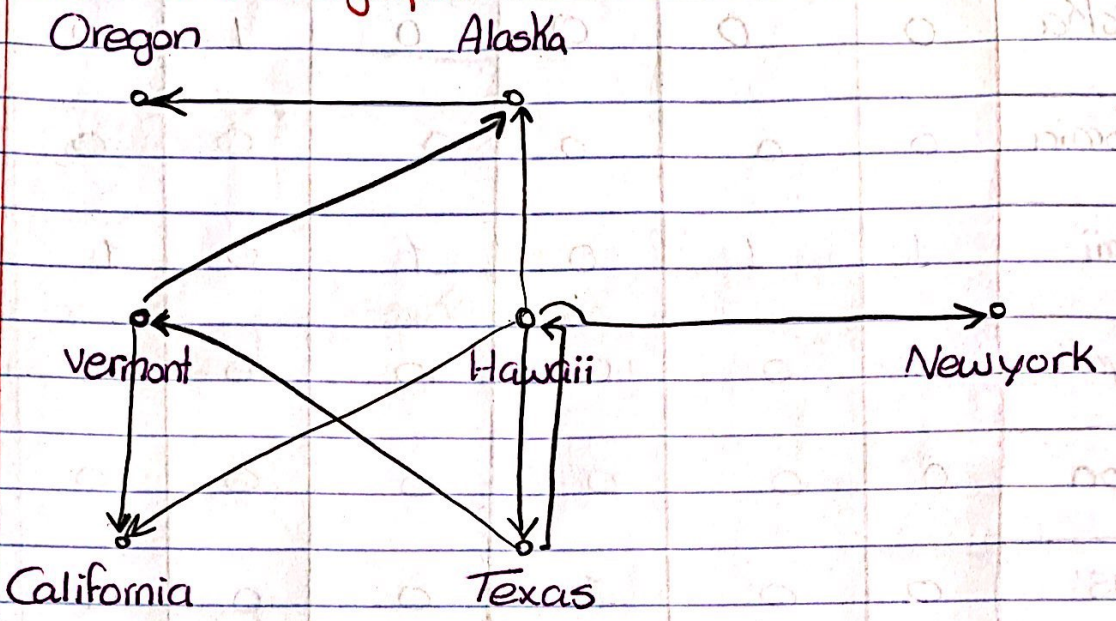
Graph Lab

① Draw the state graph:-



V (StateGraph) = 7 vertices

E (StateGraph) = 8 edge.

② a) No, as there is no arrow (edge) going out from oregon

b) Yes, Directly from Hawaii to 1) New york
2) Texas
3) California

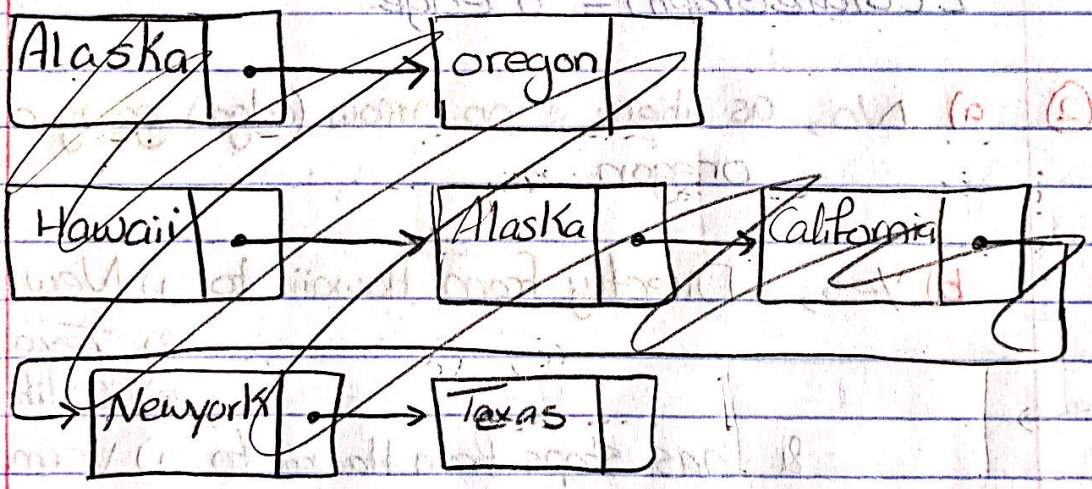
& has stops from Hawaii to 1) Vermont
2) Oregon

c) From Texas.

