Computer Networks
Fall 2022
Assignment # 4 (Section – 5A)

Due Date: Thursday, 17th November, 2022
Submission Mode & Time: Handwritten solutions to be submitted during the lecture.

Please note the following:

1. No exceptions to the above date and time will be allowed. Inability to submit the assignment by the required time will result in zero marks.

2. To ensure self-completion of assignments and discourage plagiarism, the instructor or the relevant TA may randomly contact you and ask for an explanation of your answers. Where plagiarism and/or cheating is evident, you will be referred to the departmental disciplinary committee. In extreme cases of plagiarism an F may be awarded immediately with further referral to university disciplinary committee.

3. All solutions must be **hand-written.**

4. **Assignment Solution Submission**: In case of **in person / physical lectures at the campus**, hard copy of the hand-written assignment's solutions will be submitted by **hand** by each student to the Instructor / TA directly during the lecture on the due date.

Use the following text for completion of this part of the assignment:
Computer Networking - A Top-Down Approach 6th Edition by Kurose & Ross.

PART I:
Solve the following problems from the back of **Chapter 4**. Every Question has equal marks i.e., **(5*7 = 35 marks)**

Review Questions:

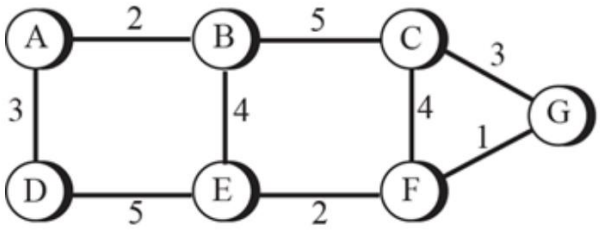
R5, R18, R19

Problems:

P19, P26, P29, P36

PART II: (10 Marks)

Q2: Using the Link State routing algorithm (Dijkstra's Algorithm), build (fill in) the routing table for Node A for the network topology shown in Figure below, where.
– D(v): Cost of the least-cost path from the source node to destination node v as of this iteration of the
algorithm
– p(v): Previous / Predecessor node (neighbor of v) along the current least-cost path from the source to v.
– N': Subset of nodes whose least cost path is definitively known. (i.e., v is in N' if the least-cost path from
the source to v is definitely known.)



Topology

First row (Step 0) has been filled for you.

Step	N'	D(B), v(B)	D(B), v(B)	D(B), v(B)	D(B), v(B)	D(B), v(B)	D(B), v(B)
0	A	2, A	∞	3, A	∞	∞	∞
1							
2							
3							
4							
5							
6							