

Course: SYBSc(IT) / Subject: Computer Graphics & Animation / SEM: IV

Time: 2½ Hours

Marks: 75

- Instructions: (a) All questions are compulsory.  
(b) Figure to the right indicate marks  
(c) Support answers with examples/ diagrams wherever necessary



Q.1 Attempt any 3 of the following:

[15M]

1. Write a short note on display devices of computer graphics.
2. Distinguish between refresh graphics Raster devices and calligraphic refresh graphics devices.
3. Write a short note on video controller.
4. Explain the working of Bresenham's line drawing algorithm.
5. Explain the concept of clipping polygon.
6. Explain the steps of midpoint circle drawing algorithm.

Q.2 Attempt any 3 of the following:

[15M]

1. What is transformation? Explain basics of 2D transformations in detail.
2. Write a note on affine and perspective geometry
3. Explain the concept of vanishing point in detail with diagram.
4. Explain Orthographic projection in detail
5. Explain window to viewport co-ordinate system.
6. Write a short note on reflection through an arbitrary line.

Q.3 Attempt any 3 of the following:

[15M]

1. Explain following:
  - (1) Spectral Radiant energy
  - (2) Spectral Radiant Flux or Radiant power
  - (3) Spectral Radiant Flux density
  - (4) Irradiance and radiant exitance
  - (5) Radiance
2. Explain the concept of photometry in detail.
3. Explain the concept of viewing in 3D.
4. What is color? Explain the concept of colorimetry in brief.
5. Explain Color appearance in brief.
6. Explain the concept of camera model and viewing pyramid with neat-labeled diagram.

Q.4 Attempt any 3 of the following:

[15M]

1. Write a short note on B-Spline Curves
2. Explain different categories of visible surface detection algorithm.
3. Briefly describe Area subdivision method.
4. Explain BSP trees with example.
5. Write a note on curve representation
6. Explain Z-BUFFER algorithm in brief.

Q.5 Attempt any 3 of the following:

[15M]

1. Write a short note on physics based animation.
2. Explain different types of image compression in detail.
3. Briefly explain image enhancement in detail.
4. What is an Image? Explain different file formats of an image.
5. What is character animation? Explain the concept of character animation in brief.
6. Write a short note on deformations.

