SET A

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Course → BCA

Sem → 6A

Subject → Computer graphics and animation

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Question - 1

DDA line algorithm and drawing algorithm

Algo

Step 1 → Start Algorithm

Step 2 → Declare $x_1, y_1, x_2, y_2, dx, dy, x, y$ as integer variable

Step 3 → Enter value of x_1, y_1, x_2, y_2

Step 4 → Calculate $dx = x_2 - x_1$

Step 5 → Calculate $dy = y_2 - y_1$

Step 6 → If ABS (dx) > ABS(dy)
Then step = abs (dx)

Else

Step 7 → xinc = dx/step
yinc = dy/step
assign $x = x_1$
assign $y = y_1$

Step 8 :- ~~set~~ pixel (x, y)

Step 9 :- x = x + x_inc
y = y + y_inc
Set pixels (Round (x), Round (y))

Step 10 :- Repeat step 9 until x = x_L

Step 11 :- End program

Program

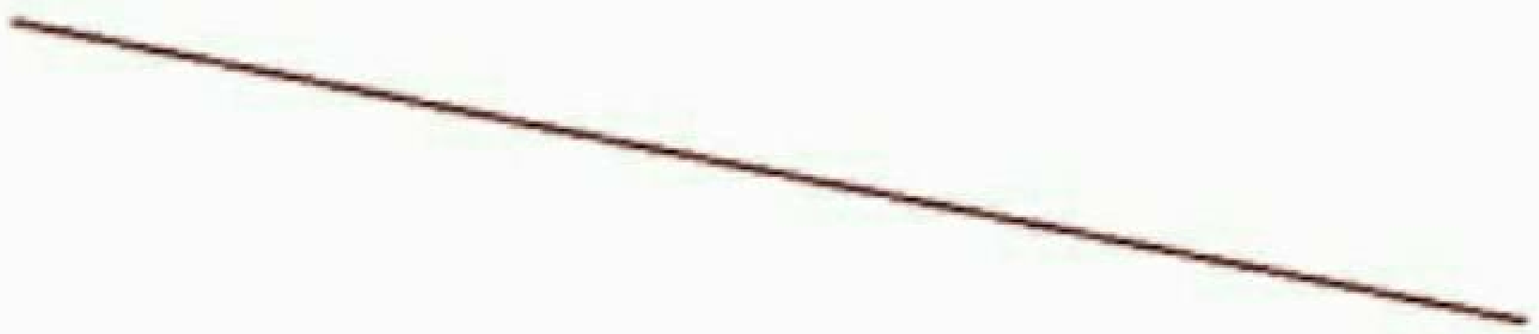
```
#include <graphics.h>
#include <conio.h>
#include <stdio.h>

void main()
{
int gd = DETECT, gm, i;
float x, y, dx, dy, steps;
int x0, x1, y0, y1;
initgraph (&gd, &gm, "C:\\TC\\BGI");
Setbkcolor (WHITE);
x0 = 100, y0 = 200, x1 = 500, y1 = 300;
dx = (float) (x1 - x0);
dy = (float) (y1 - y0);
if (dx >= dy)
{
steps = dx;
}
```

Scanned by TapScanner

```
else
 {
 steps = dy;
}

dx = dx / steps;
dy = dy / steps;
x = x0;
y = y0;
i = 1;
while ( i <= steps)
 {
  putpixel (x, y, RED);
  x += dx;
  y += dy;
  i = i + 1;
 }
 getch();
closegraph();
}
```



Question-3 (3)

W.A.P to design Traffic light animation.

```
#include<stdio.h>
#include<graphics.h>
int main()
{
int gd=DETECT,gm;
initgraph(&gd,&gm,"");
line(0,200,getmaxx(),200);
line(0,360,getmaxx(),360);
setcolor(WHITE);
1. rectangle(150,210,260,230);
2 floodfill(152,220,WHITE);
3 rectangle(150,240,260,260);
4 floodfill(152,241,WHITE);
5 rectangle(150,270,260,290);
6 floodfill(152,271,WHITE);
7 rectangle(150,300,260,320);
8 floodfill(152,301,WHITE);
9 rectangle(150,330,260,350);
10 floodfill(152,331,WHITE);
setcolor(WHITE);
rectangle(140,200,145,130);
rectangle(130,130,155,70);
setcolor(RED);
circle(142,82,6);
```

(4)

```
floodfill (142,10,YELLOW);
circle (142,118,8);
floodfill (143,118,GREEN);
setcolor (WHITE);
getch();
closegraph();
return 0;
}
```