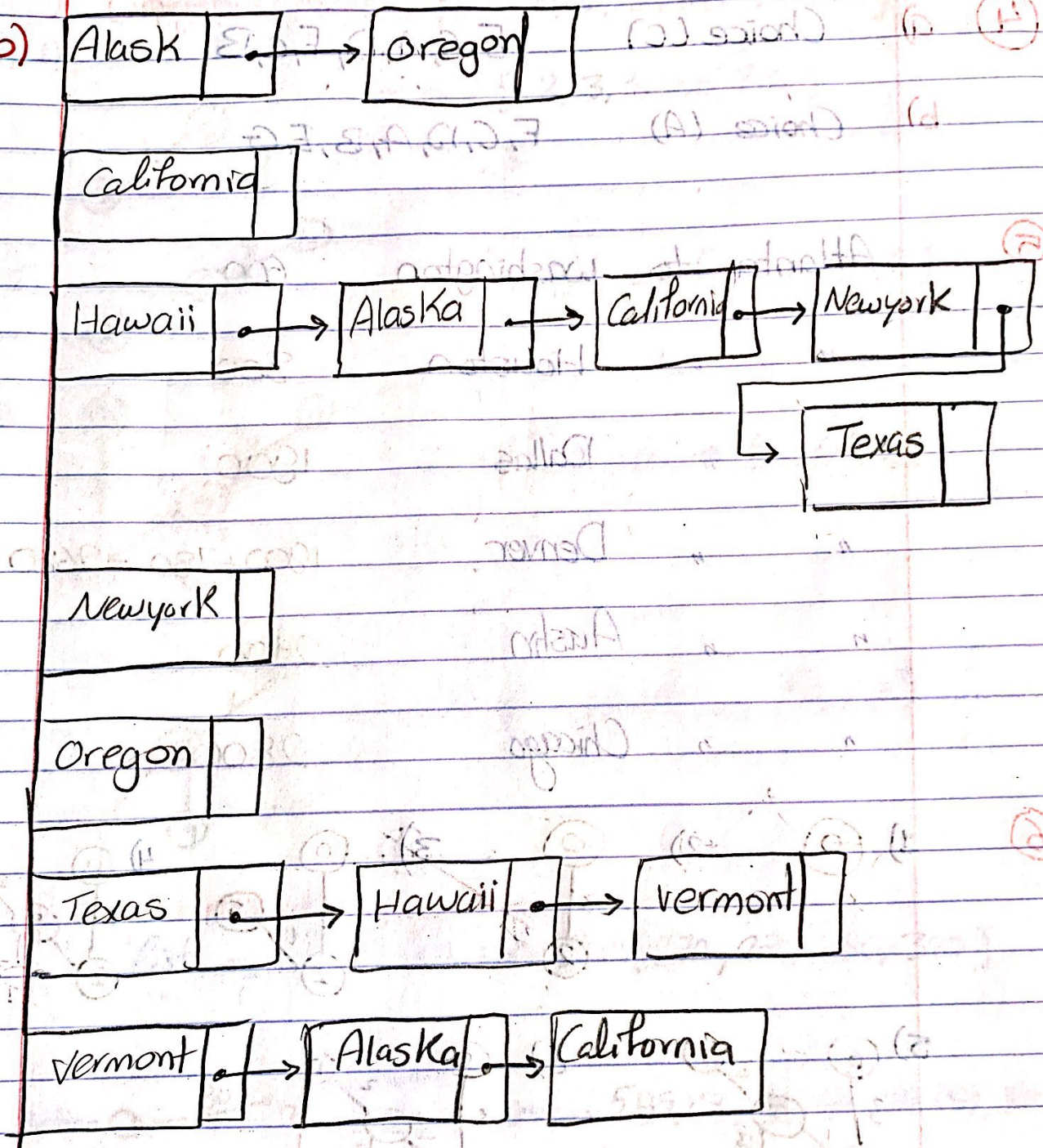
③ a)

