

Paper Code: 3608

Paper Title: **COMPUTER GRAPHICS**

Time: 02:30 Hours

Marks: 70

**Q1 Answer any FIVE from the following: [10]**

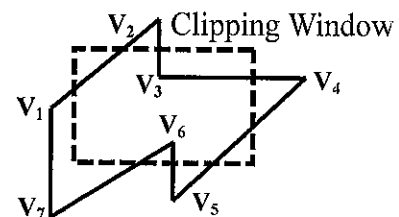
- a. What do you mean by Refresh Rate?
- b. Differentiate Impact Printers and Non-impact Printers.
- c. Which characters are with descenders and kern? Give the figures of those characters.
- d. Specify standard equation for line and slope of the line.
- e. What do you mean by Uniform Scaling? Give example of it.
- f. Explain Point clipping.
- g. Explain Shadow Display Method's illumination components in 3D.

**Q2 Answer any FIVE from the following: [15]**

- a. Write a brief note on Data Glove.
- b. Differentiate Raster Scan Display and Random Scan Display.
- c. Explain the odd-even rule of Inside-Outside Test with suitable example.
- d. Write down a composite matrix for translation then scaling then retranslation operation.
- e. What do you mean by Jaggies and Antialiasing?
- f. Define 9 regions of window boundary in Cohen – Sutherland Line Clipping Algorithm.
- g. Explain 3D viewing pipeline with its figure.

**Q3 Answer any FIVE from the following: [25]**

- a. Explain Classification of Computer Graphics.
- b. Give the "MCA" bit code using Starburst Character Generation Method with its figure.
- c. Explain Reflection Transformation.
- d. Given a triangle having the co-ordinates A(1,1), B(2,4) and C(3,1). Apply the following Transformation one after another.
  - a) Shift the triangle to the right by 3 units and up by 2 units.
  - b) Magnify the triangle to twice of its size.
  - c) Rotate the triangle at  $90^\circ$ .
- e. Explain Window to Viewport co-ordinate transformation.
- f. For a polygon and clipping window shown in below figure. Give the list of vertices after each boundary clipping.



- g. Write a note on 3D Geometric Primitives.

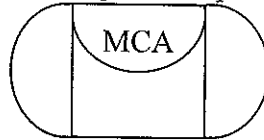
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**Q4 Answer any TWO from the following:****[20]**

- a. Explain Color CRT Monitors with its basic techniques.
- b. Write a program to draw given shape using Mid-point Circle Drawing Algorithm.



- c. Define 3D Viewing. List all the 3D Viewing Methods and also explain in detail.