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

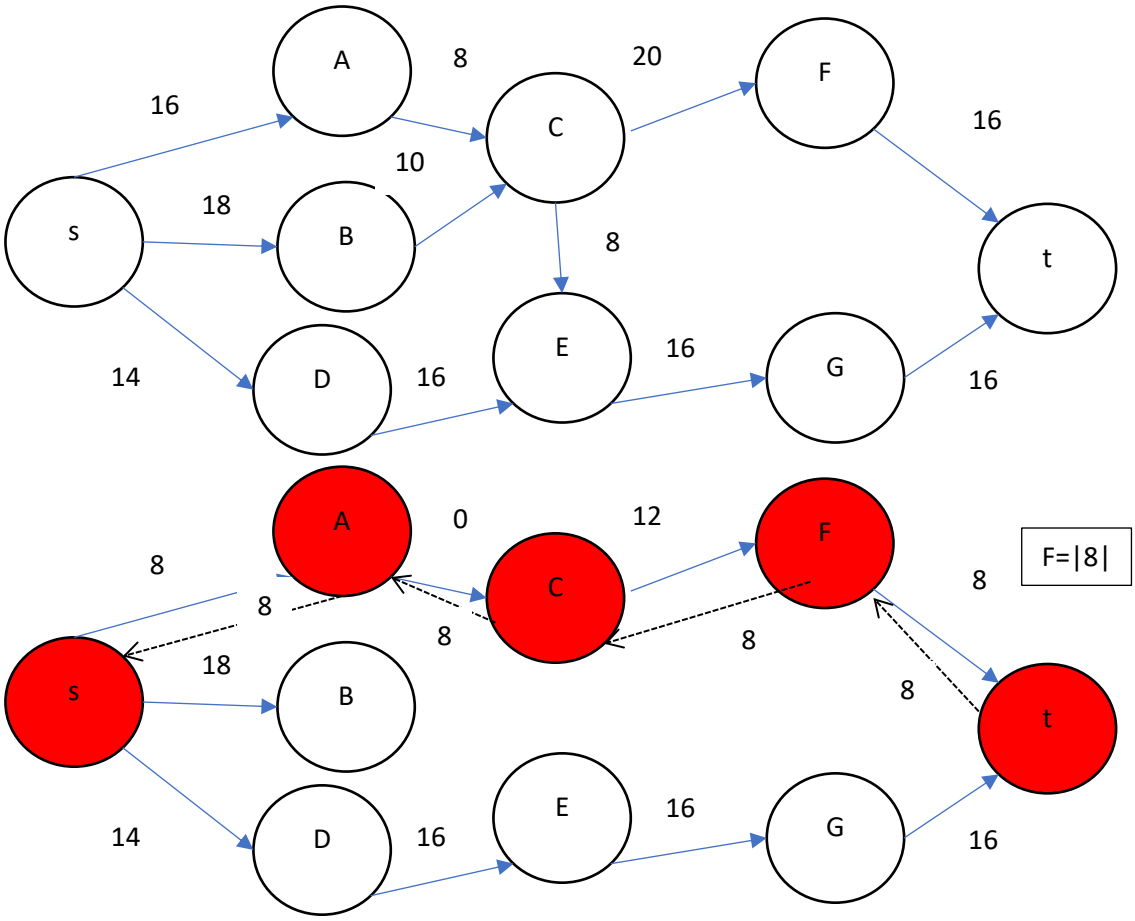
SIS ID:_____ Name:_____

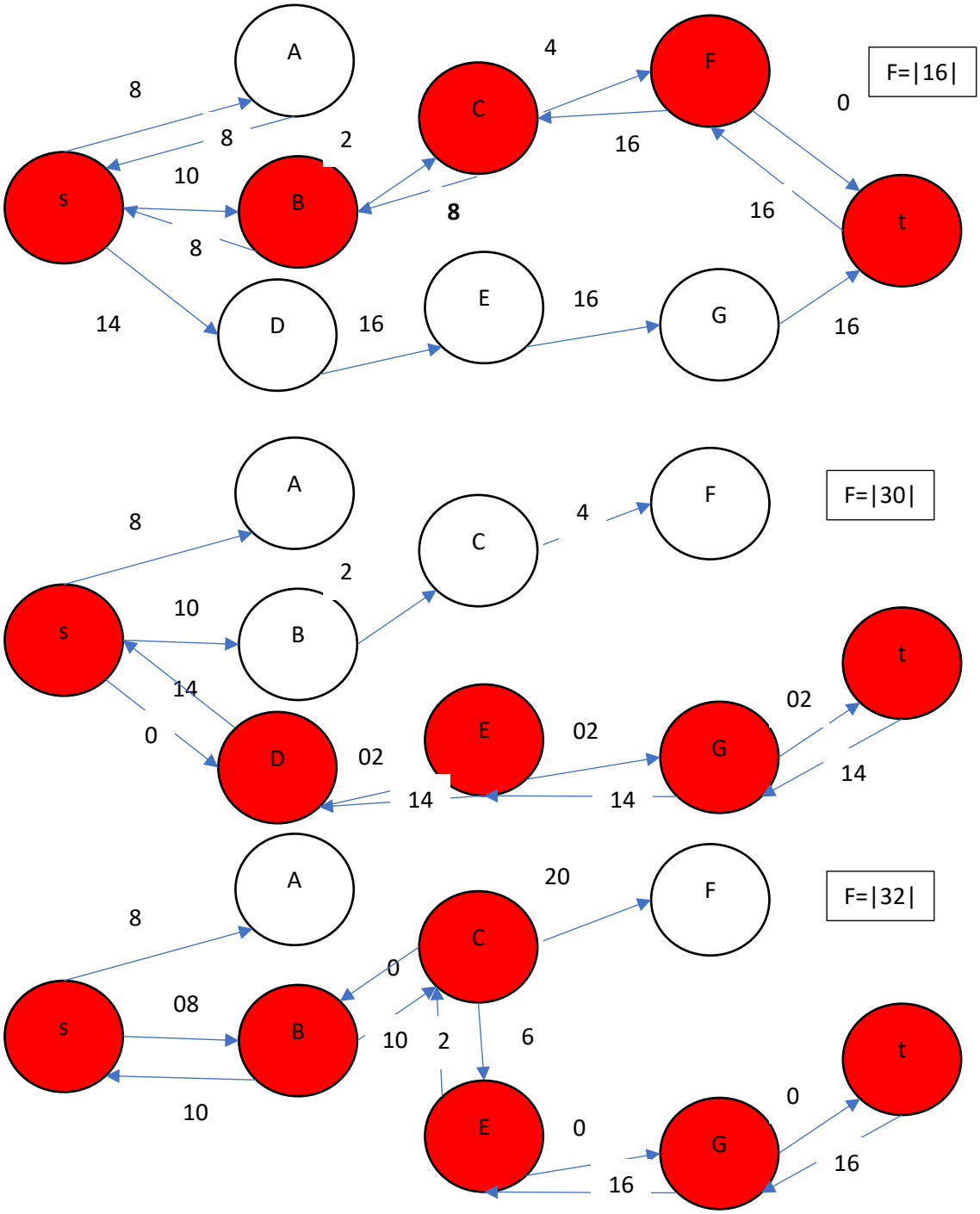
Note: Attempt all the questions

a. Which of the following is not a valid termination condition for Ford-Fulkerson algorithm? [0.5]
   1. The residual graph contains negative capacities.

b. What is the significance of residual graph in Ford-Fulkerson algorithm? [0.5]
   a) It represents the graph with residual capacities after each augmentation.

c. Use BFS to find the augmenting paths and apply the Ford-Fulkerson method on the following graph. [Solve on the attached extra sheet] [2]

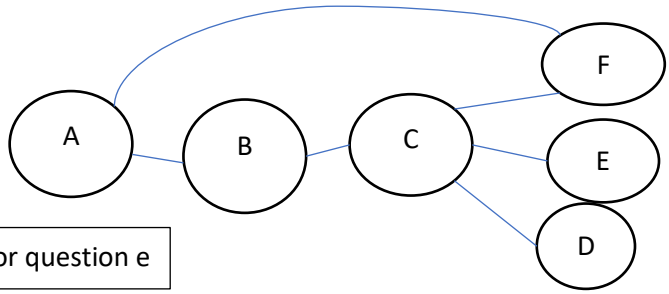




d. Identify the min-cut in the above graph and list the elements of S and T sets. [1]
S={S,A,B,C,D,E,F,G}, T={t}

e. An articulation point is a vertex whose removal increases the number of connected components in the graph. It represents a single point of failure in the graph. Identify the articulation point(s) in the following graph. [1]

Removing C will increase the number of connected components



For question e

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