Name : Omar Faruk

Registration number : 2019831055

SWE - 123

Part - B

Ans : to the que : NO - 2

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a

Euler circuit : A connected multigraph with at least two vertices has an Euler circuit if and only if each of it vertices has even degree.

Euler path : A connected multigraph has an Euler path but not an Euler circuit if and only if it has exactly two vertices of odd degree.

In figure 3, graph G_1 has a Euler circuit because all of its vertices has even degree.

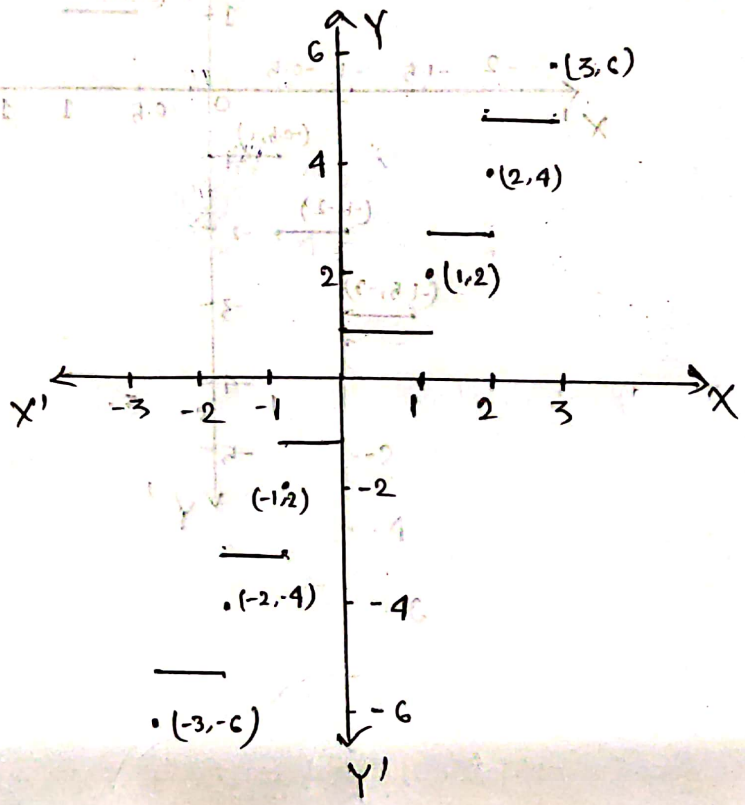
In figure 3, graph G_3 has a Euler ~~cir~~ path because it has exactly two vertices of odd degree.

Ans : to the que' NO-2

b

(i) Given function, $F(x) = \lfloor x-2 \rfloor + \lceil x+2 \rceil$

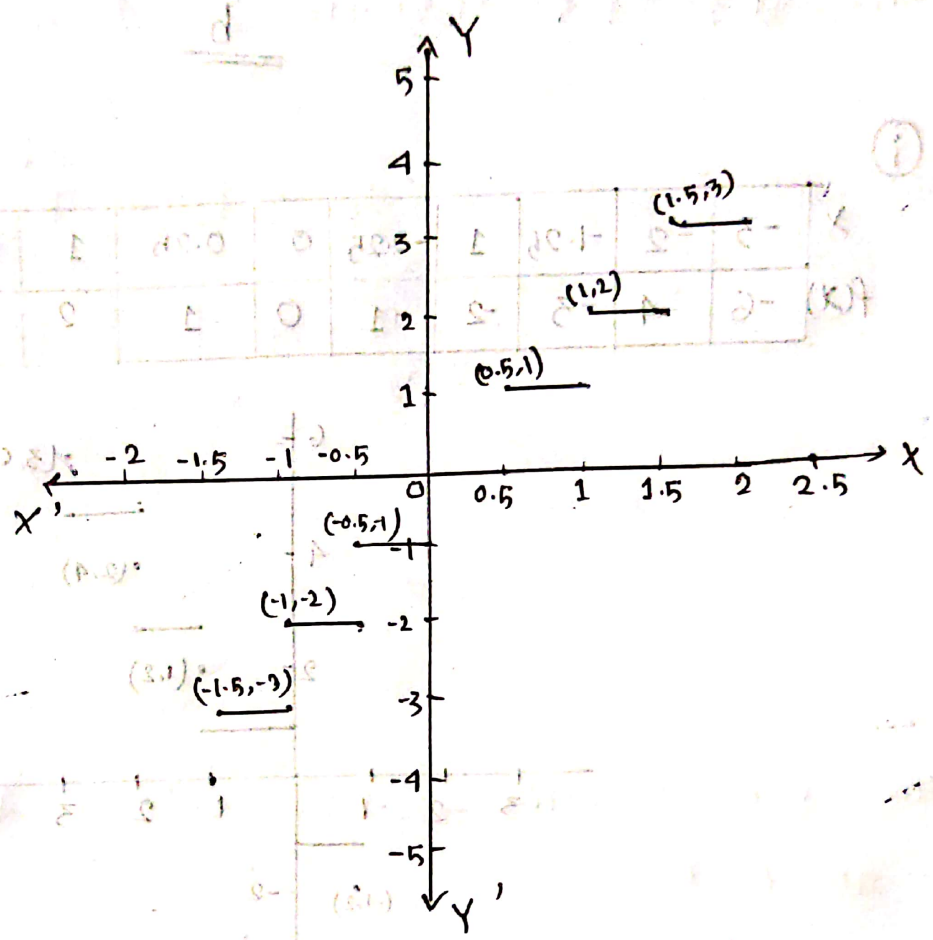
x	-3	-2	-1.25	1	-0.25	0	0.25	1	1.25	2	2.25	3
$f(x)$	-6	-4	-3	-2	-1	0	1	2	3	4	5	6



