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Class - BCA 6 B

Subject - Computer Graphics.

Ans:- **Algorithm.**

1. If $d <= 0$, then $Nx+1, Yx+1, P$ is to be chosen as next pixel
2. If $d > 0$, then $Sx+1, P-1x, +1, P-1$ is to be chosen as the next pixel

Algorithm.

Step 1 - Get the co-ordinates of the centre of the circle and radius and store them in x, y and R respectively.
Set $P = 0$ and $Q = R$

Step 2 - Set decision parameter $D = 3 - 2R$

Step 3 - Repeat through step 8 while $P \leq Q$

Step 4 - call Draw Circle
X, Y, P, QX, Y, PQ

Step 5 - Increment the value of P

Step 6 - If $D < 0$ then $D = D + 4P + 6$.

Step 7 - Else set $R = R - 1$, $D = D + 4P - 4Q + 10$

Step 8 - call Draw Circle
X, Y, P, QX, Y, PQ

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Ans 3. 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(xc + x, yc - y, 7);
p = 3 - (2 * r);
for (x = 0; x <= y; x++)
{
if (p < 0)
{
y = y;
p = (p + (4 * x) + 6);
}
else
{
y = y - 1;
p = p + ((4 * (x - y) + 10));
}
putpixel(xc + x, yc - y, 1);
putpixel(xc - x, yc - y, 2);
putpixel(xc + x, yc + y, 3);
putpixel(xc - x, yc + y, 4);
```

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```
putpixel (xc+y, yc-x, 5);
putpixel (xc-y, yc-x, 6);
putpixel ( xc+y, yc+x, 7);
putpixel (xc-y, yc+x, 8);
 }
  getch();
   closegraph();
  }
```

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