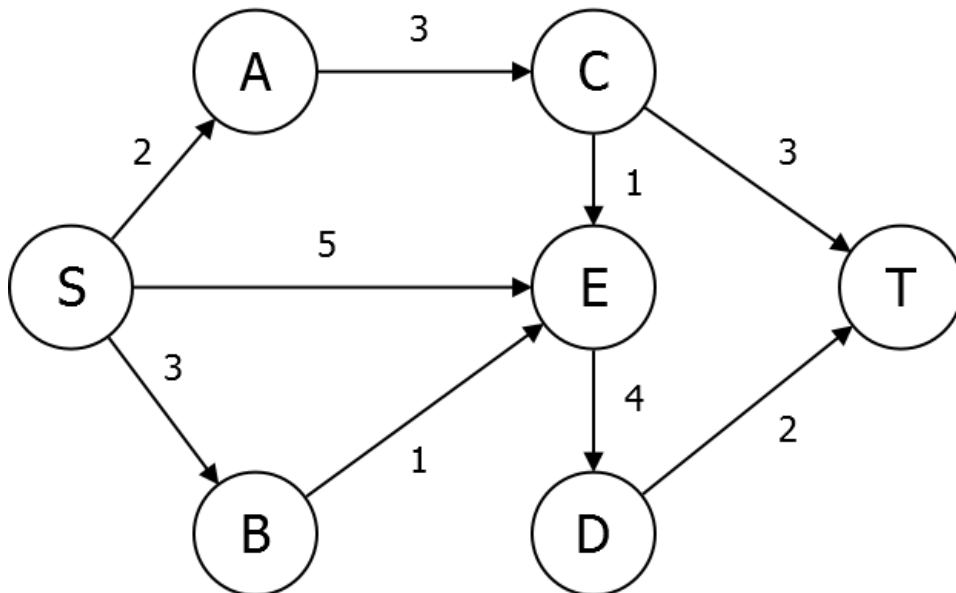# Flow Algorithms

5/5 points (100%)

Quiz, 5 questions

✔ **Congratulations! You passed!**

Next Item

✔ 1 / 1 points

1.
Which vertices are in the minimum S-T cut in the network below?

☐ A

Un-selected is correct

☐ B
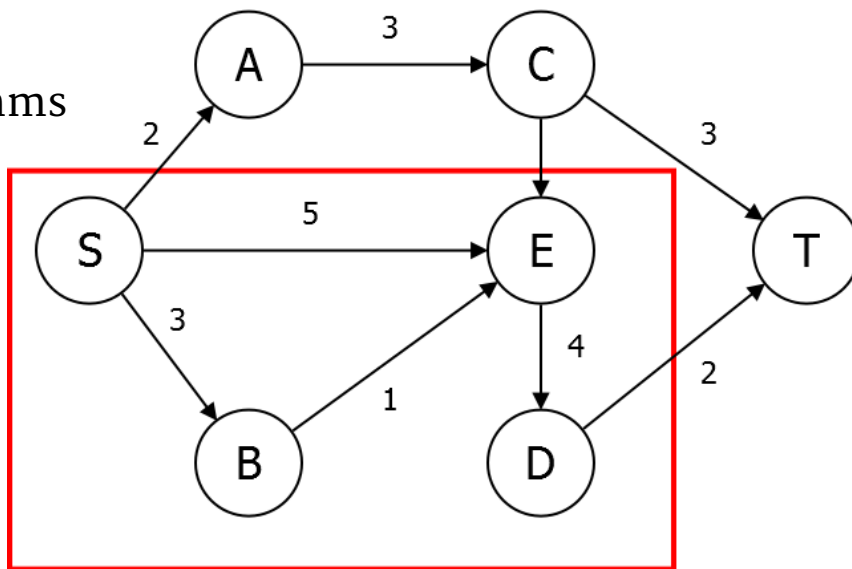
Correct
The mincut below has size 4 and contains B.

