

Name: Mohamed Haneefa Jiyavudeen

Tutorial group: T03F

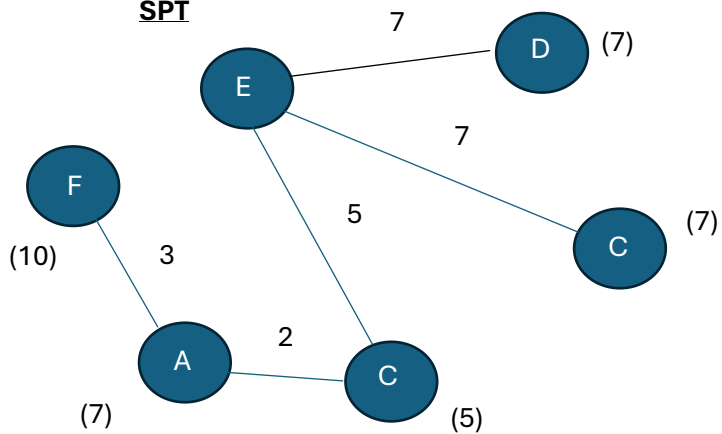
UOW number: 8496407

Assignment 3 (Problem Solving)

Question 1)

Shortest Length	Length
E	0
E,B	5
E,C	7
E,D	7
E,B,A	$5+2=7$
E,B,A,F	$5+2+3=10$

SPT



Question 2)

Starting from vertex C, Minimum Spanning Tree can be formed by selecting the following edges:

(C, D), (C, B), (B, A), (A, F), (B, E)

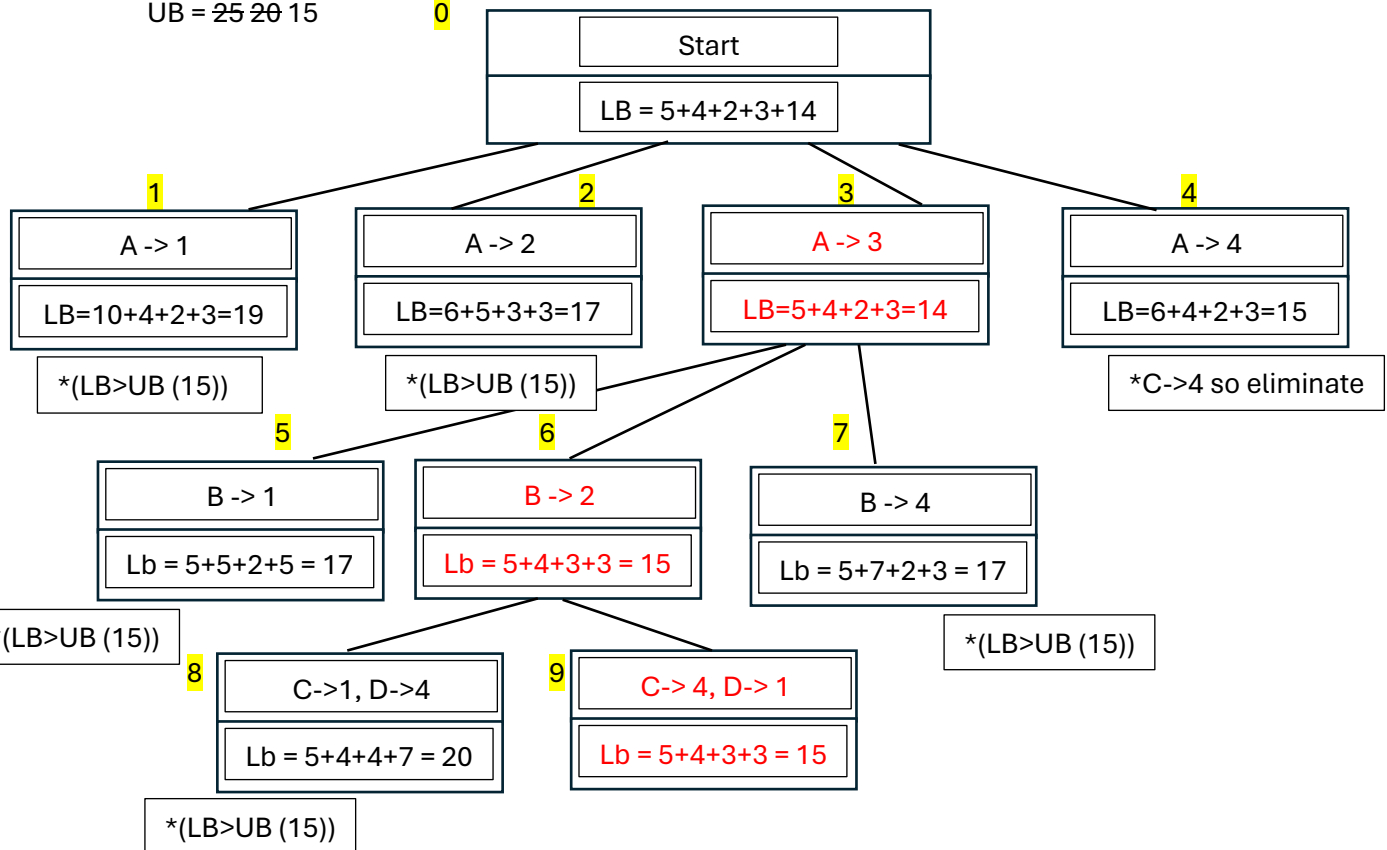
The minimum total weight = $2 + 3 + 2 + 3 + 5 = 15$

