the advantages and disadvantages of Painter algorithm.
c) Discuss the issues in graphic system design.
6. a) Discuss the solid area scan conversion algorithm. What are the advantages and disadvantages?
b) What do you understand by Projection? What are the various perspective projection anomalies?
c) Discuss the Depth Buffer algorithm. What are its limitations?
7. a) describe curve generation techniques that use curve fitting. Contrast Biezer's method of curve generation with above techniques.
b) Discuss the following:-
 - i) Parametric Continuity conditions
 - ii) Geometric Continuity conditions
8. Explain the following:-
 - i) Workstation Transformation
 - ii) Graphic Kernel System
 - iii) Storage tube display
 - iv) 3-D Graphic Package