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SEM-6 SUBJECT- COMPUTER GRAPHICS & ANIMATION
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Q3: Algorithm:

Step1: Start
Step2: Declare xc, yc, r variables xc, yc for center of circle and r for radius.
Step3: Enter the value of xc and yc.
Step4: Enter the value of r
Step5: Pass the value to Bresehnam function
Step6: In Breshnam function declare x as 0, y as r and d as 3-2r
Step7: Pass xc, yc, x, r value to Eight function
Step8: check if x is greater than equal to y

Step 9: If step 8 is right than check if d is less than equal to 0

Step 10: If step 9 is right than calculate d as d + (4 * x) + 6

Step 11: If Step 9 is wrong than calculate d as d + (4 * x) - (4 * y) + 10 and int y as y-1 and x as y-1.

Step 12: Pass the value to Eight functio of xc, yc, x and y

Step 13: In Eight function plot eight point by using concept of eight way symmetry The center is (xc and yc), and RED for colors.

putpixel (x+xc, y+yc, RED);
putpixel (x+xc, -y+yc, RED);
putpixel (-x+xc, -y+yc, RED)
putpixel (-x+xc, y+yc, RED)
putpixel (y+xc, x+yc, RED)
putpixel (y+xc, -x+yc, RED)
putpixel (-y+xc, -x+yc, RED)
putpixel (-y+xc, x+yc, RED)

Q-3: CODE

```
#include <graphics.h>
#include <stdio.h>
#include <stdlib.h>
#include <math.h>

void Eight (int xc, int yc, int x, int y)
{   putpixel (x+xc, y+yc, RED);
    putpixel (x+ xc, -y+yc, RED);
    putpixel (-x+xc, -y+yc, RED);
    putpixel (-x+xc, y+yc, RED);
    putpixel (y+xc, x+yc, 12);
    putpixel (y+xc, -x+yc, 14);
    putpixel (-y+xc, -x+yc, 15);
    putpixel (-y+xc, x+yc, 6);
}
```

```
void Bresenham (int xc, int yc, int r)
{ int x=0, y=r, d=3-(2*r);
  Eight (xc, yc, x, y);
while (x<=y)
  { if (d<=0)
      { d = d+(4*x)+6 }
    else {   d = d+(4*x)-(4*y)+10;
             y = y-1; }
      x = x+1;
      Eight (xc, yc, x, y);
  } }
int main()
{ int xc, yc, r, g, driver = DETECT, gmod, errorcode;
  Initgraph (&gdriver, &gmode, " ");
  errorcode = graphresult();
  if (errorcode != grOk)
{ printf("Graphic error: %s\n", grapherrmsg(errorcode));
  printf ("Press any key to halt");
  getch();
  exit(1); }
  printf (" Enter values of xc and yc: ");
  scanf ("%d %d", &xc, &yc);
  printf ("Enter the value of radius: ");
  scanf ("%d", &r);
  Bresehnam (xc, yc, r);
  getch();
  Closegraph();
  return 0;
  }
```