Q. P. Code: 36150

Total Marks: 75

		_0,	, V,	V _		7.1	υ,	\sim	_^		Ĭ.	10	· 🕸
3		V	d'	, V.		an	Υ.(اير 'ال	80'				
	\sim	1	V	0,	V- 1				アム	₹b′	~	-	Y

N. B.: (1) **All** questions are **compulsory**.

- (2) Make <u>suitable assumptions</u> wherever necessary and <u>state the assumptions</u> made.
- (3) Answers to the same question must be written together.
- (4) Numbers to the **right** indicate **marks**.
- (5) Draw <u>neat labeled diagrams</u> wherever <u>necessary</u>.
- (6) Use of **Non-programmable** calculators is **allowed**.

1. Attempt *any three* of the following:

15

- a. List and explain the graphic devices used in computer graphics.
- b. How does a mechanical mouse work?
- c. Write short note on vector display of computer graphics.
- d. Explain Digital Differential Analyzer (DDA) algorithm.
- e. Explain Sutherland Hodgeman algorithm for polygon clipping with example.
- f. Use the Cohen Sutherland algorithm to clip line P1 (70,20) and p2 (100,10) against a window lower left hand corner (50,10) and upper right hand corner (80,40).

2. Attempt *any three* of the following:

15

- a. What is transformation? Explain translation transformation with the help of example.
- b. Describe homogeneous coordinate system for translation and scaling.
- c. Magnify the triangle with vertices A (0, 0), B (1, 1) and C (5, 2) to twice its size while keeping C (5, 2) fixed.
- d. Explain the matrix representation of 3D translation scaling.
- e. Write a note on 2 point perspective transformation.
- f. Distinguish between cavalier and cabinet projection.

3. Attempt *any three* of the following:

15

- a. Short note on Canonical View Volume (CVV).
- b. Explain combined transformation matrix for viewing in detail.
- c. Write short note on photometry in detail.
- d. What are the various parameters used in color appearance.
- e. Explain LMS color space in detail.
- f. Describe the transport equation of light in brief.

4. Attempt any three of the following:

15

- a. What is visible surface determination? Explain different methods of visible surface determination.
- b. Explain object image space method for efficient visible surface algorithm.
- c. Explain parametric representation of an ellipse.
- d. What is z-buffer algorithm used for? List t advantages and disadvantages.
- e. Briefly explain Painters algorithm with example.
- f. Write short note on quadratic surface.

[TURN OVER]

Q. P. Code: 36150

15

5. Attempt <u>any three</u> of the following:

- a. Explain any two principals of animation with suitable example.
- b. What is key framing? What are the advantages of key framing?
- c. Explain different digital image file formats.
- d. What is image compression? Explain lossless compression technique.
- e. What is image enhancement? Explain frequency domain method of image enhancement.
- f. Explain the concept of median filtering in detail.

