

Unit 9 - Week 7

Course outline

How does an NPTEL online course work?

Week 0

Week 1

Week 2

Week 3

Week 4

Week 5

Week 6

Week 7

- Lecture 16 Part 1 - Augmenting Path Algorithm
- Lecture 16 Part 2 - Max-Flow and Min-Cut
- Lecture 17 - Max-Flow and Min-Cut Theorem
- Lecture 18 Part 1 - Vertex Colouring
- Lecture 18 Part 2 - Chromatic Number and Max. Degree
- Quiz : Week 7 Practice Assignment

Quiz : Assignment 7

Week 7 Feedback : Graph Theory

Assignment 7 solution

Week 8

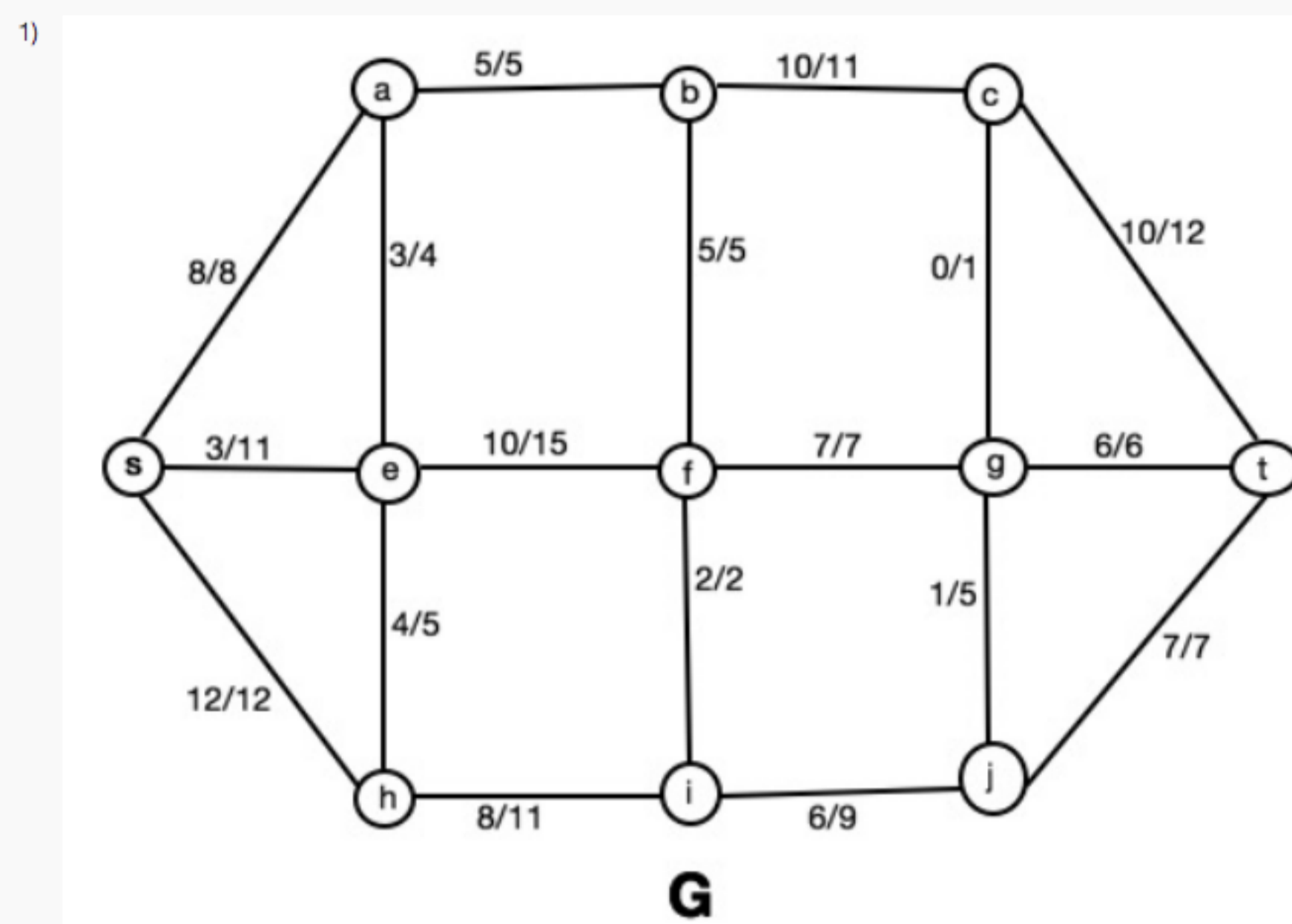
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Assignment 7

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

Due on 2020-03-18, 23:59 IST.

Consider the network shown below:



Here s and t are the source and sink vertices respectively. A flow of value 23 in the network is shown. You need to decide the direction of every edge so that the flow conservation rule is satisfied. What is the direction of the edge between vertices a and e .

- (a, e)
 (e, a)

No, the answer is incorrect.
Score: 0

Accepted Answers:
 (a, e)

2) Consider the network in Problem 1. What is the direction of the edge between vertices i and f .

- (i, f)
 (f, i)

No, the answer is incorrect.
Score: 0

Accepted Answers:
 (i, f)

3) Consider the network in Problem 1. What is the direction of the edge between vertices b and c .

- (b, c)
 (c, b)

No, the answer is incorrect.
Score: 0

Accepted Answers:
 (b, c)

4) Consider the network in Problem 1. What is the direction of the edge between vertices b and f .

- (f, b)
 (b, f)

No, the answer is incorrect.
Score: 0

Accepted Answers:
 (f, b)

5) Consider the network in Problem 1. Draw the residual network with respect to given flow. Consider the path $p = (s, e, f, i, j, g, c, t)$. What is the capacity $\delta(P)$ of this path.

- 1
 2
 3
 4

No, the answer is incorrect.
Score: 0

Accepted Answers:
1

6) Consider the path P in Problem 5. Push $\delta(G)$ units of flow along the path $p = (s, e, f, i, j, g, c, t)$. The resulting flow value is:

- 24
 25
 26
 27

No, the answer is incorrect.
Score: 0

Accepted Answers:
24

7) Consider the network in Problem 1. The value of maximum flow in G is

- 24
 25
 26
 27

No, the answer is incorrect.
Score: 0

Accepted Answers:
24

8) Consider the network in Problem 1. A minimum $s - t$ cut in G is

- $S = \{s, a, e, f, h, i, j\}$ and $\bar{S} = V - S$
 $S = \{s, a, e, f, h, i\}$ and $\bar{S} = V - S$
 $S = \{s, a, e\}$ and $\bar{S} = V - S$
 $S = \{s, a, f, h, i\}$ and $\bar{S} = V - S$

No, the answer is incorrect.
Score: 0

Accepted Answers:
 $S = \{s, a, e, f, h, i, j\}$ and $\bar{S} = V - S$

1 point

1 point

1 point

1 point

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