National University of Computer and Emerging Sciences, Lahore Campus

Quiz ……5 [BS(CS): Section B] Fall 2024

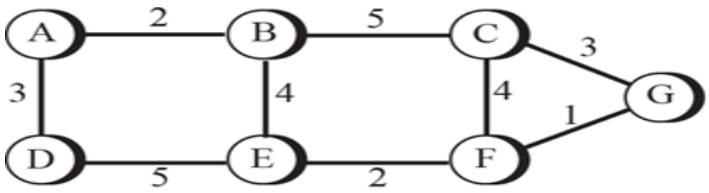
Computer Networks (Code: CS3001) **Quiz Date: December 3, 2024**

Total Marks: 20 **Duration: 20 -Minutes**

Name ---------- Roll #---------- Section --------

Instructions: Answer the question(s) on this sheet. You can make use of rough sheet (not to be attached).

Q1: Apply the distance-vector algorithm and show the distance table entries at node G (initial one and after 1st iteration) by considering the network shown below. Moreover, assume that each node initially knows the costs to each of its neighbors. **(3+2+2+3 = 10)** **[CLO 4]**



Topology

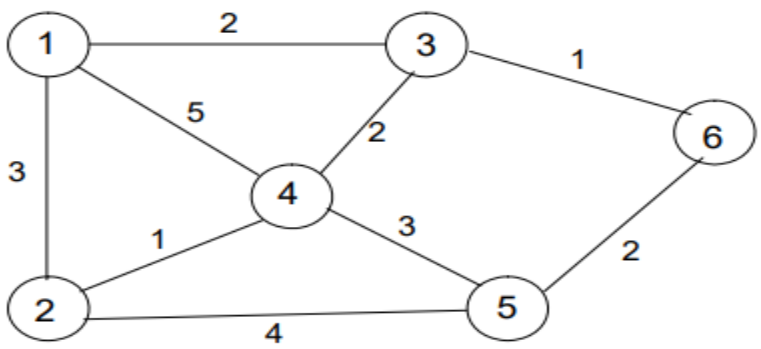
Initial Table

Cost to		A	B	C	D	E	F	G
Cost from	C	∞	∞	∞	∞	∞	∞	∞
	F	∞	∞	∞	∞	∞	∞	∞
	G	∞	∞	**3**	∞	∞	**1**	0

After 1st Iteration

Cost to		A	B	C	D	E	F	G
Cost from	C	∞	5	0	∞	∞	4	3
	F	∞	∞	4	∞	2	0	1
	G	∞	**8**	**3**	∞	3	**1**	0

Q2: Apply Dijkstra algorithm to find the set of shortest paths from node 4 to other nodes by considering the network shown below. Show all the steps of Dijkstra algorithm. What is the shortest path tree? **(6+4 =10) [CLO 4]**



Solution: Check all the steps of the algorithm