**EASTERN MEDITERRANEAN UNIVERSITY**

 **Department of Industrial Engineering**

**IENG516 Network Flows**

**HOMEWORK 5 Spring 2016-17**

1. Show the convergence of the assignment algorithm.
2. Consider the following network. The numbers on each arc is its upper bound for the flow. We want to send the maximum flow from node 1 to node 7. Write the linear programming of the problem and its dual.

4

2

2

2

5

5

1

1

7

3

3

1

3

6

2

3

4

4

1. Find the maximal flow from node 1 to node 7 in the following network. Identify the associated minimal cut-set. Find the dual optimal solution.

4

7

*uij*

41

5

3

3

6

56

2

7

1

24

1

7

1

2

2

7

4

6

5

6

3

1. Show that the value of maximal flow in G is equal to the capacity of the minimal cut-set.
2. Find the maximal flow from node 1 to node 8 in the following network. Identify the associated minimal cut.

