Data is information that has been translated into a form that is more conducive to storage, transmission, and calculation.

T

Some people call computer terminals thick-client workstations.

False

A type of microcomputer-to-local area network connection that is growing in popularity is the wireless connection

T

To communicate with the Internet using a dial-up modem, a user's computer must connect to another computer that is already communicating with the Internet.

T

It is not possible to connect two local area networks so that they can share peripherals as well as software.

F

Metropolitan area networks can transfer data at fast, LAN speeds but over smaller geographic regions than typically associated with a local area network.

F

The Internet is not a single network but a collection of thousands of networks.

T

One of the most explosive areas of growth in recent years has been cellular phone networks.

T

By the 1970s, telephone systems carried more computer data than voice.

F

Network architectures are cohesive layers of protocols defining a set of communication services.

T

The OSI model tells us what kind of wire or what kind of connector to use to connect the pieces of a network.

F

The application layer of the OSI model is responsible for token management.

F

The session layer of the OSI model is responsible for establishing synchronization points

T

The network layer of the OSI model is an end-to-end layer.

F

The data link layer of the OSI model can incorporate some form of error detection software

T

The TCP/IP protocol suite does not have rigidly defined layers as the OSI model does.

T

Telnet is used to allow a remote user to log in to another computer system.

T

SNMP is used to allow users to send and receive electronic mail.

F

The lowest layer of the TCP/IP protocol suite is the network access or physcial layer.

T

In a network architecture, as the packet moves up through the layers, the data packet shrinks in size.

T

The terms "data" and "signal" mean the same thing.

F

By convention, the minimum and maximum values of analog data and signals are presented as voltages.

T

One of the primary shortcomings of analog data and analog signals is how difficult it is to separate noise from the original waveform.

T

The ability to separate noise from a digital waveform is one of the great strengths of digital systems.

T

A sine wave is used to represent an analog signal.

T

The period of a signal can be calculated by taking the reciprocal of the frequency (1/frequency).

T

The telephone system transmits signals in the range of 150 Hz to 1500 Hz.

F

Attenuation in a medium such as copper wire is a logarithmic loss and is a function of distance and the resistance within the wire.

T

Like signals, data can be analog or digital.

T

Telephones, AM radio, FM radio, broadcast television, and cable television are the most common examples of analog data-to-digital signal conversion.

F

The NRZ-L encoding scheme is simple to generate and inexpensive to implement in hardware.

T

With NRZI, the receiver has to check the voltage level for each bit to determine whether the bit is a 0 or a 1.

F

With NRZ-L, the receiver has to check whether there is a change at the beginning of the bit to determine if it is a 0 or a 1.

F

An inherent problem with the NRZ-L and NRZI digital encoding schemes is that long sequences of 0s in the data produce a signal that never changes.

T

The big disadvantage of the Manchester schemes is that roughly half the time there will be two transitions during each bit.

T

Under some circumstances, the baud rate may equal the bps, such as in the Manchester encoding schemes.

F

Amplitude shift keying is restricted to only two possible amplitude levels: low and high.

F

Amplitude shift keying is susceptible to sudden noise impulses such as the static charges created by a lightning storm.

T

Frequency shift keying is susceptible to sudden noise spikes that can cause loss of data.

F

Phase changes are not affected by amplitude changes, nor are they affected by intermodulation distortions.

T

The bps of the data transmitted using quadrature amplitude modulation is four times the baud rate.

F

According to a famous communications theorem created by Nyquist, the sampling rate using pulse code modulation must be at least three times the highest frequency of the original analog waveform.

F

One of the most common forms of data transmitted between a transmitter and a receiver is textual data.

T

Certain control characters provide data transfer control between a computer source and computer destination.

T

IBM mainframe computers are major users of the EBCDIC character set.

T

ASCII is a data code rarely used in the world.

F

A byte consists of 8 bits.

T

One of the major problems with Unicode is that it cannot represent symbols other than those found in the English language.

F

ASCII is one of the supported code charts in Unicode.

