

Quiz-1

Ref: *COMPUTER NETWORKS, FIFTH EDITION, ANDREW S. TANENBAUM*

Chapter 1

15. In some networks, the data link layer handles transmission errors by requesting that damaged frames be retransmitted. If the probability of a frame's being damaged is p , what is the mean number of transmissions required to send a frame? Assume that acknowledgements are never lost.

16. A system has an n -layer protocol hierarchy. Applications generate messages of length M bytes. At each of the layers, an h -byte header is added. What fraction of the network bandwidth is filled with headers?

Chapter 3

2. The following character encoding is used in a data link protocol:

A: 01000111 B: 11100011 FLAG: 01111110 ESC: 11100000

Show the bit sequence transmitted (in binary) for the four-character frame A B ESC FLAG when each of the following framing methods is used:

- (a) Byte count.
- (b) Flag bytes with byte stuffing.
- (c) Starting and ending flag bytes with bit stuffing.