End Semester Online Examination 2021 Date.....

NAME :- Himanshu Singh Rawat

UNIVERSITY ROLLNO :- 11221064

SUBJECT CODE :- PBC.-602

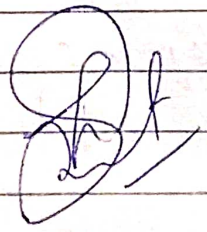
SUBJECT :- Computer Graphics and Animation

DATE :- 26/06/2021

FATHERS NAME :- Mr. Dalbir Singh Rawat.

COURSE :- BCA.

SEMESTER :- '6'.



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Ans 1:-

Algorithm:-

Step 1:- Start
Step 2:- Declare variable $x_1, x_2, y_1, y_2, d, i_1, i_2, dx, dy$.
Step 3:- Enter value of x_1, y_1, x_2, y_2.
Step 4:- calculate $dx = x_2 - x_1$
calculate $dy = y_2 - y_1$
calculate $i_1 = 2 * dy$
calculate $d = i_1 - dx$.
Step 5:- consider (x, y) as starting point and xend as maximum possible value of x,
if $dx < 0$
then $x = x_2$
$y = y_2$
$x_{end} = x_1$
if $dx > 0$
then $x = x_1$
$y = y_1$
$x_{end} = x_2$
Step 6:- Generate point at (x, y) co-ordinates.
Step 7:- check if whole line is generated
if $x >= x_{end}$
Stop.
Step 8:- calculate co-ordinates of the next pixel
if $d < 0$
Then $d = d + i_1$
if $d >= 0$
Then $d = d + i_2$
increment $y = y + 1$

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Step 9:- Increment $x = x + 1$

Step 10:- Draw a point of latest (x, y) co-ordinates.

Step 11:- Go to Step 7

Step 12:- End.

Program:-

```
#include<stdio.h>
#include<graphics.h>
void drawline(int x0, int y0, int x1, int y1)
{
 int dx, dy, P, x, y;
  dx = x1 - x0;
  dy = y1 - y0;
   x = x0;
   y = y0;
  P = 2* dy - dx;
while (x<x1)
  {
   if (P>=0)
   { putpixel (x, y, 7);
     y = y+1;
     P = P + 2* dy - 2*dx;
    }
else
  { putpixel (x,y,7);
     p = p+2*dy;
  }
  x = x+1
 }
}
```

Ok.

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```
int main()
{
    int gd = DETECT, gm, x0, y0, x1, y1;
    initgraph(&gd, &gm, "");
    x0 = 100;
    y0 = 100;
    x1 = 300;
    y1 = 200;
    drawline(x0, y0, x1, y1);
    return 0;
}
```

```
Enter co-ordinates of first point: 100
100
Enter co-ordinates of second point: 200
200
```