Elec 6861 – Higher Layer Telecommunication Protocols
## (Sample questions for Quiz 2)

Question 1

Let us assume a mobile host MH with home domain A, has reached a foreign domain B, while exchanging IPv4 packets with a fixed host FH that belongs to domain B. We further assume we have home agent HA, foreign agent FA in domain A; and home agent HB, foreign agent FB in domain B. In addition we assume that agent discovery and registration phases have been successfully completed.

1. Draw a sequence diagram with FA, HA, FB, HB, MH, and FH that shows the path the packets sent by FH to MH follow during routing,
2. Draw another sequence diagram with FA, HA, FB, HB, MH, and FH that shows the path the packets sent by MH to FH follow during routing,

Please note that the packets exchanged during discovery and registration should not appear on any of the two diagrams.

Question 2

A simplified network that used the distance vector algorithm and the number of hops as metric is depicted by the figure below –
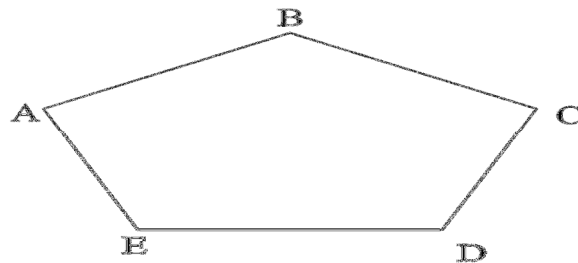
1. Router A is initially down and this is known by all the other routers of the network. Let us now assume that router A goes up. After how many exchanges, will the table contain for every node of the network, the distance to router A? Draw the table after each exchange.
2. Now that the table contains for every node of the network the distance to router A, let us assume that router A goes down again. Draw the tables for the two exchanges that follow the failure of A.
3. Is there a problem? If yes, which problem and how could it be solved?

Question 3

What is the solution used for TCP connection release? Draw a sequence diagram showing it between host A and host B

Question 4

Why does UDP exist? Would it not have been enough to just let user processes send raw IP packets? If no, explain why in a couple of sentences.