

- N.B.: (1) All questions are compulsory.
(2) Make suitable assumptions wherever necessary and state the assumptions made.
(3) Answer to the same question must be written together.
(4) Numbers to the right indicated marks.
(5) Draw neat labelled diagrams wherever necessary.
(6) Use of Non-programmable calculators is allowed.

1. Attempt any three of the following:

[15]

- Explain the method of circle drawing using midpoint circle algorithm.
- Explain different types of video formats.
- How does a mechanical mouse work?
- Write a short note on Cathode Ray Tube.
- What are various problem of aliasing? Explain with example.
- Explain the acceptance and rejection test using bit codes in Cohen-Sutherland line clipping algorithm.

2. Attempt any three of the following:

[15]

- Explain the concept of 3D Homogeneous reflection transformation.
- Explain projection with the help of Oblique transformation.
- Write a short note on three point perspective transformation.
- Explain the concept of 2D scaling and shear transformation.
- Explain the concept of affine transformation.
- Magnify the triangle with vertices A (0, 0), B (1, 1), C (5, 2) to twice its size while keeping C (5, 2) fixed.

3. Attempt any three of the following:

[15]

- Explain camera model and viewing pyramid with diagram.
- What is viewing? State and explain stages in 3D viewing.
- Describe the transport equation of light.
- Explain LMS color space in detail.
- Write a note on radiometry in detail.
- What is colorimetry? Explain color with the help of colorimetry.

4. Attempt any three of the following:

[15]

- Write a note on depth sorting algorithm in detail.
- Explain the concept of quadratic surfaces.
- What is scan line method? Explain with example.
- Explain in brief BSP trees.
- Write a note on parametric curves and nonparametric curves.
- Explain the concept of cubic splines.

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5. Attempt any three of the following:

[15]

- a. What is an **animation**? Explain character animation.
- b. Write a note **on** histogram equalization.
- c. Distinguish key frame animation with procedural animation.
- d. What is image? Explain different types of an **image**.
- e. Write a note **on** contrast stretching and log transformation in point processing.
- f. Explain the concept of high pass filter with suitable example.

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