T

In Unicode, the letter "r" is represented by the binary value of 0000 0000 0101 0100 0010.

F

Category 1 twisted pair wire is not recommended for transmitting megabits of computer data.

T

Category 1 wire is susceptible to experiencing noise and signal attenuation.

T

Category 1 twisted pair wire produces less noise and signal attenuation than Category 2.

F

Much of the Category 3 wire sold today is used for new computer network installations.

F

Category 5 twisted pair has a higher number of twists per inch than the Category 1 to 4 wires.

T

Category 1 through 7 twisted pair wires can be purchased only as unshielded twisted pair.

F

The braided metal shield is very good at blocking electromagnetic signals from entering the cable and producing noise.

T

A fairly common application for baseband coaxial used to be the interconnection of hubs within a local area network.

T

Thin coaxial cable typically carries broadband signals.

F

Thick coaxial cable has limited noise isolation and typically carries baseband signals.

F

Electromagnetic interference can be reduced with proper shielding, but it cannot be completely avoided unless you use fiber-optic cable.

T

Fiber-optic cable cannot generate nor be disrupted by electromagnetic interference.

T

Light traveling through air experiences little resistance.

T

It is estimated that in the future, photonic fibers will have transmission speeds and distances at least 10 times that of current fiber-optic cable.

T

Single-mode fiber-optic cable is labeled 62.5/125 cable.

F

Wireless transmissions generally do not have to deal with right-of-way issues.

T

Businesses can use terrestrial microwave to implement telecommunications systems between corporate buildings.

T

Microwave transmissions follow the curvature of the Earth.

F

One way of categorizing satellite systems is by how far the satellite is from the Earth.

T

The advantage to being closer to Earth is that the satellite must continuously circle the Earth to remain in orbit.

F

Satellites that are always over the same point on Earth can be used for long periods of high-speed data transfers.

T

At the end of the twentieth century, there were approximately 3000 LEO satellites.

F

At the end of the twentieth century, approximately 105 MEO satellites were orbiting the Earth.

F

Geosynchronous-Earth-orbit satellites are most commonly used for signal relays for broadcast, cable, and direct television.

T

Four basic generations of cellular telephone systems currently exist.

T

Because each cell uses low-power transmissions, it is not likely that a transmission within one particular cell will interfere with a transmission in another cell.

T

AMPS and D-AMPS technologies generally offer a clearer signal than all PCS technologies.

F

General Packet Radio Service (GPRS) can transmit data at 30 kbps to 40 kbps.

T

IEEE 802.16a is a revision of the 802.16 standard that provides a high-speed connection for slowly moving devices.

F

Data transmission speed is the number of bits per second that can be transmitted.

T

ZigBee is a form of wireless technology used within buildings.

T

ZigBee is capable of transmitting signals for up to one mile.

F

Because white noise is relatively continuous, it can be reduced significantly but never completely eliminated.

T

White noise is dependent on the temperature of the medium.

T

If the impulse spike interferes with an analog signal, removing it without affecting the original signal is extremely easy.

F

If impulse noise interferes with a digital signal, often the original digital signal cannot be recognized and recovered.

F

Noise is a problem for both analog and digital signals.

T

Telephone signal crosstalk was a more common problem before telephone companies used fiber-optic cables and other well-shielded wires.

T

Echo error rarely occurs at junctions where wires are connected.

F

If jitter becomes too great, correcting it can require the transmitting devices to speed up their transmission rates.

F

Attenuation can be eliminated with the use of repeaters for analog systems.

F

An unfortunate side effect of noise during a transmission is that the transmitting station has to slow down its transmission rate.

T

Installing special filters for analog signals and digital signal regeneration for digital signals helps in preventing white noise.

T

TCP performs error detection at the end points of the connection.

T

Simple parity can detect only an even number of erroneous bits per character.

F

The CRC error-detection method treats the packet of data to be transmitted as a large polynomial.

T

The CRC method is almost foolproof.

