Cpr E 489 Spring 2020
Homework #5
Due Date: 04/14/2020 (Tue) by 11:00 AM
Type your answers and submit on Canvas

1. (50 points) Consider the network shown below. Suppose all nodes run <u>the Link State routing protocol and the Dijkstra's algorithm</u>. *Assume that the tie-breaker goes to the node with a smaller ID in the alphabetical order (e.g., A is smaller than C, and E is smaller than F, and so on.)*
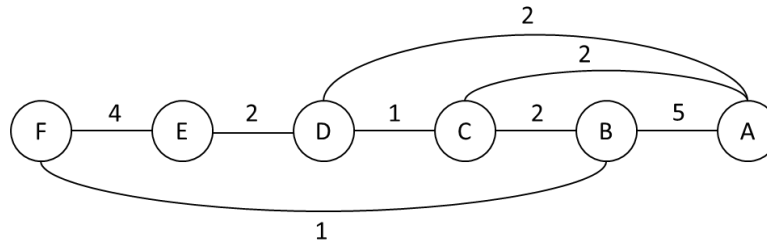
   a) (30 points) Show step by step (as we did in class) how node B computes its shortest paths to all other nodes in the network.

   b) (20 points) After the network stabilizes, show node B's routing table.

2. (50 points) Consider the same network shown in the previous problem. Suppose all nodes instead run <u>the Distance Vector routing protocol with SHPR (Split Horizon with Poisoned Reverse)</u>. *Again, assume that the tie-breaker goes to the node with a smaller ID in the alphabetical order.*

   a) (20 points) Show step by step (as we did in class) how to find the shortest path from each node to destination node D, by completing the following iteration table.

	Iteration	A	B	C	E	F
	Initial	(-, ∞)	(-, ∞)	(-, ∞)	(-, ∞)	(-, ∞)
Destination node D						

   b) (30 points) After the protocol converges, (i) what is the Distance Vector report that A sends to B? (ii) what is the Distance Vector report that C sends to D? (iii) what is the Distance Vector report that F sends to E? Justify your answers.