# EASTERN UNIVERSITY, SRI LANKA
EXTERNAL DEGREE
THIRD EXAMINATION IN SCIENCE –2009/2010
FIRST SEMESTER (May /June 2012)
EXTCS 351 – PRACTICAL WORK ON EXTCS301

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

Q1.

(i)   Write a C++ function called **lineDDA** (int x0,int y0,int x1,int y1) to implement the *Digital differential analyzer (DDA)* line drawing algorithm, where (x0,y0) and (x1,y1) are end points of the line.

(ii) Write a C++ function called **midCIR** (int xc, int yc, int r) to implement the midpoint circle drawing algorithm, where (xc, yc) are center points of the circle and r is radius of the circle.

(iii) Create the picture as given below using the above line drawing and circle drawing function.
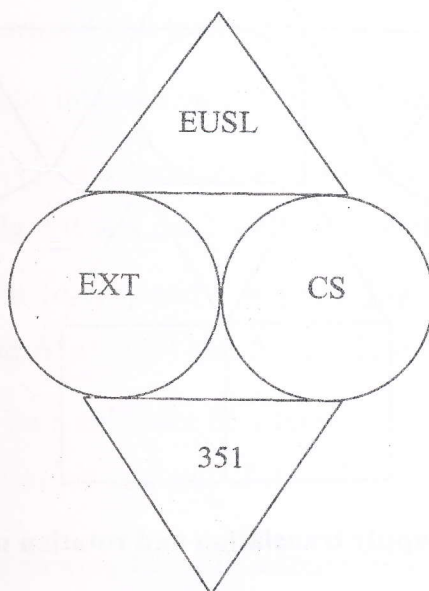
Q2.

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

Public attributes:

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

Public methods:

pix();   //A default constructor to initialize the x,y to default values

pix (int x1,int y1);   // A user define constructor to initialize the x,y to values.

setx();   //set the x coordinate.

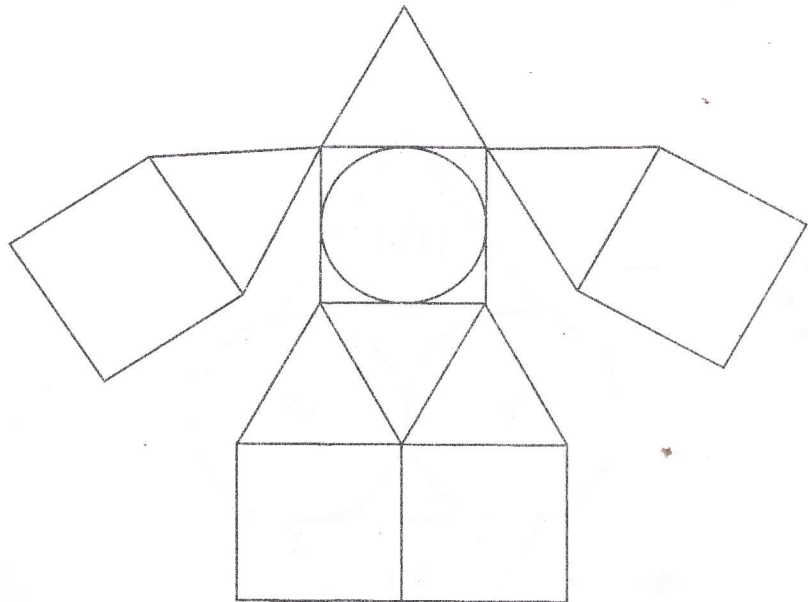sety();   //set the y coordinate.

getx();   //return the x coordinate.

gety();   //return the y coordinate.

void plot (int cl);   //plot the xy coordinates.

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

(You should apply translation and rotation methods)