(ii) Drawing the graph of the following function :

$F(x) = \lfloor 2x \rfloor$

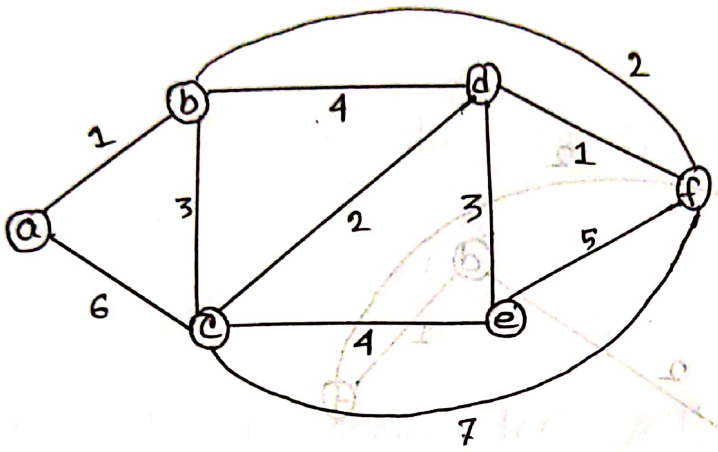
x	-2	-1.5	-1	-0.5	-0.25	0	0.5	1	1.5	2
$f(x)$	-4	-3	-2	-1	-1	0	1	2	3	4


Y
X
X'
Y'
5
4
3
2
1
-1
-2
-3
-4
-5
-2
-1.5
-1
-0.5
0
0.5
1
1.5
2
2.5
(1.5,3)
(1,2)
(0.5,1)
(-0.5,-1)
(-1,-2)
(-1.5,-3)

Ans: to the que: No-2

C

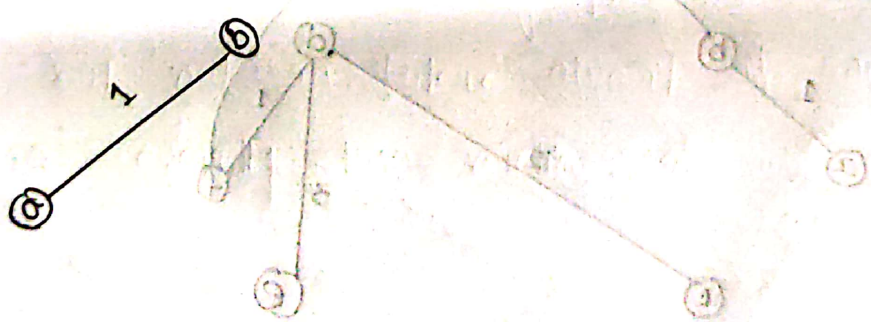
In figure-4, given graph is,



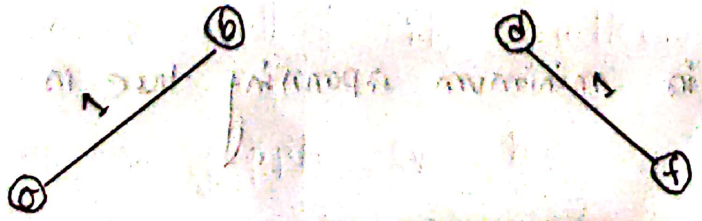
~~Rearrange edge by cost in ascending~~ -

