RK–2166

(3 Hours) [Total Marks : 100]

1. Question no. 1 is compulsory.
2. Solve any **four** questions from remaining six questions.
3. Make suitable assumption wherever necessary and state them clearly.
4. Figure to the right indicate full marks.

1. (a) What are different applications of Computer Graphics ? 5
   (b) Explain even-odd method for inside test of polygon. 5
   (c) Write Bresenham's line drawing algorithm. Calculate the pixel co-ordinates
   of line PQ using Bresenham's Algorithm, Where P1(20,20) and Q = (10,12) 10

2. (a) Explain Scan Line Polygon fill algorithm. 10
   (b) Explain Parallel and Perspective projection. 5
   (c) Derive the matrix for Rotation about an arbitary point for 2D Rotation. 5

3. (a) Describe Virtual Reality. Expalin types of VR Systems. 10
   (b) Derive mathematical representation for Bezier curve. State their properties. 10

4. (a) Explain Cohen-Sutherland line clipping algorithm with example. 10
   (b) Explain Boundry fill and Flood fill algorithm using 8-connected approach
   and State their advantages and disadvantages. 10

5. (a) Describe Halftoning , Thresholding and Dithering in detail. 10
   (b) Describe the various wrapping techniques. 10

6. (a) Explain the graphical rendering pipeline. 10
   (b) Explain in detail any VR Toolkit. 10

7. (a) Explain Raster Scan Displya and Vector Scan Display. 5
   (b) What are advantagesof 3D morphing over 2D morphing. 5
   (c) List the applications of VR .Expalin any two. 5
   (d) Compare the RGB and CMY color model. 5