Course - B.C.A
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Exam - Computer Graphics

Answer P1

Algorithm -

Program -

```
# include< stdio.h>
# include< graphics.h>
int main()
{
    int gd = DETECT, gm, x0, y0, x1, y1,
    dx, dy, p, x, y;
    printf(" Co-ordinate of first
        point;");
    printf("\n Enter value of x1.");
    scanf("%d", &x0);
    printf("\n Enter value of y1:").
    scanf("%d", &y0);
    printf(" Co-ordinate of second
    point: ");
    printf("\n Enter value of x2.");
    scanf("%d", &x1);
    printf("\n Enter value of y2")
    scanf("%d", &y1);
    initgraph(&gd, &gm,"");
    dx = x1 - x0;
    dy = y1 - y0;
    x = x0
    y = y0
```

```
p = 2 * dy - dn;
while (nc ny)
{
  if (p>=0/
  {
  put pixel (n, y, 1)'
  y = u+1
  p = p+2*dy - 2* dn;
  }
  else
  {
  putpixel (n, y, 1);
  p = p+2* dy;
  }
  n = n+1;
}
getch();
return 0;
}
```

Algorithm:

Step1: Start Algorithm
step2: Declare variable n_1, n_2, y_1, y_2 di1, di2, dn, dy
step3: Enter value of n_1, y_1, n_2, y_2

step4: calculate $dx = x_2 - x_1$
$dy = y_2 - y_1$
$y_1 = 2 * dy$
$y_2 = 2 * (dy - dx)$
$d = y_1 - dx$

step5: Consider (x, y) as starting point and $x$end as maximum value of x

if $dx < 0$
$x = x_2$
$y = y_2$
$x_{end} = x_1$

if $dx > 0$
then $x = x_1$
$y = y_1$
$x_{end} = x_2$

Step6 Generate point at (x, y) cordinates

Step7 Check if whole line is generated
if $x >= x_{end}$
stop

Karan