Credit Hours System
Advanced Topics on Communications II (ELCN 456)
Communications and Computer Engineering
Spring 2019
Problem Set no. 4

DUE DATE: APRIL 10, 2019 AT 1:00 PM

SUBMIT AT: HTTPS://FORMS.GLE/VB8YRVXMKR8E9KFZA

Question 1

Draw a diagram that illustrates how the ADSL technology enables combined voice and data communications over regular phone lines. Explain the function of each block of your diagram.

Question 2

Host A converts analog voice to a digital 64 kbps bit stream on the fly. Host A then groups the bits into 56-byte packets. There is one link between Host A and B; its transmission rate is 2 Mbps and its propagation delay is 10 msec. As soon as Host A gathers a packet, it sends it to Host B. As soon as Host B receives an entire packet, it converts the packet's bits to an analog signal.
How much time elapses from the time a bit is created (from the original analog signal at Host A) until the bit is decoded (as part of the analog signal at Host B)?
Specify all the sources of delay you consider as well as those you ignore.

Instructions

- This is an individual assignment
- No late assignments are accepted
- Both soft-copies and hard-copies are required
- Questions are equally weighted