By using Kruskala algorith -

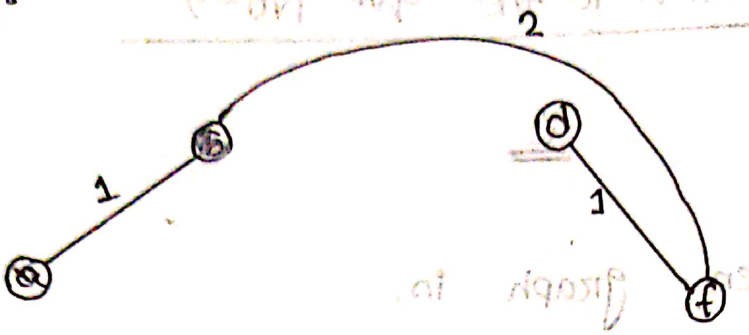
Step 1:



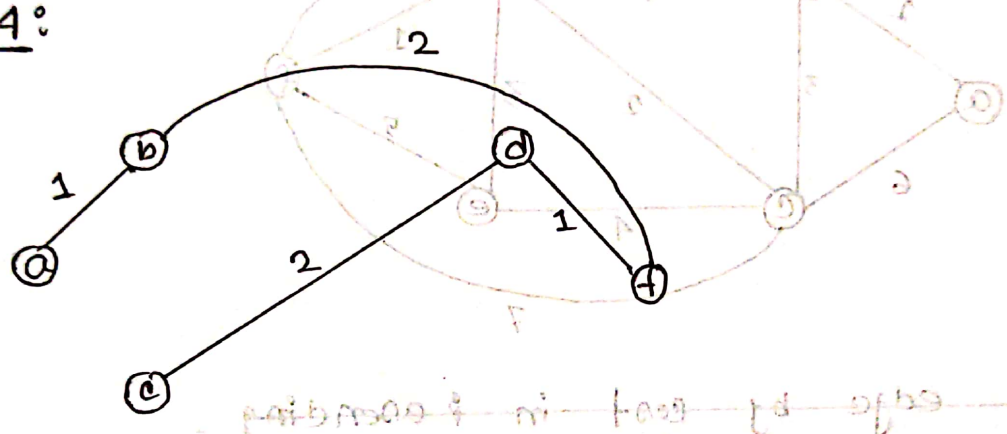
step 2:



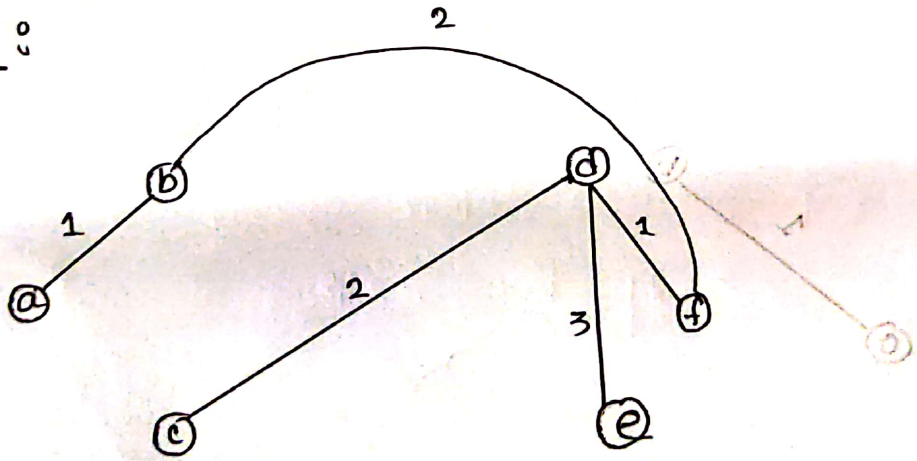
Step 3 :



Step 4 :



Step 5 :



Total weight of this minimum spanning tree is.

$1+2+1+3+2=9$

As we selected the lower edge cost, and so as we don't make any cycle we can say that

this is a (MST) minimum spanning tree with (G-1) or 5 edges.