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[5057]-268**S.E. (I.T.) (Second Semester)****EXAMINATION, 2016****COMPUTER GRAPHICS****(2012 PATTERN)****Time : Two Hours****Maximum Marks : 50**

- N.B. :—** (i) Answer Q. No. 1 or Q. No. 2, Q. No. 3 or Q. No. 4,
Q. No. 5 or Q. No. 6, Q. No. 7 or Q. No. 8.
- (ii) Neat diagrams must be drawn wherever necessary.
- (iii) Figures to the right indicate full marks.
- (iv) Assume suitable data, if necessary.

1. (a) What are the steps required to plot the line whose slope is between 0 to 45° using Bresenham's method ? [6]
- (b) Write a pseudo-C algorithm for polygon filling by seed fill polygon. [6]

Or

2. (a) List various polygon filling algorithms. Explain scan line algorithm with mathematical formulation. [6]
- (b) Explain DDA algorithm for line with example. Discuss its advantages and disadvantages. [6]
3. (a) Explain Cohen-Sutherland Algorithm with the help of suitable example. [6]
- (b) Obtain the 3-D transformation matrices for : [6]
- (i) Translation
- (ii) Scaling
- (iii) Rotation about an arbitrary axis.

P.T.O.

Or

4. (a) Describe Sutherland-Hodgman polygon clipping algorithm. What is its limitation ? [6]
(b) What is the concept of vanishing point in perspective projection ? Explain with diagram. [6]
5. (a) Compare Gouraud and Phong's method of shading. [7]
(b) Explain HSV and CMY colour model. [6]

Or

6. (a) Explain CIE chromaticity diagram; also explain how RGB to CMY conversion is done. [7]
(b) Compare RGB and HSV color model. [6]
7. (a) What are the properties of Bezier Curve ? Describe the procedure to generate Bezier Curve. [7]
(b) What do you mean by topological and fractal dimensions ? [6]

Or

8. (a) Explain how fractals are used to generate fractal surfaces. [7]
(b) Compare Bezier and B-spline techniques for curve generation and discuss properties. [6]