Quiz 2: Network Models Results for Liangrui Lu

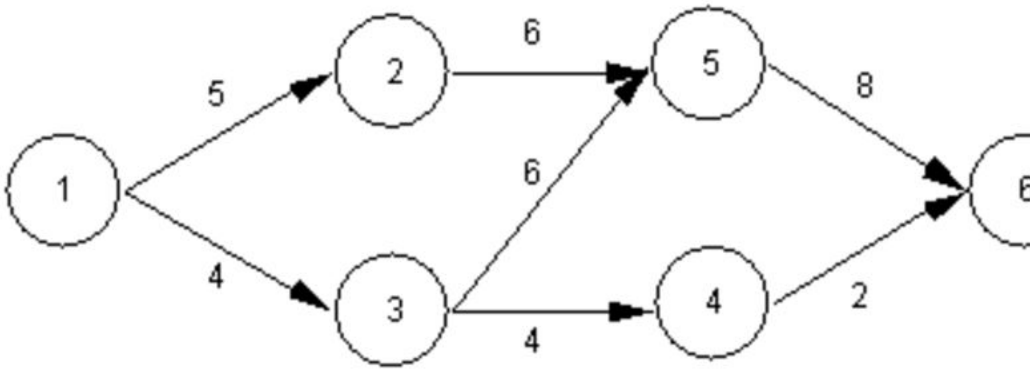
ⓘ Correct answers are hidden.

Score for this attempt: **10** out of 10
Submitted Sep 28, 2021 at 9:29pm
This attempt took 10 minutes.

问题 1

1 / 1 pts

A railroad needs to move the maximum amount of material through its rail network. The numbers on arcs represent maximum capacity of each rail.



Which of the following networking methods should you use to solve this problem?

- [ ] Shortest path problem
- [x] Maximal flow problem
- [ ] General network flow model
- [ ] Transshipment problem

问题 2

1 / 1 pts

In a shortest path problem, there is a unit supply at the origin and a unit supply at the destination.

- (•) True
- ( ) False

问题 3

1 / 1 pts

For most real-world applications, an unbalanced transportation model is a more likely occurrence than a balanced transportation model.

- (•) True
- ( ) False

问题 4

1 / 1 pts

In a maximal flow problem, there is a unit supply at the origin and a unit supply at the destination.

- ( ) True

False

问题 5

1 / 1 pts

Pete's Plastics manufactures plastic at plants in Miami, St. Louis and Cleveland. Pete needs to ship plastic to customers in Pittsburgh, Atlanta and Chicago. He wants to minimize the cost of shipping the plastic from his plants to his customers. The data for the problem is summarized in the following table.

Distance From Plants to Customers

Plant	Pittsburgh	Atlanta	Chicago	Supply
Miami	1,200	700	1,300	30
St. Louis	700	550	300	40
Cleveland	125	675	350	50
Demand	40	60	20	

Which method is preferred for solving this transportation problem?

- Integer Programming
- Assignment

- [x] Linear Programming
- [ ] Simulation

问题 6

1 / 1 pts

In the linear programming formulation of a network flow problem,

- [x] all options are correct
- [ ] there is one variable per arc
- [ ] the total flow in and out of a node is constrained by the supply or demand at the node
- [ ] there is one constraint per node

问题 7

1 / 1 pts

A **shortest path problem** cannot be solved as an LP problem, but is solved easily using a simple manual algorithm.

- [ ] True
- [x] False

问题 8

1 / 1 pts

In an assignment problem all supply and demand values are equal to one.

- (•) True
- ( ) False

问题 9

1 / 1 pts

A plant has four jobs to be assigned to four machines, and each machine has different manufacturing times for each product. The production manager wants to determine the optimal assignments of four jobs to four machines to minimize total manufacturing time. This problem can be most efficiently solved using the _____ model.

- ( ) transshipment
- (•) assignment
- ( ) transporation
- ( ) shortest path

问题 10

1 / 1 pts

In a transshipment problem, items may be transported

- from one transshipment point to another.
- directly from sources to destinations
- from destination to destination.
- all of the options

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