

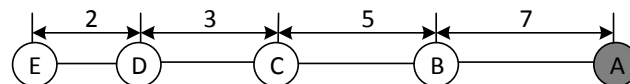


EAST WEST UNIVERSITY
Department of Computer Science and Engineering
B.Sc. in Computer Science and Engineering Program
Final Examination, Fall 2021 Semester

Course: CSE 405 Computer Networks, Sec: 1
Instructor: Dr. Anisur Rahman, Associate Professor, Department of CSE
Full Marks: (5*6 marks) = 30 marks
Time: 50 min (to write) + 10 min (to upload) = 60 min

Note: There are FIVE questions, answer ALL of them. Course Outcome (CO), Cognitive Level and Marks of each question are mentioned at the right margin.

1. Following is a linear subnet comprises of routers A, B, C, D and E; the internal distances between routers are shown in msec. **Show** the initial state considering router A is up. **Calculate** 4 more exchanges after router A gone down and additional 4 more exchanges after A gone up following the previous 4 exchanges for the following linear subnet. [CO3, C2 marks: 6]



2. Briefly explain how hop-by-hop congestion control algorithm is an improvement over choke packet algorithm where routers can get control over its status and get rid of congestion quickly. [CO3, C2 marks: 6]
3. **Analyze** how duration of “age” in the link state packets helps router not being in dark for a substantial amount of time and not to deal with backdated information for long, which is caused by sequenced number errors. [CO3, C2 marks: 6]
4. When packet’s size is greater than its transporting capacity, packets need to be fragmented to transport. If the intermediate networks are connection oriented, **give reasons** what type of fragmentation would be better option and why. [CO3, C3 marks: 6]
5. Following is the orientation of a typical server farm, which does not have shared cache memory because each processing node has its own cache memory. Briefly describe how this feature (i.e., having own cache memory for each processing node), is used to increase performance of the server farm further. [CO3, C3 marks: 6]

