**Manthan Chauhan (1900290149058)**

**SEM 5th A**

**Question:-** Mid-Point Learning Algorithm.

**Answer:-**

**Algorithm:-**

**Step1:** Put x =0, y =r in equation 2  
            We have p=1-r

**Step2:** Repeat steps while x ≤ y  
            Plot (x, y)  
            If (p<0)  
Then set p = p + 2x + 3  
Else  
            p = p + 2(x-y)+5  
            y =y - 1 (end if)  
            x =x+1 (end loop)

**Step3:** End

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**Program:-**

#include<graphics>

#include<conio.h>

#include<stdio.h>

void main()

{

int x,y,x\_mid,y\_mid,radius,dp;

int g\_mode,g\_driver=DETECT;

clrscr();

initgraph(&g\_driver,&g\_mode,"C:\\TURBOC3\\BGI");

printf("\* MID POINT Circle drawing algorithm \*\n\n");

printf("\nenter the coordinates= ");

scanf("%d %d",&x\_mid,&y\_mid);

printf("\n now enter the radius =");

scanf("%d",&radius);

x=0;

y=radius;

dp=1-radius;

do

{

putpixel(x\_mid+x,y\_mid+y,YELLOW);

putpixel(x\_mid+y,y\_mid+x,YELLOW);

putpixel(x\_mid-y,y\_mid+x,YELLOW);

putpixel(x\_mid-x,y\_mid+y,YELLOW);

putpixel(x\_mid-x,y\_mid-y,YELLOW);

putpixel(x\_mid-y,y\_mid-x,YELLOW);

putpixel(x\_mid+y,y\_mid-x,YELLOW);

putpixel(x\_mid+x,y\_mid-y,YELLOW);

if(dp<0) {

dp+=(2\*x)+1;

}

else{

y=y-1;

dp+=(2\*x)-(2\*y)+1;

}

x=x+1;

}while(y>x);

getch();

}

**Output:-**

