EASTERN UNIVERSITY, SRILANKA

THIRD EXAMINATION IN SCIENCE –2007/2008

FIRST SEMESTER (Dec./Jan. 2008)

CS 351 – PRACTICAL WORK ON CS301

(Proper and Repeat)

Answer all questions   **Time allowed: 02 hours**

Q1.

(i)   Write a C++ function called *DDA* (int xa,int ya,int xb,int yb) to implement the *Digital differential analyzer (DDA)* line drawing algorithm, where (xa,ya) and (xb,yb) are end points of the line.

(ii) Using the above line drawing function, write another function called **Square** (int xa, int ya, int xb, int yb), and using this function to create the picture as given below.
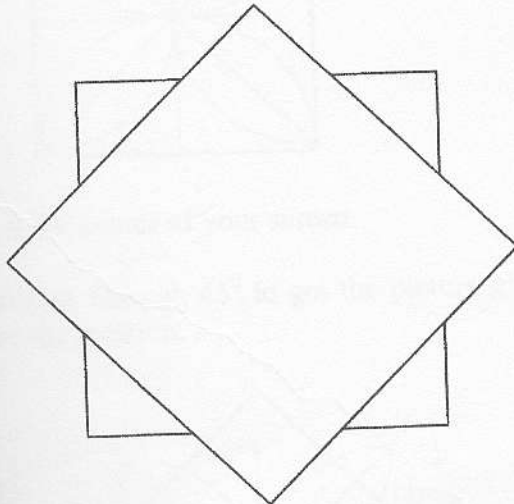
(iii)   Using the part (ii), fill the picture with any color as given below.

Q2
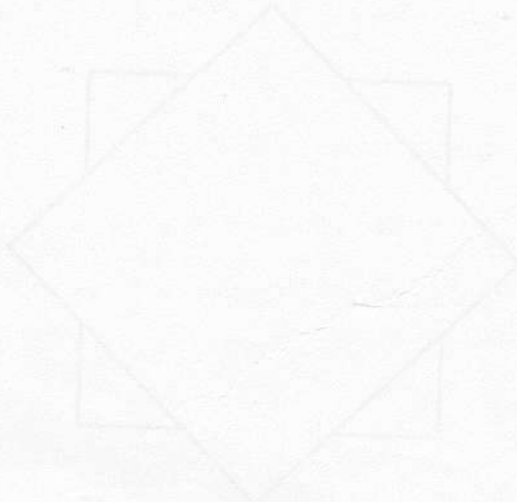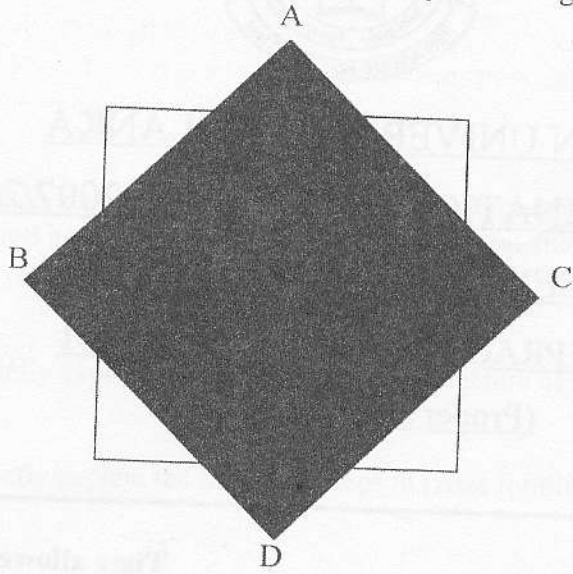
(i) Create a class called *pixel* to represent xy pixel position in display screen with some attributes and implement the method given below to perform the following task.

Private attributes:

Int x,y;   // To store the x,y coordinates,

Public methods:

Pixel();   //A default constructer to initialize the x,y to default values.

Pixel (int x1,int y1);   // A class constructer to initialize the x,y to values.

Void plot (int cl);   //plot the xy coordinates pixel.
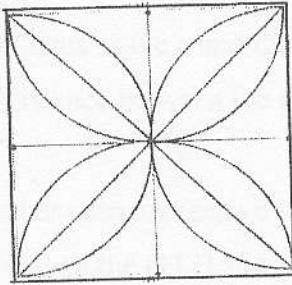
Void rotate (float theta, pixel pivot);   //rotate this pixel through theta degree to respect to pivot

Void scale (float sx,float sy, pixel origin);   // scale the pixel of the creating object.

(ii) Using midpoint circle algorithm, construct a *mypicture* class and create the picture as given below.

(iii) Display them in the center of your screen.

(iv) Rotate your picture through 45^0 to get the picture given below, and scale only the square after the rotation.