A

B. Tech. Degree V Semester Examination November 2014

CS 1504 COMPUTER GRAPHICS
(2012 Scheme)

Time: 3 Hours   Maximum Marks: 100

PART A
(Answer *ALL* questions)

(8 x 5 = 40)

I.   (a)   Explain picture generation in raster scan displays.
     (b)   Describe DDA algorithm.
     (c)   Explain 2D reflection transformation.
     (d)   Describe parametric continuity conditions for curves.
     (e)   Derive the expressions for final projected points for oblique parallel projection.
     (f)   Describe A-buffer algorithm.
     (g)   Explain various classes of fractals. What is meant by fractal dimension?
     (h)   Describe phong specular reflection model.
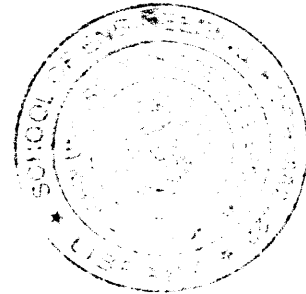
PART B

(4 x 15 = 60)

II.   (a)   Explain midpoint circle algorithm.   (9)
      (b)   Find the points of the circle with centre as (10, 5) and radius 5.   (6)

                                         OR

III. (a)   Explain scan line filling algorithm.   (8)
      (b)   Describe flood filling algorithm. What is meant by 4 connected and 8   (7)
            connected filling methods?

IV.   (a)   Explain neatly 2D transformation translation, scaling and rotation. Write   (10)
            homogeneous matrix for each transformation.
      (b)   A point (10, 20) is rotated 30° anticlockwise with respect to the point (5, 5). (5)
            Find the new co-ordinates.

                                         OR

V.   (a)   Explain Liang Barsky line clipping algorithm with an example.   (10)
      (b)   Describe Sutherland Hodgeman polygon clipping method.   (5)

VI.   (a)   Describe Painter's algorithm.   (9)
      (b)   Explain Backface detection method.   (6)

                                         OR

VII. (a)   Explain perspective projection.   (8)
      (b)   Describe screen subdivision method for hidden surface elimination.   (7)

VIII.   Explain surface rendering methods.   (15)

                                         OR

IX.   Describe various types of colour systems.   (15)

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