T

Returning a message was one of the first error-control techniques developed.

T

NAK represents a positive acknowledgment.

F

Sliding window protocols have been around since the 1970s.

T

When a parity bit is assigned to ASCII, the Hamming distance becomes 4.

F

In a stop-and-wait error control system, a receiver may acknowledge multiple packets with a single ACK.

F

In a sliding-winow error control system, a receiver may acknowledge multiple packets with a single ACK.

T

One way to make a connection between two devices more efficient is to compress the data that transfers over the connection.

T

Frequency division multiplexing is the latest multiplexing technique.

F

In frequency division multiplexing, the signal is digital.

F

Cell phones are an example of dynamically assigned channels.

T

Time division multiplexing (TDM) allows only one user at a time to transmit.

T

As with a simple connection between one sending device and one receiving device, maintaining synchronization across a multiplexed link is important.

T

The T-1's original purpose was to provide a high-speed connection between AT&T's switching centers.

T

The T-1 system is a classic application of frequency division multiplexing.

F

A T-1 system sends the equivalent of 24 voice grade telephone lines over one line.

T

A T-1 system continuously sends a signal, even if there is no real data to transmit.

T

SONET is a more modern term for the older T-1 system.

F

SDH was developed in Europe by ITU-T.

T

SONET and SDH are able to multiplex varying speed streams of data onto one fiber connection.

T

The data rate of OC-3 is exactly thirty times the rate of OC-1.

F

The STS multiplexor in a SONET network can accept electrical signals from copper-based media.

T

Both frequency division multiplexing and synchronous time division multiplexing can waste unused transmission space.

T

Wavelength division multiplexing (WDM) is, in essence, a time division multiplexing technique.

F

WDM supports multiple lambdas.

T

Dense wavelength division multiplexing is an expensive way to transmit signals from multiple devices due to the high number of differently colored lasers required in one unit.

T

DSL is capable of achieving speeds into the millions of bits per second.

T

Code division multiplexing is based upon a class of modulation techniques known as spread spectrum technology.

T

The big advantage of frequency division multiplexing over synchronous TDM is the lower noise due to the use of digital signals during transmission.

F

Synchronous time division multiplexing does not require as high-speed a line as statistical time division multiplexing does.

F

Code division multiplexing, while using a fairly wide bandwidth of frequencies and a complex technology, is scalable like WDM.

T

The basic way to perform compression is to look for some common pattern in the data and replace each data pattern with a symbol or symbols that will consume less space during transmission or storage.

T

The Lempel-Ziv algorithm can be fairly effective in compressing data.

T

The human ear can hear sounds only within a certain range, which for an average person is 10 Hz to 40 kHz (40,000 Hz).

F

The MP3 encoder produces a data stream that has a much faster data rate than that of conventional CD-quality music.

F

A video device displays multiple (typically 30) frames per second.

T

On occasion, a company will create a protocol that, while not an official standard, becomes so popular that other companies start using it.

T

One of the latest interface standards is the RS-232 interface.

F

An EIA-232F interface is a full-duplex connection.

T

Because USB provides a digital interface, it is necessary to convert the digital signals of the microcomputer to analog signals for transfer over a connection.

F

When using peripherals that are designed with a USB connector, it is also possible to connect one USB peripheral to another.

T

USB is an example of a full-duplex connection.

F

The procedural component of USB is probably the most involved of the four components.

T

FireWire is similar to USB in that it is hot pluggable.

T

To take advantage of the higher-speed interface of SCSI, you need to install a SCSI adapter in your computer.

T

Rather than being a single shared bus, InfiniBand is a network of high-speed links and switches.

T

An asynchronous connection is the most complex example of a data link protocol.

F

A start bit is always a 1.

F

A stop bit is always a 0.

F

The starting and ending sequences of the synchronous connection are called flags.

T

Because of their higher efficiency, asynchronous connections have almost completely replaced synchronous connections.

F

Examples of real-time applications usually include streaming voice, video, and music.

