

[07 – 3112]

III/IV B.Tech. DEGREE EXAMINATION.

First Semester

Computer Science and Engineering

Elective I — COMPUTER GRAPHICS

(Common with I.T and Dual Degree Programme  
in S.E. and I.T.)

(Effective from the admitted batch of 2004–2005)

Time : Three hours

Maximum : 70 marks

First question is compulsory.

Answer any FOUR from the remaining.

All questions carry equal marks.

Answer all parts of any question at one place.

1. Explain the following :

- (a) CAD
- (b) Visualization
- (c) Aspect ratio
- (d) 2 dimensional reflections
- (e) Types of Clippings

- (f) 3-dimensional rotation matrices in X, Z directions
  - (g) 3-dimensional viewing pipe line.
2. (a) Explain the difference between Raster scan and Random scan displays.  
(b) Explain Graphics input devices.
  3. (a) Describe midpoint circle – algorithm.  
(b) Given radius = 8, by using midpoint circle algorithm, plot the pixel positions.
  4. (a) Explain matrix representations in homogenous coordinates.  
(b) Explain transformations between coordinate systems.
  5. (a) Explain window-to-viewport coordinate transformation.  
(b) Describe Liang-Barsky line clipping algorithm.
  6. (a) Describe structure hierarchies.  
(b) Explain Windows and Icons.

7. (a) Explain Beizer curves.
- (b) Describe B-spline surfaces.
8. (a) Explain 3 dimensional rotation with respect to an arbitrary axis.
- (b) Explain types of perspective projections.