

[Time:2.30 Hrs]

[Marks:75]

Please check whether you have got the right question paper.

- N.B:
1. All question are compulsory.
 2. Figures to the right indicate full marks.
 3. Students answering in the regional language should refer in case of doubt to the main text of the paper in English.

- Q.1 Attempt **any three** of the following: 15
- a. Explain Mid-point Circle Algorithm.
 - b. Differentiate between CRT and LCD.
 - c. Explain Bresenham's line drawing algorithm.
 - d. List and explain any five input of computer graphics.
 - e. Consider a line PQ with P (0, 0) and Q (7, 4). Apply DDA algorithm and calculate pixels on this line.
 - f. Explain Cohen-Sutherland line clipping algorithm.
- Q.2 Attempt **any three** of the following: 15
- a. Given a point P (2, 3). Apply 2D reflection about x-axis.
 - b. Explain transformation on unit square.
 - c. Explain process of 2D scaling.
 - d. Explain 3D rotation about X-axis.
 - e. Explain window to viewport transformation.
 - f. Explain Orthographic projection.
- Q.3 Attempt **any three** of the following: 15
- a. Write a short note on colorimetry.
 - b. Write a short note on photometry.
 - c. Write a short note on radiometry.
 - d. Explain different coordinate systems.
 - e. Explain RGB color model.
 - f. Explain canonical view volume (CVV).
- Q.4 Attempt **any three** of the following: 15
- a. Explain BSP trees.
 - b. Explain Painter's algorithm.
 - c. Explain techniques for efficient visible-surface algorithm.
 - d. Explain parametric representation of ellipse.
 - e. Explain properties of a Bezier curve.
 - f. Define curve. What are its types? Explain.
- Q.5 Attempt **any three** of the following: 15
- a. What is image? Explain types of image.
 - b. Write a short note on character animation.
 - c. What is histogram? Explain.
 - d. Explain any five principles of animation.
 - e. Explain low pass average filtering.
 - f. Explain physics based animation.