6. Explain DDA line drawing algorithm.

7. What do you understand by scaling? Show the complete steps to scale the square ABCD where A (0,0), B (3,0), C (3,3) and D (0,3) by 3 units in X direction and 3 units in Y direction w.r.t. origin.

8. Write in short about window to view port transformation.

9. Derive the rotation matrix of a point rotated by angel Ø.

10. Explain any one of the line clipping algorithm with example.

Section-C

Note: Attempt any one question. Each question carries 13 marks. (13x1=13)

11. Write in short about the following:
    (a) Raster Graphics.
    (b) Vectors Graphics.
    (c) Different types of coherence.
    (d) Difference between image processing and computer graphics.

12. Write in short about multimedia, its usage, components of multimedia.

Roll No.....

BCA-401(N)

B.C.A (Semester-IV) Examination-2014
(New Course)
Paper: I
Computer Graphics and Multimedia Application

Time: Three Hours] [Maximum Marks: **75**

Note: Section 'A' is compulsory. Attempt any six questions from Section 'B' and any one question from Section 'C'.

Section-A

Note: Both questions are compulsory.

1. Multiple choices. **(1 marks each)**
   (i) Pixel is.
      (a) Smallest addressable point on the screen
      (b) Input device
      (c) A memory block
      (d) A data structure

   (ii) Aspect ratio is.
      (a) Ratio of images width to its height
      (b) Ratio of window to view port height
      (c) Ratio of image's intensity levels
      (d) Ratio of image's height to its width

(iii) Isometric projection is.

(a) An orthographic projection
(b) A perspective projection
(c) An oblique projection
(d) A multi view projection

(iv) Algorithm for drawing a circle is

(a) Bresenham's Algorithm
(b) DDA algorithm
(c) Ellipse axis rotation
(d) Shearing transformation

(v) The slope of the line joining the points (1,2) and (3,4) is

(a) 0 (b) 1
(c) 2 (d) 3

(vi) The property that adjacent pixels are likely to have same characteristics is called

(a) Spati coherence
(b) Area coherence
(c) Scan line coherence
(d) Pixel coherence

2. Fill in the blanks: **(2 marks each)**

(i) A 512x512 raster requires .....bits in a bit plane.
(ii) The Cohen-Sutherland line clipping algorithm divides the entire region into..... number of sub-regions.
(iii) The equivalent representation of a two dimensional point (x,y) in the homogeneous coordinate system is .....
(iv) ..... is a process of changing the position of an object.
(v) Multimedia includes.....
(vi) ..... curves are used in computer graphic to produce curves which appear reasonably smooth at all scales.
(vii) ..... is a transformation which either magnifies or reduces the size of the object.

Section-B

Note: Attempt any six questions. Each question carries 7 marks **(7x6=42)**

3. Write about the functions available in C for pixel manipulation.

4. Explain using a diagram how does Raster refresh graphics device works.

5. Write the steps required to plot a line whose slope is between 0° and 45° using the slope intercept equation.