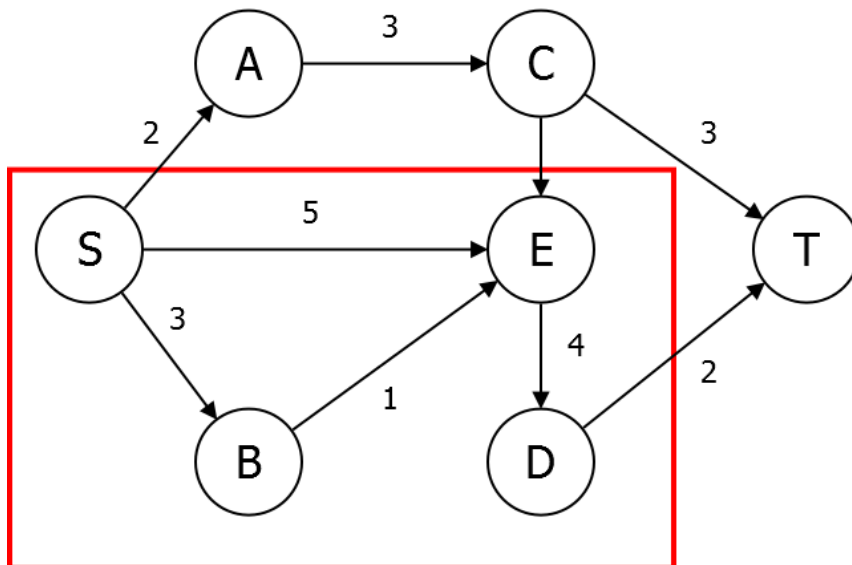# Flow Algorithms

Quiz, 5 questions
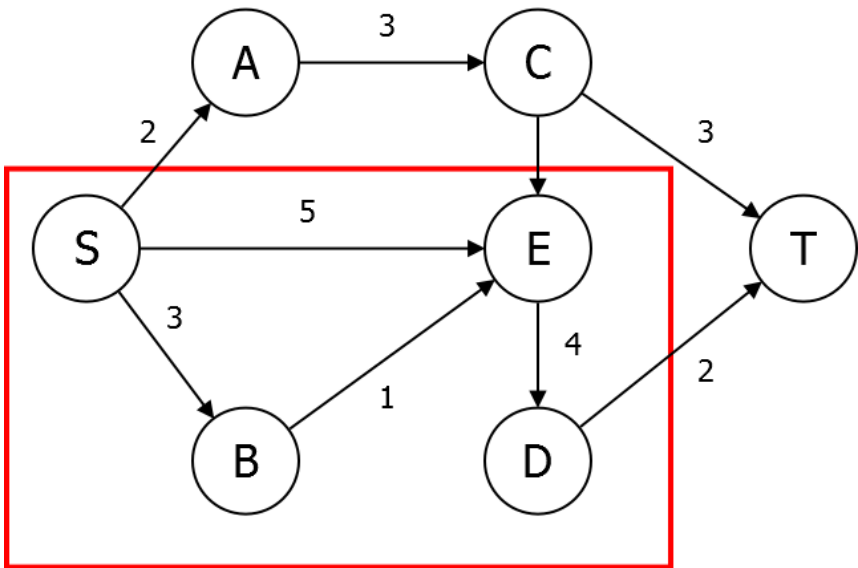
5/5 points (100%)

☐ C

Un-selected is correct

☐ D

Correct

The mincut below has size 4 and contains D.

☐ E

Flow Algorithms

Quiz, 5 questions

Correct
The mincut below has size 4 and contains E.

5/5 points (100%)

☐　S

Correct
The source is always in a cut.
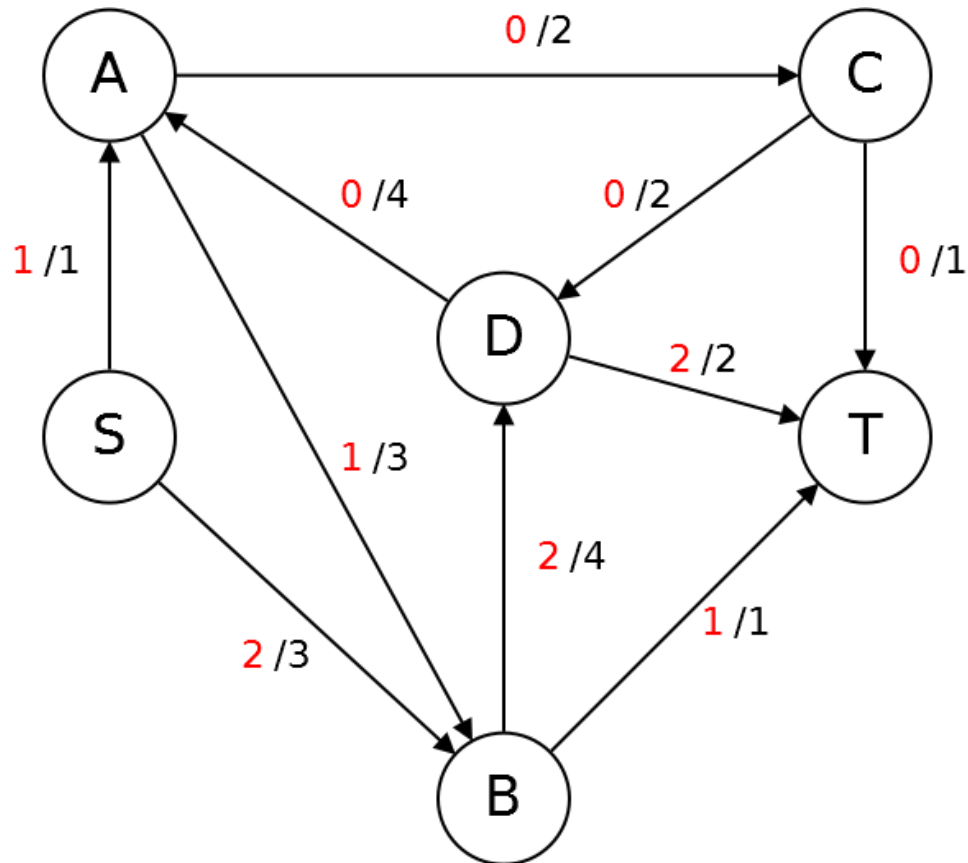
☐　T