T

Neither USB nor FireWire support isochronous connections.

F

If control simplicity is your primary goal, point-to-point connection of terminals is clearly superior to multipoint connections.

T

Presently, a medium can be divided in three basic ways: a division of \_\_\_\_, a division of time, and a division of transmission codes.  
a. frequencies c. wavelength  
b. amplitudes d. direction

a. frequencies

\_\_\_\_ is the assignment of nonoverlapping frequency ranges to each "user" of a medium.  
a. Time division multiplexing (TDM) c. Amplitude division multiplexing (ADM)  
b. Transmission code multiplexing (TCM) d. Frequency division multiplexing (FDM)

d. Frequency division multiplexing (FDM)

To allow multiple users to share a single medium, FDM assigns each user a separate \_\_\_\_.  
a. time slot c. channel  
b. transmission code d. amplitude

c. channel

First-generation cellular telephone systems allocated channels using frequency ranges within the 800 to \_\_\_\_ megahertz (MHz) spectrum.  
a. 830 c. 930  
b. 900 d. 960

b. 900

The device that is attached to the receiving end of the medium and splits off each signal to deliver it to the appropriate receiver is called the second multiplexor, or \_\_\_\_.  
a. multiplexor c. splitxor  
b. endplexor d. demultiplexor

d. demultiplexor

In FDM, \_\_\_\_ take up frequencies that might be used for other data channels, thus introducing a certain level of wastefulness.  
a. guard bands c. multiplexors  
b. channels d. demultiplexors

a. guard bands

Since time division multiplexing was introduced, it has split into two roughly parallel but separate technologies: synchronous time division multiplexing and \_\_\_\_ time division multiplexing.  
a. fixed c. inverse  
b. statistical d. empirical

b. statistical

\_\_\_\_ gives each incoming source signal a turn to be transmitted, proceeding through the sources in round-robin fashion.  
a. Statistical time division multiplexing (Stat TDM)  
b. Empirical time division multiplexing (ETDM)  
c. Synchronous time division multiplexing (Sync TDM)  
d. Fixed time division multiplexing (FTDM)

c. Synchronous time division multiplexing (Sync TDM)

Under normal circumstances, the synchronous time division multiplexor maintains a simple \_\_\_\_ sampling order of the input devices.  
a. round-robin c. LIFO  
b. FIFO d. FILO

a. round-robin

Three types of synchronous time division multiplexing that are popular today are T-1 multiplexing, \_\_\_\_ multiplexing, and SDH.  
a. EIA-232F c. SONET  
b. IPS/SPX d. RS-232

c. SONET

In the 1960s, AT&T created a service known as \_\_\_\_, which multiplexed digital data and digitized voice onto a high-speed telephone line with a data rate of 1.544 megabits per second.  
a. ISDN c. SONET  
b. T-1 d. SDH

b. T-1

\_\_\_\_ multiplexing is the multiplexing technique used to support SONET.  
a. FDM c. Frequency division  
b. ADM d. Synchronous time division

d. Synchronous time division

A \_\_\_\_ multiplexes 24 input channels together onto one high-speed telephone line.  
a. T-1 system c. SDH system  
b. SONET system d. congruent system

a. T-1 system

A T-1 system multiplexes \_\_\_\_\_\_\_ into each frame.  
a. a single ASCII character c. a single SYNC bit  
b. a single LENGTH byte d. a single SYNC byte

c. a single SYNC bit

SONET was developed in the United States by \_\_\_\_.  
a. ISO c. IEEE  
b. ANSI d. IETF

b. ANSI

SONET and SDH are both \_\_\_\_ multiplexing techniques.  
a. synchronous c. empirical  
b. statistical d. random

a. synchronous

SONET defines a hierarchy of signaling levels, or data transmission rates, called \_\_\_\_.  
a. statistical transport signals (StatTS) c. asynchronous transport signals (ATS)  
b. empirical transport signals (ETS) d. synchronous transport signals (STS)

d. synchronous transport signals (STS)

