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BT–5/D–21 **45200**

COMPUTER GRAPHICS

Paper–PC–IT–303A

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) What is Computer graphics? Discuss its major applications. 7

   (b) List and explain the Operating characteristics for the following display devices : 8

   (i) Light Pen (ii) Digitizers.

2. (a) Write an explain the Bresenham's algorithm for line drawing. 7

   (b) Write and explain mid-point circle drawing algorithm. 8

UNIT–II

3. Prove that the Multiplication of transformation matrices for each of the following sequence of operations is commutative : 15

   (i) Two successive rotations

   (ii) Two successive translations.

   (iii) Two successive scalings.

4. Write and explain the Sutherland-Hodgeman algorithm for polygon clipping. 15

UNIT–III

5. Explain the following in detail : 15

   (a) Parallel Projection. (b) Perspective Projection.

   (c) Depth cueing.

6. How can you perform : 15

(a) Scaling

(b) Translation

(c) Rotation

(d) Reflection , in three-dimensional transformation.

UNIT–IV

7. What is Spline representation? Explain various type of Spline representations in detail. 15

8. (a) Write and explain the depth-buffer algorithm for detecting visible surface. 7½

(b) Explain the working of scan line coherence algorithm using suitable example. 7½