Un-selected is correct

✔　　1 / 1
　　　points

2.

What is the augmenting path that will be used by the Edmonds-Karp
algorithm to increase the flow given below?

Flow Algorithms

5/5 points (100%)

Quiz, 5 questions

○ S-A-C-T

○ S-B-T

◉ S-B-A-C-T

Correct
Correct!

○ S-B-D-C-T

○ S-B-A-C-D-T

✔   1 / 1
     points

3.

Which of the statements below is true?

☐

The Ford-Fulkerson algorithms runs in polynomial time on graphs with unit edge capacities.

Flow Algorithms

5/5 points (100%)

Correct

True. For such graphs, the maximum flow is at most |V|.

☐ The sum of the capacities of the edges of a network equals the sum of the capacities of the edges of any residual network.

▲

Correct

True. The reduced capacity of any edge of the network is exactly compensated for the by the capacity of the reverse edge.

☐ The Edmonds-Karp algorithm is always faster than the Ford-Fulkerson algorithm.
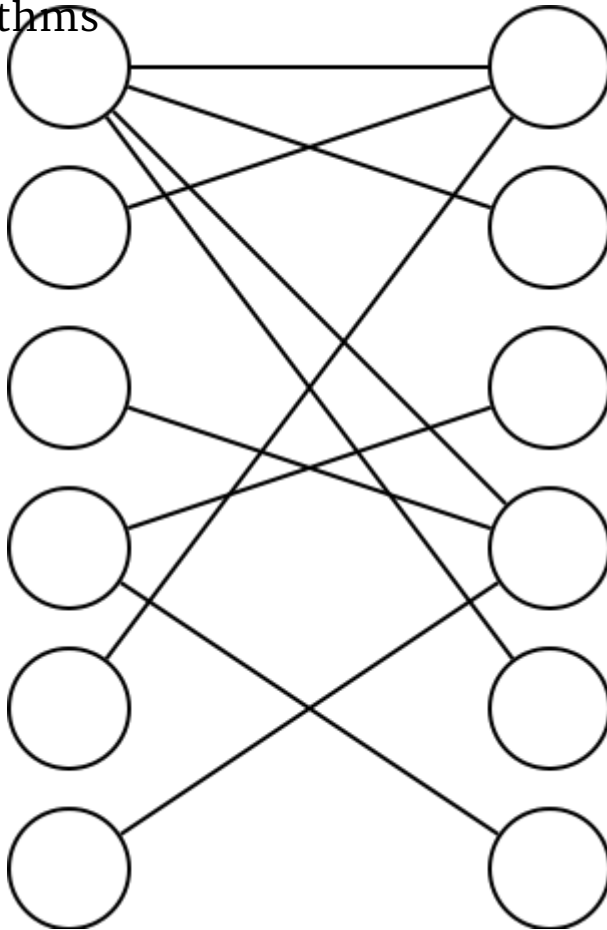
▲

Un-selected is correct

✔   1 / 1
     points

4.

What is the size of the maximum matching of the following graph?

Flow Algorithms

Quiz, 5 questions

4

Correct Response

✔   1 / 1
       points

5.

Consider the image segmentation problem on a picture that is given by an n by n grid of pixels. Suppose that separation penalties are imposed only for adjacent pairs of pixels. If we use the Edmonds-Karp algorithm to solve this problem as described in class, the final runtime is $O(n^a)$ for some a. What is the best such a?

6

Correct Response

Correct. We need to compute maximum flow on a graph with
V=O(n^2) and E=O(n^2). The runtime of Edmonds-Karp is at

Flow Algorithms

worst O(E^2 V) = O(n^6).

5/5 points (100%)

Quiz, 5 questions