

Exam: Module 13 Quiz
Submitted: 12/08/2022 10:52:27 PM
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Attempt: 1

Score

Your score on this attempt: 5.000 out of a possible 5 (100.00%)

Graded Score: 5 out of a possible 5 (100.00%)

Completion Time: 9 minutes 12 seconds



Question 1:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1																				
2																				
3	Distance	From	To	Select?																
4	6	A	B																	
5	9	A	C																	
6	12	A	D																	
7	30	B	C																	
8	8	B	E																	
9	30	C	D																	
10	12	C	F																	
11	2	C	G																	
12	3	D	F																	
13	0	D	G																	
14	14	D	H																	
15	23	E	H																	
16	18	F	G																	
17	17	F	H																	
18	6	G	H																	
19																				
20																				
21																				
22																				

What formula would you expect in row 20? Let's use Column H (node B) as an example.

Type: Multiple Choice

Points Awarded: 1.000/1.000

User Answer(s):

SUMPRODUCT(D4:D18, H4:H18)

Correct Answer(s) :

SUMPRODUCT(A4:A18, H4:H18)

SUMPRODUCT(D4:D18, H4:H18) (correct)

SUM (H4:H18)

No formula, it's just a number representing whether it is a origin, destination or intermediate node.



Question 2:

Which of the following statements is NOT true:

Type: Multiple Choice

Points Awarded: 1.000/1.000

User Answer(s):

You can find the maximum flow of this network by either maximizing G20 or N20.

Correct Answer(s) :

You can find the maximum flow of this network by either maximizing G20 or N20. (correct)

IN=OUT is enforced only for intermediate nodes.

The capacity constraints are implemented logically by $\text{Column D} \leq \text{Column A}$.

By their nature, Max Flow models often times can give us situations with multiple optimal solutions.



Question 4:

In a shortest route problem, how would we force the path to go through, say, Node B?

Type: Multiple Choice

Points Awarded: 1.000/1.000

User Answer(s):

Sum the links entering the node and add a constraint that forces this sum to be equal to 1.

Correct Answer(s) :

Keep solving the model over and over and hope that it miraculously occurs.

Sum the links entering the node and add a constraint that forces this sum to be equal to 1. (correct)

Sum the links both entering the node and leaving the node, then add a constraint that forces this sum to be equal to 1.

Sum the links entering the node and, in the same cell, subtract the links leaving the node, then add a constraint that forces this formula to be equal to 1.



Question 5:

In shortest route models where a number of 'side constraints' are added, sometimes a phenomenon called 'subtours' occurs. What should we do in this case?

Type: Multiple Choice

Points Awarded: 1.000/1.000

User Answer(s):

Add a constraint that does not allow all the links/paths in the subtours to be selected by the model, but allows some of the links/paths to be selected.

Correct Answer(s) :

Rerun the models over and over again and hope that the subtours miraculously go away.

Add a constraint that forces none of the links/paths in the subtour to be selected by the model.

Add a constraint that does not allow all the links/paths in the subtours to be selected by the model, but allows some of the links/paths to be selected. (correct)

Add a constraint that does not allow all the links/paths in the subtours to be selected by the model, but selects the best $n-1$ links/paths to be included in the shortest path.