

Hosts A and B are each connected to a switch S via 25-Mbps links. The propagation delay on each link is $25 \mu\text{s}$. S is a store-and-forward device; it begins retransmitting a received packet $30 \mu\text{s}$ after it finished receiving it. Calculate the total time required to transmit 8,000 bits from A to B as three 4,000-bit packets sent one right after the other.

None of the mentioned

$1575 \mu\text{s}$

$560 \mu\text{s}$

$570 \mu\text{s}$

$2075 \mu\text{s}$



POWERUNIT

Which of the following is true?

- Single-mode fiber is best designed for longer transmission distances, making it suitable for long-distance telephony and multichannel television broadcast systems.
- Optical fiber is made of glass or plastic and transmits signals in the form of light.
- The speed of the light depends on the density of the medium through which it is traveling (the higher density, the slower the speed).
- Multimode fiber is best designed for short transmission distances, and is suited for use in LAN systems
- All of the mentioned.

A 50-km long cable run at the T1 data rate. The propagation speed in the cable is $\frac{2}{3}$ the speed of light in vacuum. How many bits fit in the cable? (Hint: consider the speed of light in vacuum is 3×10^8).

Four frames, or 772 bits on the cable.

Five frames, or 965 bits on the cable.

Two frames, or 386 bits on the cable.

Three frames, or 579 bits on the cable.

None of the mentioned

[Clear my choice](#)

The bit stuffing is considered a very efficient frame synchronization method as the overhead required is sufficiently fine compared to other relevant methods. On the other hand, physical layer coding violations is well-known frame synchronization method that utilizes the redundancy in physical layer encoding. Which known protocols use these methods, in sequence?

- Ethernet (IEEE 802.11) and HDLC
- DNS and IP
- HDLC and DHCP
- HDLC and Ethernet (IEEE 802.11)
- ARP and ICMP

[Clear my choice](#)

The flow and error control of the Ethernet performed in any layer of the following:

- Network layer
- Application layer
- MAC sub layer
- PHY layer
- LLC sub layer



[Clear my choice](#)

Given the output after byte-stuffing: FLAG A ESC FLAG B ESC ESC C ESC ESC ESC FLAG ESC FLAG D FLAG. What is the original data?

- FLAG A ESC FLAG B ESC ESC C ESC ESC ESC FLAG ESC FLAG D FLAG
- A B C D
- A FLAG B ESC C ESC FLAG FLAG D
- FLAG A FLAG B ESC C ESC FLAG FLAG D FLAG
- A ESC FLAG B ESC ESC C ESC ESC ESC FLAG ESC FLAG D

[Clear my choice](#)

It is the former protocol of the Ethernet. It was used in OSI model. What is it?

SLIP

ARP

HDLC

Frame relay

X.25

[Clear my choice](#)



POWERUNIT

In this network, the users share the network segment with other neighboring users which makes it more susceptible to security threats. Moreover, it is not a good option for many businesses. What is the type of this network?

- Public Switched Telephone Networks
- TV-cable Networks
- Integrated Services Digital Networks
- LANs
- WANs

[Clear my choice](#)

POWERUNIT

A channel has a bit rate of 100 Kbps and a propagation delay of 20 msec. For what range of frame sizes does stop-and-wait give an efficiency of at least 40 percent?

None of the values mentioned

2667 bits

1334 bits

480 bits

320 bits

[Clear my choice](#)

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One of the following data link protocols facilitates the communication with the internet service providers. It is distinguished over others as of being able to auto-configure its connection settings during initialization and afford error detection and recovery.

SLIP

Ethernet

HDLC

PPP

ATM



POWERUNIT

If we want to send data at a rate of 10000 bps through a channel with bandwidth of 2000 Hz. What is the minimum SNR (signal to noise ratio) required?

- 31
- 64
- 32
- 999999
- 63

[Clear my choice](#)



Consider a LAN with a maximum distance of 23km. At what bit rate would the propagation delay (at a propagation speed of 2.3×10^8 m/s) be equal to the transmission delay for 2048-byte packets?

163.840 Mbps

235.52 Mbps

Insufficient information

163840000 Mbps

163840 Mbps

POWERUNIT

Digital subscriber line is a class of any of the following networks:

- LANs
- Public Switched Telephone Networks
- Integrated Services Digital Networks
- TV-cable Networks
- None of the networks mentioned

[Clear my choice](#)

POWERUNIT

It is a protocol used to assign an IP address to a certain MAC address. What is that protocol and at which layer is working?

- DHCP, application layer
- ARP, network layer
- DHCP, data link layer
- ARP, data link layer
- BOOTP, data link layer

[Clear my choice](#)