

JE – 2220

IV Semester M.C.A. Examination, August/Sept. 2003
(New Scheme) (2000 Onwards)
IV MCA3 : COMPUTER GRAPHICS

Time : 3 Hours Max. Marks : 80

***Instruction** : Answer **any five** full questions choosing at least **two** from **each** Part.*

PART – A

1. a) Draw the Architecture of a raster-graphic system with display processor. Explain raster scan display processor. **8**

   b) Set up a parallel version of Bresenham's line algorithm for straight lines of any slope. **8**

2. a) Write a procedure for filling the interior of any specific set of "Polygon" vertices using non zero winding number rule to identify interior regions. **8**

   b) Set up a procedure for a parallel implementation of the midpoint circle algorithms. **8**

3. a) Develop an algorithm for implementing a colour look up table and the 'set colour representation' operation. **8**

   b) What are the different attributes ? Explain any one's implementation. **8**

4. a) Develop an algorithm for adjusting the height and width of character defined as rectangular grid patterns. **8**

   b) Define rotation. Derive the rotation transformation matrix for a counter clockwise rotation about a point (x, y). **8**

PART – B

5. a) Derive the window-to-viewport transformation equations by first scaling the window to the size of viewport and then translating the scaled window to the viewport position. **8**

   b) Write a procedure to implement the Liang-Barsky Line-Clipping algorithm. **8**

6. a) Write a procedure to implement the unpoststructure function on a raster system. **8**

   b) Write short notes on Graphics software. **8**

7. a) Discuss the method that could be employed in a pattern-recognition procedure to match input character against a stand library of shapes. **8**

   b) Design an implementation of the input function for request mode. **8**

8. a) Explain Factal-Geometry Method for factal dimension. **8**

   b) Write a program to calculate parameter A, B, C & D for any set of three dimension plane surface defining an object. **8**