Design and Analysis of Algorithm (CS 412)
Instructor: Dr. Ayesha Enayet
Date: _____
CS 6th

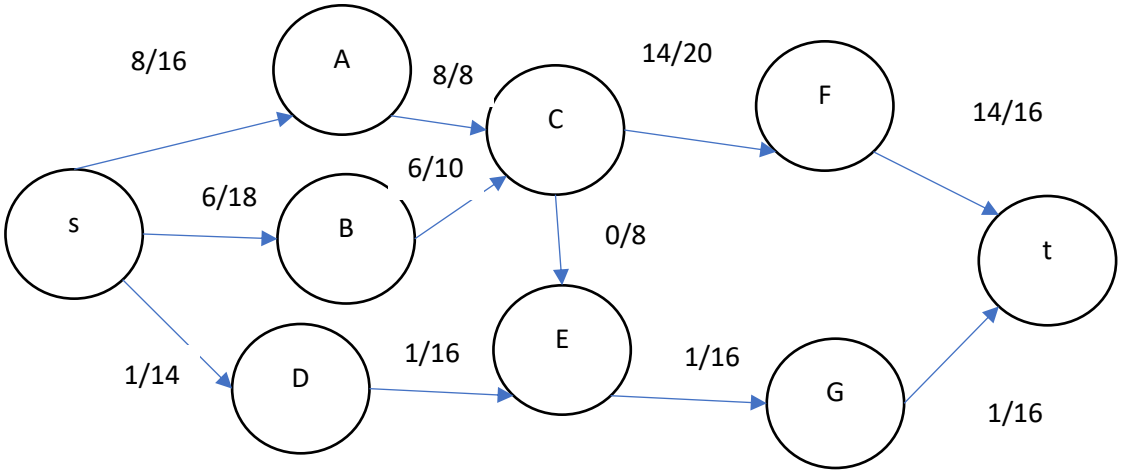
SIS ID:_____ Name:_____

Note: Attempt all the questions

a. In the context of computer networks, what does network flow primarily represent? [0.5]
   1. The rate of data transmission between nodes in a network

b. What happens to the maximum flow if the capacity of an edge in the minimum cut is reduced to zero. [0.5]
   1. The maximum flow decreases

c. Draw the residual network of the following flow network and identify the max-flow using min-cut. (Draw on the back side of the page): [1.5]



d. Does the above flow network satisfy the flow conservation properties? Justify your answer. [0.5]
   Yes, The in-flow=out-flow at each vertices.

e. Find connected components in the above graph. Show all the working and draw the DFS forest. [Solve on the attached extra sheet] [2]

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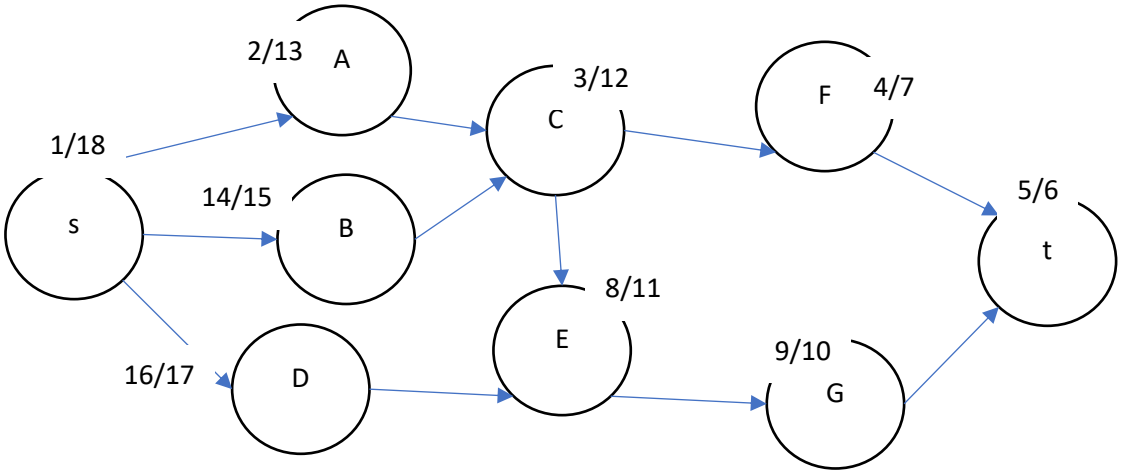

Take the transpose and apply DFS in decreasing order of finish time

DFS Forest