It is relatively simple to multiplex four STS-12 signals into one \_\_\_\_ signal.  
a. STS-8 c. STS-32  
b. STS-16 d. STS-48

d. STS-48

The STS-1 signaling level supports \_\_\_\_ frames per second.  
a. 8000 c. 32000  
b. 16000 d. 64000

a. 8000

Statistical time division multiplexing is sometimes called \_\_\_\_ time division multiplexing.  
a. empirical c. asynchronous  
b. random d. synchronous

c. asynchronous

\_\_\_\_ multiplexes multiple data streams onto a single fiber-optic line.  
a. Statistical time division multiplexing (Stat TDM)  
b. Wavelength division multiplexing (WDM)  
c. Time division multiplexing (TDM)  
d. Channel division multiplexing (CDM)

b. Wavelength division multiplexing (WDM)

\_\_\_\_ uses different wavelength (frequency) lasers to transmit multiple signals at the same time over a single medium.  
a. Wave division multiplexing c. Channel division multiplexing  
b. Statistical time division multiplexing d. Time division multiplexing

a. Wave division multiplexing

\_\_\_\_ is designed for short-distance connections and has only a few lambdas, with a greater space between lambdas.  
a. Dense wavelength division multiplexing (DWDM)  
b. Fixed wavelength division multiplexing (FWDM)  
c. Coarse wavelength division multiplexing (CWDM)  
d. Inverse wavelength division multiplexing (IWDM)

c. Coarse wavelength division multiplexing (CWDM)

\_\_\_\_ is the technology behind the popular digital subscriber line (DSL) system.  
a. Time division c. Wavelength division  
b. Amplitude division d. Discrete multitone

d. Discrete multitone

\_\_\_\_ is a technology that allows a high-speed data signal to traverse a standard copper-based telephone line.  
a. DSL c. EIA-232F  
b. RS-232 d. FireWire

a. DSL

Chip spreading codes are \_\_\_\_ bits in length.  
a. 32 c. 128  
b. 64 d. 256

b. 64

\_\_\_\_ division multiplexing is a good choice for connecting a number of lower-speed devices that do not transmit data on a continuous basis to a remote computer system.  
a. Statistical time c. Discrete tone  
b. Time d. Frequency

a. Statistical time

\_\_\_\_ division multiplexing is a good technique for transmitting multiple concurrent signals over a fiber-optic line.  
a. Statistical time c. Frequency  
b. Synchronous time d. Wavelength

d. Wavelength

\_\_\_\_ technology is a unique form of multiplexing in that all the subchannels multiplexed together are intended for one user.  
a. Time division c. Frequency division  
b. Discrete multitone d. Code division

b. Discrete multitone

Code division multiplexing can produce system capacities that are \_\_\_\_ times those of frequency division multiplexing systems.  
a. 2 to 4 c. 4 to 8  
b. 3 to 6 d. 8 to 10

d. 8 to 10

If a compression technique does lose some of the data as a result of the compression process, then it is referred to as a \_\_\_\_ compression technique.  
a. complete c. lossy  
b. random d. lossless

c. lossy

\_\_\_\_ replaces any repetitions of the same bit or byte that occur in a sequence of data with a single occurrence of the bit/byte and a run count, or simply with a run count.  
a. Run-length encoding c. Random compression  
b. Lossy compression d. Full encoding

a. Run-length encoding

A technique that can be used to compress data when a \_\_\_\_ compression is necessary is the Lempel-Ziv technique.  
a. random c. lossy  
b. run-length d. lossless

d. lossless

\_\_\_\_, which is an abbreviation for MPEG (Moving Picture Experts Group) Audio Layer-3, is a common form of audio compression.  
a. MPEG c. MP3  
b. GIF d. JPEG

c. MP3

\_\_\_\_\_ is a technique that is very commonly used to compress video images.  
a. JPEG c. MP3  
b. MPEG d. AAA

