FIT3158 Business decision modelling - S2 2022

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Grade	**1.00** out of 1.00 (**100**%)

Almost all network problems can be viewed as special cases of the

- ○ a. minimal spanning tree problem.
- ○ b. shortest path problem.
- ⦿ c. transshipment problem. ✔
- ○ d. maximal flow problem.

The correct answer is: transshipment problem.

A node which can both send to and receive from other nodes is called a

- ○ a. supply node.
- ○ b. demand node.
- ⦿ c. transshipment node. ✔
- ○ d. random node.

The correct answer is: transshipment node.

Which method is preferred for solving minimal spanning tree problems?

- ○ a. transshipment models
- ⦿ b. manual algorithms ✔
- ○ c. simulation
- ○ d. linear programming
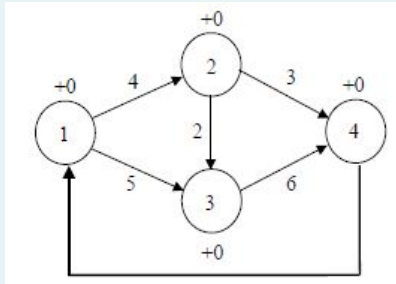
The correct answer is: manual algorithms

How many arcs are required to make a spanning tree in a network with n nodes and m arcs?

- a.   m
- ⦿ b.   n-1
- c.   n
- d.   m-1

What is the objective function in the following maximal flow problem?

- a.   MAX X_{14}
- ⦿ b.   MAX X_{41}
- c.   MAX $X_{12} + X_{13} + X_{23} + X_{24} + X_{34}$
- d.   MIN X_{41}

Which method is preferred for solving fully connected transportation problems?

- a.   network flow methods
- ⦿ b.   linear programming
- c.   trial and error
- d.   simulation

The right hand side value (constraint) for the ending node in a shortest path problem has a value of

- a.   2
- b.   -1
- c.   0

◉ d.   1 ✔

The number of constraints in network flow problems is determined by the number of

○ a.   demands.

◉ b.   nodes. ✔

○ c.   supplies.

○ d.   arcs.

How could a network be modified if demand exceeds available supply?

○ a.   remove the extra demand arcs

◉ b.   add a dummy supply ✔

○ c.   add a dummy demand

○ d.   add extra supply arcs

Jump to... ⬍