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University roll no- 1121150 Subject name – Computer Graphics Lab

Paper code – PBSL 602

Q1

Source code

```
#include <stdio.h>
#include <graphics.h>
int main()
{
 int rou(float num)
 {
  int num < 0 ? num - 0.5 : num + 0.5;
 }
  int x1 = 100, x2 = 300, y1 = 100, y2 = 200;
  int gd = DETECT, gm;
  float pk, pkk, x, y, step;
  int dx = x2 - x1
  int dy = y2 - y1
  pk = 2 * dx - dy;
  if (dx > dy)
```

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```
Step = dx;
else
Step = dy;
initgraph (&gd, &gm, "");
Outtextxy (x1, y1, "A");
Outtextxy (x2, y2, "B");
Putpixel (x1, y1, white);
x = x1, y = y1;
while (Step > 0)
{
  if (PK < 0)
  {
  PKK = PK + 2 * dy;
  }
  else
  {
  PKK = PK + 2 * dy - 2 * dy;
  y++;
  }
  putpixel (tou(x), tou(y), white);
  x++;
  Step--;
}
  getch
  return 0;
}
```

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Algorithm

Step 1 : Start

Step 2 : Declare variable

Step 3 : Enter value of x1, y1, x2, y2

where x1, y1 are coordinates of starting point

starting point

And x2, y2 are coordinates of ending point

Step 4 : Calculate dx = x2 - x1

Calculate dy = y2 - y1

Calculate i1 = 2 x dy

Calculate i2 = 2 x (dy - dx)

Calculate d = i1 - dx

Step 5 : Consider (x, y) as starting point and xendas maximum possible value of x.

if dx < 0

Then x = x2

y = y2

xend = x1

Stop

if $dx > 0$

Then $X = X1$

$Y = Y1$

$x_{end} = x2$

Step 6 : Generate point at (x, y) coordinates

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 $d = d + i1$

if $d \geq 0$

Then $d = d + i2$

increment $Y = Y + 1$

Step 9 : Increment $x = x + 1$

Step 10 : Draw a point of latest (x, y) coordinates

Step 11 : Go to Step 7

Step 12 : End of Algorithm

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