States	Alaska	California	Hawaii	Newyork	Oregon	Texas	Vermont
Alaska	0	0	0	0	1	0	0
California	0	0	0	0	0	0	0
Hawaii	1	1	0	1	0	1	0
Newyork	0	0	0	0	0	0	0
Oregon	0	0	0	0	0	0	0
Texas	0	0	1	0	0	0	1
Vermont	1	1	0	0	0	0	0

b)



(3) b)



(4) a) Choice (C) E, G, A, D, F, C, B

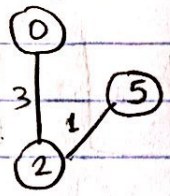
b) Choice (A) F, C, D, A, B, E, G

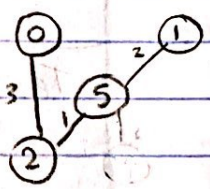
(5)

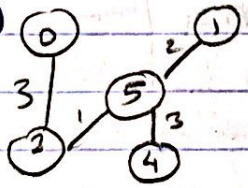
Atlanta	to Washington	600
"	" Houston	800
"	" Dallas	1900
"	" Denver	1900+780 = 2680
"	" Austin	2100
"	" Chicago	2800

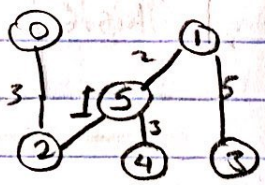
(6) 1) 

2) 

3) 

4) 

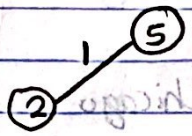
5) 

6) 

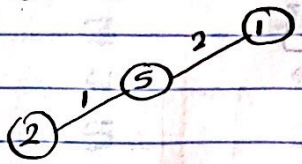
(7) weights in order:- {1, 2, 3, 3, 5, 6, 7, 8}

Step 1)

list ⇒ {2, 3, 3, 5, 6, 7, 8}

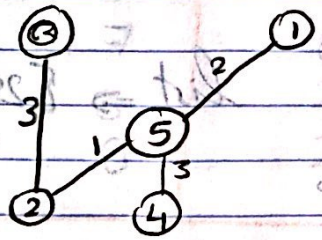


Step 2)



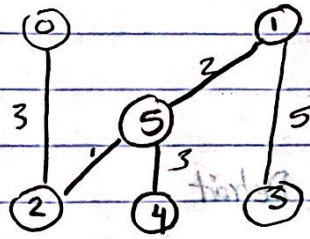
list of weight ⇒ {3, 3, 5, 6, 7, 8}

Step 3)



list of weights ⇒ {5, 6, 7, 8}

Step 4)

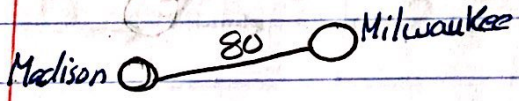


list of weights ⇒ {6, 7, 8}

(8) using Kruskal's algorithm:-

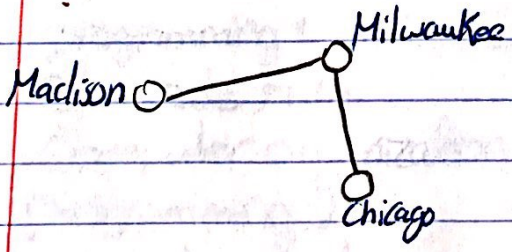
list ⇒ {80, 95, 150, 235, 270, 270, 280, 320}

Step 1)



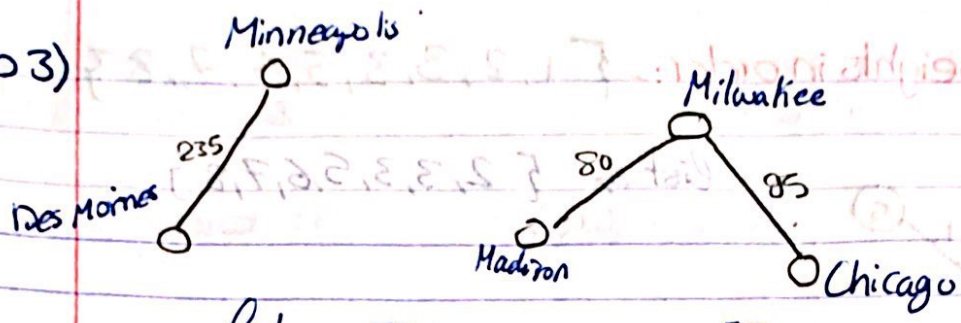
list ⇒ {95, 150, 235, 270, 270, 280, 320}