a. JPEG

MPEG-1 and MPEG-2—or simply MPEG—are common examples of \_\_\_\_ compression.  
a. wavelength encoding c. code division  
b. differential encoding d. frequency encoding

b. differential encoding

Discrete multitone (DMT) is a multiplexing techinque commonly found in \_\_\_\_\_\_\_ systems.  
a. TDM c. ATM  
b. DSL d. microwave

b. DSL

White noise is also called thermal noise or \_\_\_\_ noise.  
a. crosstalk c. Gaussian  
b. jitter d. spike

c. Gaussian

Impulse noise is also known as \_\_\_\_.  
a. noise spike c. attenuation  
b. jitter d. crosstalk

a. noise spike

Typically, impulse noise is a(n) \_\_\_\_ burst of energy.  
a. digital c. binary  
b. analog d. logical

b. analog

High humidity and wet weather can cause an increase in electrical \_\_\_\_ over a telephone system.  
a. compression c. jitter  
b. attenuation d. crosstalk

d. crosstalk

To minimize the effect of echo, a device called a(n) \_\_\_\_ can be attached to a line.  
a. echo suppressor c. amplifier  
b. repeater d. hub

a. echo suppressor抑制器

\_\_\_\_ is the result of small timing irregularities that become magnified during the transmission of digital signals as the signals are passed from one device to another.  
a. White noise c. Attenuation  
b. Jitter d. Echo

b. Jitter d

Causes of jitter can include electromagnetic interference, \_\_\_\_, passing the signal through too many repeaters, and the use of lower-quality equipment.  
a. coding c. compression  
b. sampling d. crosstalk

d. crosstalk

\_\_\_\_ is not necessarily a form of error, but can indirectly lead to an increase in errors affecting the transmitted signal.  
a. Impulse noise c. Attenuation  
b. Crosstalk d. White noise

c. Attenuation

\_\_\_\_ means that if the transmitting modem sends data and the data arrives garbled, the receiving modem may ask the transmitting modem to fall back to a slower transmission speed.  
a. Impulse negotiation c. Attenuation  
b. Fallback negotiation d. Downlink

b. Fallback negotiation协商

Twisted pair Category 5e/6 cable should not be longer than the recommended 100-meter (300-foot) distance when it's transmitting at \_\_\_\_ Mbps.  
a. 100 c. 500  
b. 250 d. 1000

a. 100

Installing proper shielding on cables prevents \_\_\_\_.  
a. white noise c. attenuation  
b. impulse noise d. crosstalk

d. crosstalk

Error detection can be performed in several places within a communications model. One of the most common places is the TCP/IP \_\_\_\_ layer.  
a. network c. network access/data link  
b. application d. physical

c. network access/data link

The most basic error-detection techniques are parity checks, which are used with \_\_\_\_ connections.  
a. synchronous c. statistical  
b. asynchronous d. fiber-optic

b. asynchronous

With \_\_\_\_ parity, the 0 or 1 added to the string produces an even number of binary 1s.  
a. even c. longitudinal  
b. odd d. binary

a. even

Isolated single-bit errors occur \_\_\_\_ percent of the time.  
a. 30 to 40 c. 50 to 60  
b. 40 to 50 d. 60 to 70

c. 50 to 60

Error bursts occur \_\_\_\_ percent of the time.  
a. 2 to 5 c. 8 to 10  
b. 5 to 10 d. 10 to 20

d. 10 to 20

Longitudinal parity is sometimes called longitudinal redundancy check or \_\_\_\_ parity.  
a. vertical c. random  
b. horizontal d. binary

b. horizontal

The cyclic redundancy checksum (CRC) is also called \_\_\_\_.  
a. horizontal parity c. bit parity  
b. vertical cyclic parity d. cyclic checksum

d. cyclic checksum

CRC-\_\_\_\_ is found in Ethernet LANs.  
a. 5 c. 32  
b. 12 d. 64

c. 32

\_\_\_\_ for error control is becoming a mode of operation for some modern wide area network transmission techniques.  
a. Returning a message c. Correcting the error  
b. Doing nothing d. Fixing the error

