

NAME = Laksham Rautan

Class Rollno = 38

Subject = Computer graphic Lab

Course = BCA (6th)

Section = B

University Rollno = 1121119

Admission no = 18211123

Signature Laksham R

Set = B

Q3) write an algorithm and program to implement Bresenham circle drawing algorithm

Code ↴

```
#include <stdio.h>
#include <graphics.h>
void main()
```

{

```
int gd = DETECT, gm;
```

```
int r, x, y, P, xc = 320, yc = 240;
```

```
printf("Enter the radius");
```

```
scanf("%d", &r);
```

```
initgraph(&gd, &gm, "");
```

```
x = 0;
```

```
y = r;
```


Putpixel($x_c + x, y_c - y \cdot 1$);

$P = P - (2 + x);$

for($x = 0; x \leq y; x++$)

{

if($P < 0$)

{

$y = y;$

$P = (P + (4 * x) + 6);$

}

else

{

$y = y - 1;$

~~Re~~ $P = P + ((4 * (x - y) + 10))$

}

Putpixel($x_c + x, y_c - y \cdot 1$);

Putpixel($x_c - x, y_c - y \cdot 2$);

Putpixel($x_c + x, y_c + y \cdot 3$);

Putpixel($x_c - x, y_c + y \cdot 4$);

Putpixel($x_c + y, y_c - x \cdot 5$);

Putpixel($x_c - y, y_c - x \cdot 6$);

Putpixel($x_c + y, y_c + x \cdot 7$);

Putpixel($x_c - y, y_c + x \cdot 8$);

3

getch():
closegraph():

3

Circle Drawing algorithm:

Step1: Assign Starting Point as

$$x_0 = 0$$

$$y_0 = R$$

Step2: calculate the value of initial decision parameter to

$$P_0 = 3 - 2R$$

Step3-03

case $P_k < 0$

$$x_{k+1} = x_k + 1$$

$$y_{k+1} = y_k$$

$$P_{k+1} = P_k + 4x_{k+1} + 6$$

$P_k > 0$

$$x_{k+1} = x_k$$

$$y_{k+1} = y_k - 1$$

$$P_{k+1} = P_k + 4x_k - 4y_{k+1} + 10$$

Step 04 \rightarrow If (x_0, y_0) is not $(0, 0)$ then x_{plot}

$$x_{plot} = x_c + x_0$$

$$y_{plot} = y_c + y_0$$

Step 5 \rightarrow $x_{plot} \Rightarrow y_{plot}$

Enter co-ordinates of first point: 300 350
Enter co-ordinates of second point: 400 500

Windows BGI

—

□

