Started on	Monday, 10 January 2022, 9:26 PM
State	Finished
Completed on	Monday, 10 January 2022, 9:55 PM
Time taken	29 mins 52 secs
Grade	**19.62** out of 20.00 (**98**%)

Question **1**

Partially correct

Mark 19.62 out of 20.00

In a [circuit-switching] ✔ network, a dedicated communications path is established between two stations through the nodes of the [network] ✔ . That path is a connected sequence of physical links between nodes.

In a [packet-switching] ✔ network, it is not necessary to dedicate transmission capacity along a path through the [network] ✔ . Rather, data are sent out in a sequence of small chunks.

The [physical] ✔ layer covers the [physical] ✔ interface between a data transmission device and a transmission medium or [network] ✔ .

[UDP] ✔ does not guarantee delivery, preservation of sequence, or protection against duplication.

For the duration of the connection, each entity keeps track of [TCP] ✔ segments coming and going to the other entity, in order to regulate the flow of segments and to recover from lost or damaged segments.

The term [direct] ✔ link is used to refer to the transmission path between two devices in which signals propagate [directly] ✔ from transmitter to receiver with no intermediate devices, other than amplifiers or repeaters used to increase signal strength. Note that this term can apply to both guided and unguided media.

In [simplex] ✔ transmission, signals are transmitted in only one [direction] ✔ ; one station is transmitter and the other is receiver. In [half-duplex] ✔ operation, both stations may transmit, but only one at a time. In [full-duplex] ✔ operation, both stations may transmit [simultaneously] ✔ .

We have said that effective [bandwidth] ✔ is the band within which most of the signal energy is concentrated.

An [analog] ✔ signal is a continuously varying electromagnetic wave that may be propagated over a variety of media, depending on spectrum; examples are wire media, such as twisted pair and coaxial cable; fiber optic cable; and unguided media, such as atmosphere or [space] ✔ propagation. A [digital] ✔ signal is a sequence of voltage pulses that may be transmitted over a wire medium; for example, a constant positive voltage level may represent binary 0 and a constant negative voltage level may represent binary 1.

With [synchronous] ✔ transmission, a block of bits is transmitted in a steady stream without start and stop codes.

[delay] ✔ distortion is a phenomenon that occurs in transmission cables (such as twisted pair, coaxial cable, and optical fiber); it does not occur when signals are transmitted through the air by means of antennas.

Consider that a sequence of bits is being transmitted, using either analog or digital signals. Because of [delay] ✔ distortion, some of the signal components of 1 bit position will spill over into other bit positions, causing [inter-symbol] ✔ interference, which is a major limitation to maximum bit rate over a transmission channel.

[thermal] ✔ noise is due to [thermal] ✔ agitation of electrons. It is present in all electronic devices and transmission media and is a function of temperature.

[thermal] ✔ noise is uniformly distributed across the bandwidths typically used in communications systems and hence is often referred to as [white] ✔ noise.

The noise is assumed to be independent of frequency ✔ . Thus the thermal ✔ noise in watts present in a bandwidth ✔ of B hertz can be expressed as N = kTB

The maximum rate at which data can be transmitted over a given communication path, or channel, under given conditions, is referred to as the channel capacity ✔ .

The signal-to-noise ratio is important in the transmission of digital data because it sets the upper bound on the achievable 25. Shannon's result is that the maximum channel capacity ✔ , in bits per second, obeys the equation C = B log2 (1 + SNR)

We define the spectral efficiency ✔ , also called bandwidth efficiency, of a digital transmission as the number of bits per second of data that can be supported by each hertz of bandwidth ✖ .

A twisted pair ✔ consists of two insulated copper wires arranged in a regular spiral pattern. A wire pair acts as a single communication link. Typically, a number of these pairs ✔ are bundled together into a cable by wrapping them in a tough protective sheath, or jacket.

insertion loss ✔ in this context refers to the amount of attenuation across the link from the transmitting system to the receiving system.

near-end crosstalk ✔ (NEXT) loss as it applies to twisted-pair wiring systems is the coupling of the signal from one pair of conductors to another pair.

An optical fiber ✔ is a thin, flexible medium capable of guiding an optical ray. Various glasses and plastics can be used to make optical fiber ✔ .

For any type of wireless communication the signal disperses ✔ with distance. Therefore, an antenna with a fixed area receives less ✔ signal power the farther it is from the transmitting antenna. For satellite communication this is the primary mode of signal loss ✔ . Even if no other sources of attenuation or impairment are assumed, a transmitted signal attenuates ✔ over distance because the signal is being spread ✔ over a larger and larger area. This form of attenuation is known as free space loss ✔ , which can be expressed in terms of the ratio of the radiated power Pt to the power Pr received by the antenna or, in decibels, by taking 10 times the log of that ratio. For the ideal isotropic antenna.

If a signal f(t) is sampled ✔ at regular intervals of time and at a rate higher than twice the highest signal frequency ✔ , then the samples ✔ contain all the information of the original signal. The function f(t) may be reconstructed from these samples ✔ by the use of a lowpass ✔ filter.

lowpass	white	network	width	data rate	direction
analog	delay	disperses	optical fiber	attenuates	free space loss
samples	UDP	bandwidth	simplex	spectral efficiency	less
half-duplex	simultaneously	loss	sampled	insertion loss	pairs
digital	channel capacity	more	packet-switching	physical	direct
twisted pair	circuit-switching	spread	full-duplex	directly	inter-symbol
space	frequency	thermal	synchronous	near-end crosstalk	TCP

Your answer is partially correct.

You have correctly selected 51.
I changed bandwidth to width, because used two times in words list, So I will correct later...

The correct answer is:
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◀ MTE

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