Data Communication and Networks	**Quiz 4: Inter-Routing**
CSCI-351 Fall 2018	**October 2, 2018**

You have 17 minutes to complete this quiz.

Name: Grading Key

RIT Username: _____

Problem	**Possible**	**Score**
1	5	
2	5	
3	30	
Total	40	

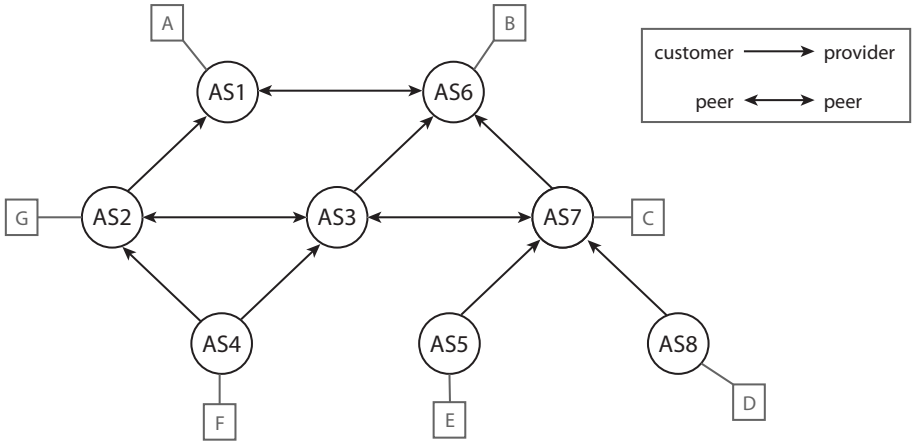
1. Name one in which distance vector routing is better than link state routing. (5 pts)

Advantage of distance vector routing: Unlike link state routing, which must flood link state update packets to all other routers in the network, distance vectors are only exchanged between adjacent routers. This limits the number of routing packets that are transmitted in the network, thereby saving bandwidth for other data packets in the network.

2. Name one in which link state routing is better than distance vector routing. (5 pts)

Advantage of link state routing: Because they rely on the flooding of link state update packets, link state routing algorithms propagate routing information to routers more rapidly than distance vector algorithms. Furthermore, link state routing doesn't suffer from the count-to-infinity problem, which plagues the distance vector algorithm.

3. Consider the network shown in the following figure. Assume that if a customer has an equally good choice of providers to send outbound traffic through, the customer will pick the provider with the lowest AS number. Assume the nodes evaluate path choices using the shortest hop count metric.



3a. What path would host *F* take to reach host *B*? Justify your answer. (10 pts)

F -> AS4 -> AS2 -> AS1 -> AS6 -> B

3b. What path would host *E* take to reach host *G*? Justify your answer. (10 pts)

E -> AS5 -> AS7 -> AS6 -> AS1 -> AS2 -> G

3c. All traffic between *AS5* and *AS8* must transit through *AS7*. Suppose *AS5* and *AS8* want to avoid paying *AS7* for this service. What could they do to reduce their cost? (10 pts)

AS5 and AS8 could establish a peering link that would allow them to exchange traffic directly.