QP Code : 5526

(3 Hours)

[Total Marks : 60

N. B (1) Question No. 1 is compulsory.
      (2) Solve any three questions from the remaining
      (3) Assume suitable data wherever necessary.

1. (a) State what is meant by clipping. Explain any one clipping algorithm 05
   (b) Explain flood fill algorithm in detail 05
   (c) Differentiate between random scan and raster scan technique 05
   (d) Explain the various color models in detail 05

2. (a) Define window and viewport. Derive window to viewport transformation 10
   (b) Explain what is meant by Bezier curve. Also explain how a Bezier surface 10
       can be generated from Bezier curve

3. (a) What is meant by parallel and perspective projections? Derive the matrix 10
       for perspective projections
   (b) Explain the steps used in rotation of 2 D object about an arbitrary axis and 10
       hence derive the matrix for the same

4. (a) Explain midpoint circle algorithm. Explain the same to plot a circle whose 10
       radius is 10 units
   (b) Explain half toning and dithering techniques in detail 10

5. (a) Derive Bressenhams line drawing algorithm for lines with slope < 1 10
   (b) Explain Gourand and Phong shading techniques in detail 10

6. Write short notes on:- (any two) 20
   (a) Polygon clipping method.
   (b) OpenGL
   (c) Sweep representations

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