b. Doing nothing

\_\_\_\_ is offered by telephone companies to transfer data over wide areas.  
a. RS-232 c. SSL  
b. EIA-232F d. Frame Relay

d. Frame Relay

\_\_\_\_ cable is the medium least prone to generating errors.  
a. Fiber-optic c. Twisted-pair  
b. Coaxial d. Copper-based

a. Fiber-optic

\_\_\_\_ is probably the most common form of error control.  
a. Do nothing  
b. Correct the error without retransmission  
c. Sending a message back to the transmitter  
d. Correct the error with retransmission

c. Sending a message back to the transmitter

\_\_\_\_ error control is a technique usually associated with the Stop-and-wait flow control protocol.  
a. Stop-and-wait c. Sliding window  
b. Timeout d. ACK

a. Stop-and-wait

When working with stop-and-wait error control, the amount of time a station waits before retransmitting a packet is called \_\_\_\_.  
a. stop time c. NAK time  
b. ACK time d. timeout

d. timeout

\_\_\_\_ is a flow control scheme that allows a station to transmit a number of data packets at one time before receiving some form of acknowledgment.  
a. Stop-and-wait c. Timeout  
b. Sliding window d. ACK window

b. Sliding window

With the sliding window protocol, a station that had a maximum window size of 7 could transmit only \_\_\_\_ data packets at one time before it had to stop and wait for an acknowledgment.  
a. 5 c. 7  
b. 6 d. 8

c. 7

A \_\_\_\_ protocol's function is simply to inform the transmitter what piece of data is expected next.  
a. CRC-16 c. stop-and-wait  
b. CRC-32 d. sliding window

d. sliding window

For a receiver to be able to fix an error—in a process called \_\_\_\_—redundant information must be present so that the receiver knows which bit or bits are in error and what their original values were.  
a. forward error correction c. backward error correction  
b. forward error detection d. backward error detection

a. forward error correction

If a receiver correctly receives packets 2, 3, and 4, it will respond with a(an) \_\_\_\_ .  
a. ACK 3 c. ACK 5  
b. ACK 4 d. NAK

c. ACK 5

If a receiver has just received one packet of data with bytes numbered 600 to 700, it will respond immediately with \_\_\_\_.  
a. an ACK of 700 c. an ACK of 800  
b. an ACK of 701 d. it will not respond just yet

b. an ACK of 701

The connection to a peripheral is often called the \_\_\_\_.  
a. USB c. FireWire  
b. interface d. EIA-232F

b. interface

An interface standard can consist of four parts, or components, all of which reside at the \_\_\_\_ layer.  
a. network c. physical  
b. data link d. transport

c. physical

An interface standard can consist of four parts, or components: the electrical component, the mechanical component, the \_\_\_\_ component, and the procedural component.  
a. functional c. administrative  
b. automatic d. organizational

a. functional

The \_\_\_\_ component of an interface deals with items such as the connector or plug description.  
a. administrative c. procedural  
b. functional d. mechanical

d. mechanical

The \_\_\_\_ component of an interface describes how the particular circuits are used to perform an operation.  
a. electrical c. procedural  
b. functional d. mechanical

c. procedural

In modem interfacing terminology, the computer (or terminal) end of an interface is referred to as \_\_\_\_.  
a. data communicating equipment (DCE) c. data transmitting equipment (DTE)  
b. data terminating equipment (DTE) d. data receiving equipment (DRE)

b. data terminating equipment (DTE)

In modem interfacing terminology, the modem is referred to as the \_\_\_\_.  
a. data communicating equipment (DCE) c. data transmitting equipment (DTE)  
b. data terminating equipment (DTE) d. data receiving equipment (DRE)

a. data communicating equipment (DCE)

