

Consider a 100 Mbps link between an earth station (sender) and a satellite (receiver) at an altitude of 2100 km. The signal propagates at a speed of  $3 \times 10^8$  m/s. The time taken (in milliseconds, rounded off to two decimal places) for the receiver to completely receive a packet of 1000 bytes transmitted by the sender is

- ☒ A 15.06
- ☐ B 54.25
- ☐ C 7.08
- ☐ D 4.25

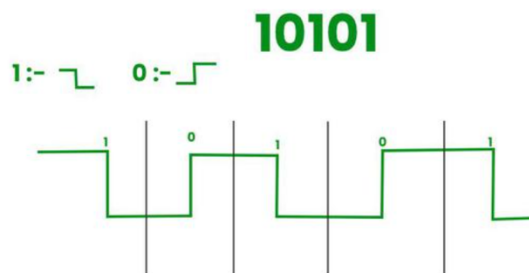
Consider that 15 machines need to be connected in a LAN using 8-port Ethernet switches. Assume that these switches do not have any separate up link ports. The minimum number of switches needed is \_\_\_\_\_.

- ☒ A 2
- ☐ B 3
- ☐ C 4
- ☐ D 5

Consider two hosts X and Y, connected by a single direct link of rate  $10^6$  bits/sec . The distance between the two hosts is 10,000 km and the propagation speed along the link is  $2 \times 10^8$  m/sec . Host X sends a file of 50,000 bytes as one large message to host Y continuously. Let the transmission and propagation delays be p milliseconds and q milliseconds, respectively . Then the values of p and q are

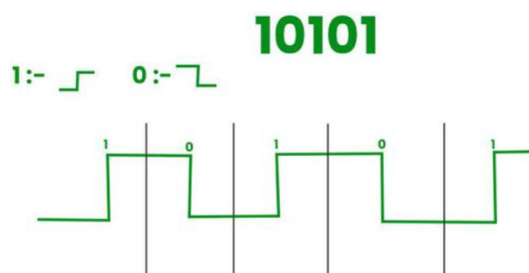
- A**  $p = 50$  and  $q = 100$
- B**  $p = 50$  and  $q = 400$
- C**  $p = 100$  and  $q = 50$
- D**  $p = 400$  and  $q = 50$

**1. Dr. Thomas:** In this manchester encoding 0 is represented as low-to-high and 1 is represented as high-to-low.



*Dr. Thomas Manchester Encoding*

**2. IEEE802.3:** In this manchester encoding, 0 is represented as high-to-low and 1 is represented as low-to-high.



Circuit Switching(Telephone Network): Now in Physical Layer

Packet Switching: Datagram(Network Layer) & Virtual Circuit(DLL)
