(RCA-551) Computer Graphics & Animation

ASSIGNMENT -4

Aim:

Write a program to implement Midpoint circle drawing algorithm.

Midpoint Circle Drawing 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

Program to implement Midpoint Circle Drawing Algorithm:

```
1. #include<graphics.h>
2. #include<conio.h>
3. #include<stdio.h>
4. void main()
5. {
6. int x,y,x_mid,y_mid,radius,dp;
7. int g_mode,g_driver=DETECT;
8. clrscr();
9. initgraph(&g_driver,&g_mode,"C:\\TURBOC3\\BGI");
10.       printf(" MID POINT Circle drawing algorithm \n\n");
11.       printf("\nenter the coordinates= ");
12.       scanf("%d %d",&x_mid,&y_mid);
13.       printf("\n now enter the radius =");
14.       scanf("%d",&radius);
15.       x=0;
```

```
16.     y=radius;
17.     dp=1-radius;
18.     do
19.     {
20.     putpixel(x_mid+x,y_mid+y,YELLOW);
21.     putpixel(x_mid+y,y_mid+x,YELLOW);
22.     putpixel(x_mid-y,y_mid+x,YELLOW);
23.     putpixel(x_mid-x,y_mid+y,YELLOW);
24.     putpixel(x_mid-x,y_mid-y,YELLOW);
25.     putpixel(x_mid-y,y_mid-x,YELLOW);
26.     putpixel(x_mid+y,y_mid-x,YELLOW);
27.     putpixel(x_mid+x,y_mid-y,YELLOW);
28.     if(dp<0) {
29.     dp+=(2*x)+1;
30.     }
31.     else{
32.     y=y-1;
33.     dp+=(2*x)-(2*y)+1;
34.     }
35.     x=x+1;
36.     }while(y>x);
37.     getch();
38.     }
```

Output:-