Question 3)

Initial UB = $10 + 4 + 4 + 7 = 25$, initial LB = $5 + 4 + 2 + 3 = 14$ (lowest per row)

UB = ~~25~~ 15

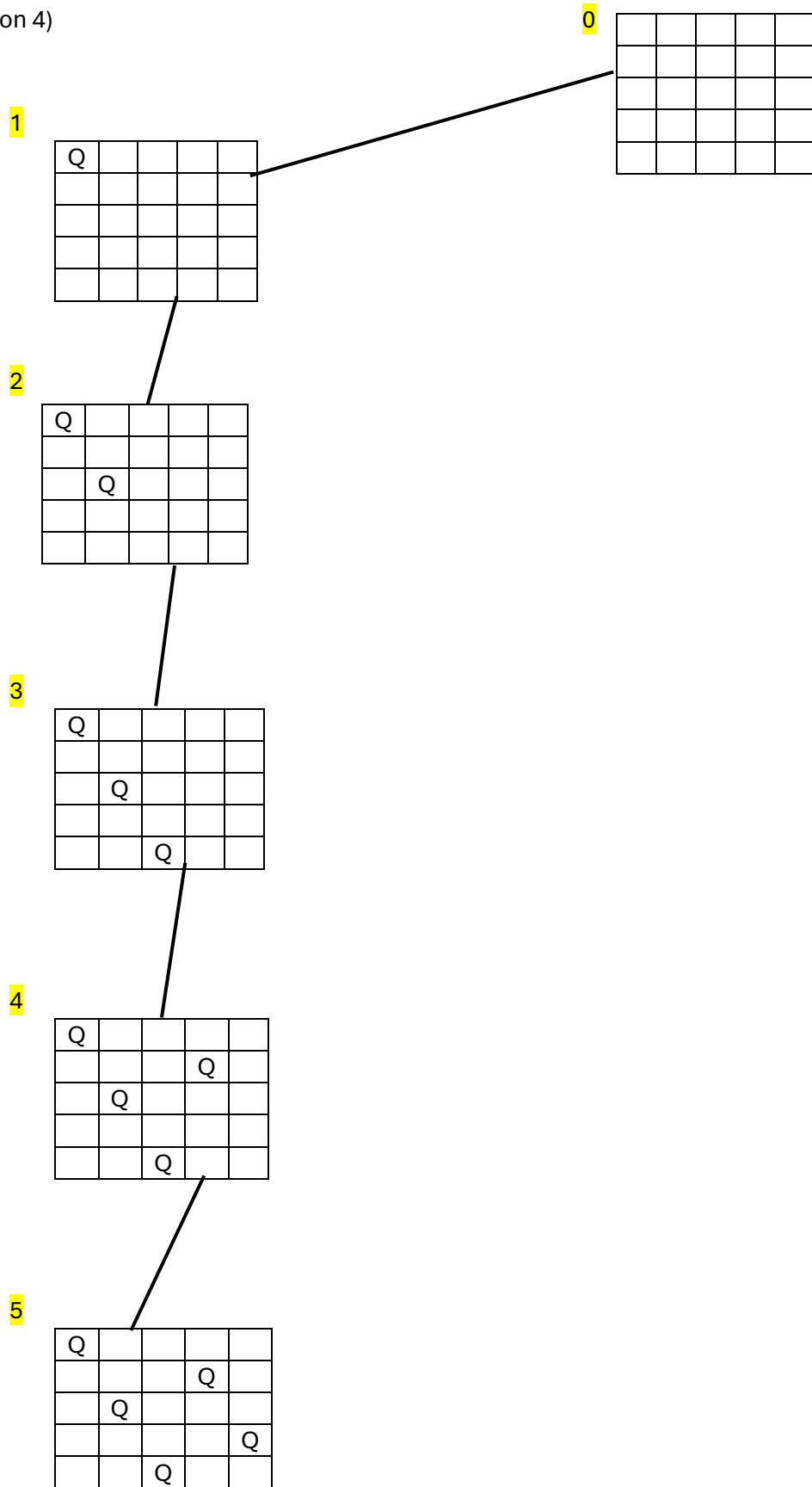
0



There is only 1 solution to this case where

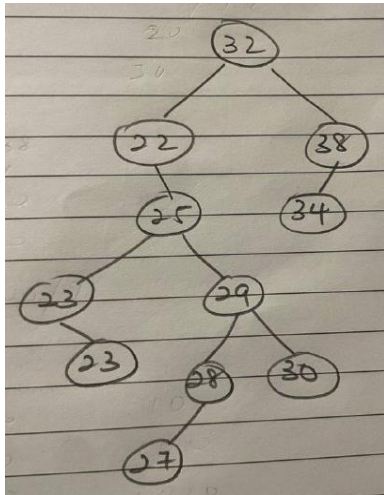
- A is assigned to Job 3
- B is assigned to Job 2
- C is assigned to Job 4
- D is assigned to Job 1

Question 4)



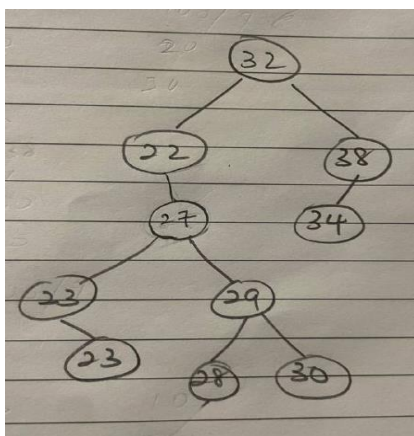
Question 5)

a)



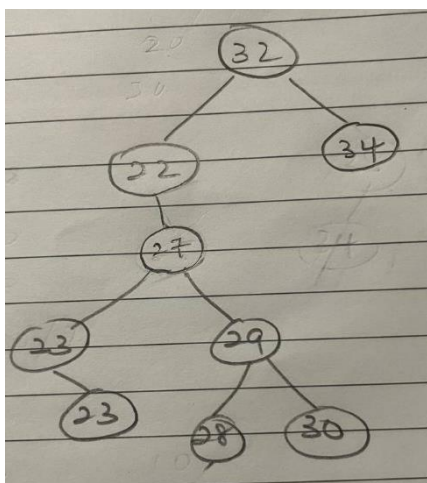
b)i)

25 deleted



b)ii)

38 deleted



Question 6)

Minimum spanning tree can be formed using these edges:

(f, e), (f, b), (c, d), (f, g), (g, a), (b, c), (e, h)

The minimum total weight = $5 + 6 + 7 + 7 + 8 + 9 + 9 = 51$

Rest are voided as it may create a cycle and we also have achieved $v-1$ edges where v is the total number of edges.

Question 7)

Vertices are visited in this order

16, 12, 8, 3, 2, 1, 5, 6, 7, 11, 14, 10, 9, 13, 15, 4