

Roll No.

Total Pages : 2

BT-8/J-25

48246

COMPUTER GRAPHICS

Paper-PE-CS-A404A

Time Allowed : 3 Hours]

[Maximum Marks : 75

Note Attempt **five** questions in all, selecting at least **one** question from each Unit. All questions carry equal marks.

UNIT-I

1. (a) Write the algorithm for DDA and explain its advantages and disadvantages. 8
- (b) How does Polygon filling differ from Scan line filling. Explain with diagrams. 7
2. (a) Explain various plotting techniques for points and lines in raster graphics. 7
- (b) Write short notes on the following :
 - (i) Display device.
 - (ii) Area filling techniques.

UNIT-II

1. Describe in detail 2D transformations such as translation, rotation, scaling, reflection, and shear. 15

48246/K/1245/550

P. T. O.

Explain the viewing pipeline with necessary steps and diagrams. 7

(b) Explain Homogeneous Coordinate System and its role in transformations. 8

UNIT-III

5. (a) Explain Cohen-Sutherland Line Clipping Algorithm. 8

(b) Explain vanishing point in the context of perspective projection. 7

6. (a) Write and explain Sutherland-Hodgeman Polygon Clipping Algorithm with an example. 7

(b) Discuss various types of projection and explain Parallel and Perspective Projections. 8

UNIT-IV

7. (a) Describe in detail Bezier Curves and their properties. How are they used in graphics? 8

(b) Explain painter's algorithm and its limitations. 7

8. Explain depth buffer and scan-line coherence algorithms used for hidden surface removal in detail. 15