To define functional and procedural components, EIA-232F incorporates the ITU's \_\_\_\_ standard.  
a. ISO 2110 c. RS-232  
b. V.28 d. V.24

d. V.24

A \_\_\_\_ connection is one in which both sender and receiver may transmit at the same time.  
a. full-duplex c. single-duplex  
b. half-duplex d. multi-duplex

a. full-duplex

Some systems, for various reasons, allow only one side or the other to transmit at one time. This type of connection is an example of a \_\_\_\_ connection.  
a. full-duplex c. single-duplex  
b. half-duplex d. multi-duplex

b. half-duplex

The idea behind \_\_\_\_ is that the peripheral can simply be plugged in and turned on, and that the computer should dynamically recognize the device and establish the interface.  
a. RS-232 c. daisy-chaining  
b. EIA-232F d. hot plugging

d. hot plugging

The \_\_\_\_ component of USB strictly specifies the exact dimensions of the interface's connectors and cabling.  
a. procedural c. mechanical  
b. functional d. electrical

c. mechanical

A(n) \_\_\_\_ is simply a high-speed connection to which multiple devices can attach.  
a. pin c. circuit  
b. bus d. interface

b. bus

FireWire supports two types of data connections: an asynchronous connection and a(n) \_\_\_\_ connection.  
a. synchronous c. parallel  
b. timed d. isochronous

d. isochronous只表示一个signal,包含synchronous and asynchronous

\_\_\_\_ is a technique for interfacing a computer to high-speed devices such as hard disk drives, tape drives, CDs, and DVDs.  
a. Serial c. SCSI  
b. RS-232 d. EIA-232F

c. SCSI

SCSI is a \_\_\_\_ interface and not just an interface technique for hard disk drives.  
a. systems c. server  
b. terminal d. driver

a. systems

You can connect up to \_\_\_\_ different SCSI devices to one SCSI adapter.  
a. 2 c. 6  
b. 4 d. 7

d. 7

\_\_\_\_ is a serial connection or bus that can carry multiple channels of data at the same time.  
a. InfiniBand c. SCSI  
b. Fibre Channel d. USB

a. InfiniBand

InfiniBand can support data transfer speeds of all of the following EXCEPT \_\_\_\_ per second.  
a. 1.5 billion bits (1.5 gigabits) c. 5 billion bits (5 gigabits)  
b. 2.5 billion bits (2.5 gigabits) d. 10 billion bits (10 gigabits)

a. 1.5 billion bits (1.5 gigabits)

InfiniBand can address (interconnect) \_\_\_\_ of devices, using both copper wire and fiber-optic cables.  
a. tens c. thousands  
b. hundreds d. millions

c. thousands

Fibre Channel can support the interconnection of up to \_\_\_\_ devices only.  
a. 56 c. 256  
b. 126 d. 512

b. 126

To prepare a data character for transmission, a \_\_\_\_ bit is added to the beginning of the character and informs the receiver that an incoming data frame is arriving.  
a. start c. end  
b. stop d. parity

a. start

At the end of the data character, one or two \_\_\_\_ bits are added to signal the end of the frame.  
a. start c. check  
b. parity d. stop

d. stop

With a(n) \_\_\_\_ connection, the unit of transmission is a sequence of characters.  
a. asynchronous c. synchronous  
b. parity d. serial

c. synchronous

A direct connection between a terminal and a mainframe computer is a \_\_\_\_ connection.  
a. multipoint c. single-point  
b. point-to-point d. direct-point

b. point-to-point

During the early years of computing, a mainframe computer was called the \_\_\_\_.  
a. secondary c. dumb end  
b. terminal d. primary

d. primary

During the early years of computing, a terminal was called the \_\_\_\_.  
a. secondary c. dumb end  
b. terminal d. primary

a. secondary

A primary that performs \_\_\_\_ polling polls only the first terminal, which then passes the poll to the second terminal, and each successive terminal passes the poll along.  
a. roll-call c. hub  
b. selection d. terminal

c. hub

With \_\_\_\_ connections, polling is not necessary because there is only one terminal per line.  
a. point-to-point c. terminal-to-point  
b. multipoint d. primary-to-point

a. point-to-point