

Tutorial 10

Question 1

Suppose that the ALOHA protocol is used to share a 10 Mbps channel and the frame size is 1,500 bytes. Find the maximum throughput of the system in frames/sec.

Question 2

Suppose that the Slotted ALOHA protocol is used to share a 10 Mbps channel and the frame size is 1,500 bytes. Find the maximum throughput of the system in frames/sec.

Question 3

What is the end-to-end distance of a network such that using either ALOHA or CSMA-CD will have the same efficiency? Assume the frame size is 1,500 bytes, the transmission rate of the channel is 1 Gbps, and the propagation speed is 3×10^8 m/s. What is the type of network for this system?

Question 4

Repeat Question 3 with Slotted ALOHA and CSMA-CD. The frame size is reduced to 64 bytes.