NAME : Vivian Ludrick
BRANCH : S.E. Comps – A Batch – C
ROLL NO. : 9914
SUBJECT : Computer Graphics
TOPIC : Experiment No. 2 **Midpoint Circle**

CODE :

```
#include<stdio.h>
#include<graphics.h>

int main()
{
      int xc,yc,x,y,r,p;
      int gd = DETECT, gm;
      initgraph(&gd,&gm,"");
      printf("Enter the center of the circle : ");  //inputs the center of the
circle
      scanf("%d%d" , &xc,&yc);

      printf("Enter the radius of circle :");  //inputs the radius of circle
      scanf("%d" , &r);
      //initializes the initial point to(0,r) i.e. on the +y axis
      x = 0;
      y = r;
      p = 1-r;   //calculates the initial parameter
      do{
            //prints the points of the circle till the loop ends at x>y
            putpixel(xc+x,yc+y,4);
            putpixel(xc+x,yc-y,4);
            putpixel(xc-x,yc+y,4);
            putpixel(xc-x,yc-y,4);
            putpixel(xc+y,yc+x,4);
            putpixel(xc+y,yc-x,4);
            putpixel(xc-y,yc+x,4);
            putpixel(xc-y,yc-x,4);
                              // so many putpixels are needed cause we need to
draw in all the 8 octant by referencing one octant so we need to shift x and y
based on the octant
                           x = x + 1;

            if(p<0)
            {
```

```
                  p = p + 2*x + 3;  //next decision parameter when p<0
            }
            else
            {
                  y = y - 1;
                  p = p + 2*x - 2*y + 5;  //next decision parameter when p>=0
            }
      }while(x<=y);
      closegraph();
      return 0;
}
```

OUTPUT FOR CODE :