Step 2)



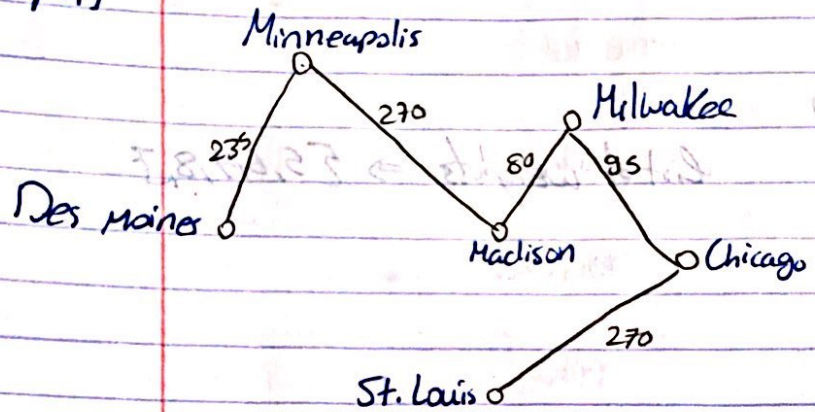
list ⇒ {150, 235, 270, 270, 280, 320}

Step 3)



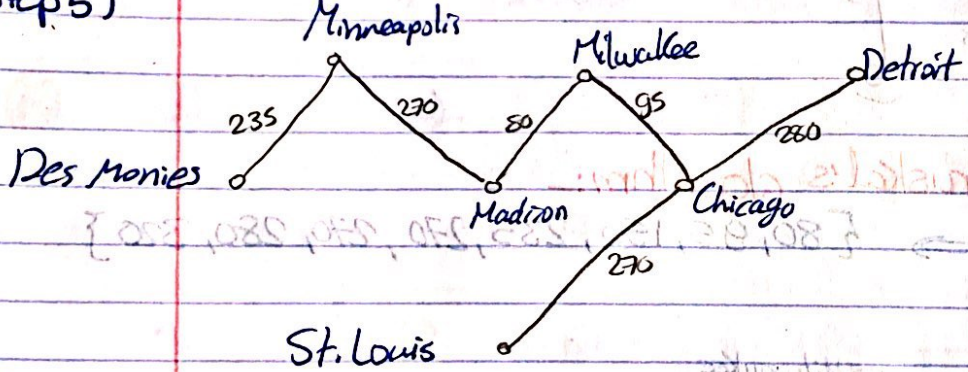
list ⇒ {270, 270, 280, 320}

Step4)



list ⇒ {280, 320}

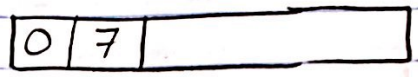
Step 5)



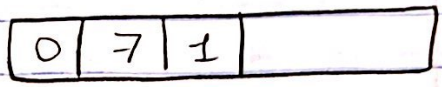
list ⇒ 320

⑨

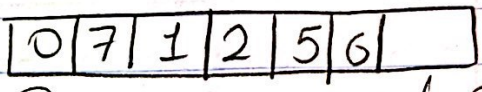
Node	Indeg
0	0
1	1
2	1
3	~~4~~ 3
4	~~5~~ 3
5	2
6	2
7	0
8	2
9	2



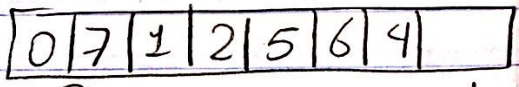
Remove 0
Print 0



Remove 7
print 7
Remove 1
Print 1

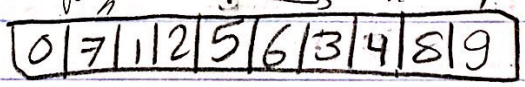


Remove2 → print 2



Remove 5 → print 5
" 6 → " 6

Remove 3 → Print 3
P" 4 → " 4



0 → 7 → 1 → 2 → 5 → 6 → 3 → 4 → 8 → 9

⑩

Start
programming 1
Discreate Math
Computer organization
Programming 2
Operating System
high level Lang.
Algorithms
Compilers
→ Senior Seminar
Theory of computation
End