CODE:

```
#include <iostream>
#include <graphics.h>
#include <stdlib.h>
using namespace std;
class dcircle
{
private: int x0, y0;
public:
dcircle()
{
x0=0;
y0=0;
}
void setoff(int xx, int yy)
{
x0=xx;
y0=yy;
}
void drawc(int x1, int y1, int r)
{
float d;
int x,y;
x=0;
y=r;
d=3-2*r;
do
```

```
{
putpixel(x1+x0+x, y0+y-y1, 15);
putpixel(x1+x0+y, y0+x-y1,15);
putpixel(x1+x0+y, y0-x-y1,15);
putpixel(x1+x0+x,y0-y-y1,15);
putpixel(x1+x0-x,y0-y-y1,15);
putpixel(x1+x0-y, y0-x-y1,15);
putpixel(x1+x0-y, y0+x-y1,15);
putpixel(x1+x0-x, y0+y-y1,15);
if (d<=0)
{
d = d+4*x+6;
}
else
{
d=d+4*(x-y)+10;
y=y-1;
}
x=x+1;
}
while(x<y);
}
};

class pt
{
protected: int xco, yco,color;
```

```
public:
pt()
{
xco=0,yco=0,color=15;
}
void setco(int x, int y)
{
xco=x;
yco=y;
}
void setcolor(int c)
{
color=c;
}
void draw()
{
putpixel(xco,yco,color);
}
};
class dline:public pt
{
private: int x2, y2;
public:
dline():pt()
{
x2=0;
y2=0;
```

```
}
void setline(int x, int y, int xx, int yy)
{
pt::setco(x,y);
x2=xx;
y2=yy;
}
void drawl( int colour)
{
float x,y,dx,dy,length;
int i;
pt::setcolor(colour);
dx= abs(x2-xco);
dy=abs(y2-yco);
if(dx>=dy)
{
length= dx;
}
else
{
length= dy;
}
dx=(x2-xco)/length;
dy=(y2-yco)/length;
x=xco+0.5;
y=yco+0.5;
i=1;
```

```
while(i<=length)
{
pt::setco(x,y);
pt::draw();
x=x+dx;
y=y+dy;
i=i+1;
}
pt::setco(x,y);
pt::draw();
}
};
int main()
{
int gd=DETECT, gm;
initgraph(&gd, &gm, NULL);
int x,y,r, x1, x2, y1, y2, xmax, ymax, xmid, ymid, n, i;
dcircle c;
cout<<"\nenter coordinates of centre of circle : ";
cout<<"\n enter the value of x : ";
cin>>x;
cout<<"\nenter the value of y : ";
cin>>y;
cout<<"\nenter the value of radius : ";
cin>>r;
xmax= getmaxx();
ymax=getmaxy();
```

```
xmid=xmax/2;
ymid=ymax/2;
setcolor(1);
c.setoff(xmid,ymid);
line(xmid, 0, xmid, ymax);
line(0,ymid,xmax,ymid);
setcolor(15);
c.drawc(x,y,r);
pt p1;
p1.setco(100,100);
p1.setcolor(14);
dline l;
l.setline(x1+xmid, ymid-y1, x2+xmid, ymid-y2);
cout<<"Enter Total Number of lines : ";
cin>>n;
for(i=0;i<n;i++)
{
cout<<"Enter co-ordinates of point x1 : ";
cin>>x1;
cout<<"enter coordinates of point y1 : ";
cin>>y1;
cout<<"Enter co-ordinates of point x2 : ";
cin>>x2;
cout<<"enter coordinates of point y2 : ";
cin>>y2;
l.setline(x1+xmid, ymid-y1, x2+xmid, ymid-y2);
l.drawl(15);
```

```
}
cout<<"\nEnter coordinates of centre of circle : ";
cout<<"\n Enter the value of x : ";
cin>>x;
cout<<"\nEnter the value of y : ";
cin>>y;
cout<<"\nEnter the value of radius : ";
cin>>r;
setcolor(5);
c.drawc(x,y,r);
getch();
delay(200);
closegraph();
return 0;
}
```

User Input:

```
enter coordinates of centre of circle :
 enter the value of x : 100

enter the value of y : 70

enter the value of radius : 30
Enter Total Number of lines : 3
Enter co-ordinates of point x1 : 40
Enter co-ordinates of point x1 : 40
enter coordinates of point y1 : 40
Enter co-ordinates of point x2 : 100
enter coordinates of point y1 : 40
Enter co-ordinates of point x2 : 100
Enter co-ordinates of point x2 : 100
enter coordinates of point y2 : 120
Enter co-ordinates of point x1 : 40
enter coordinates of point y1 : 40
Enter co-ordinates of point x2 : 160
enter coordinates of point y1 : 40
Enter co-ordinates of point x2 : 160
Enter co-ordinates of point x2 : 160
enter coordinates of point y2 : 40
Enter co-ordinates of point x1 : 160
enter coordinates of point y1 : 40
Enter co-ordinates of point x2 : 100
enter coordinates of point y2 : 120

Enter coordinates of centre of circle :
 Enter the value of x : 100
Enter coordinates of centre of circle :
 Enter the value of x : 100
 Enter the value of x : 100

Enter the value of y : 70
Enter the value of y : 70

Enter the value of radius : 60
```

OUTPUT: