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COMPUTER COMMUNICATION & NETWORK

Total Marks :30

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Question No 1:→

Answer (a) :→

Yes, The internet model are The network layers. And Physical, data link & Network layes are Network Supports Layers.

Answer (b) :→

There are Three types of transmission Impairments.
(1) Attenuation (2) delay distortion and (3) Noise.

(1) Attenuation :→
The impairment is caused by the strength of signals That degrades with distance over a transmission-link.

(2) Delay distortion :→
The velocity of Propagation of a signal Through a guided mediem varies with frequencies. It is fast at The center of The frequency.

(3) Noise :→
Impairment occurs when are unwanted signal is Inserted between transmission & reception.
There are four types of noises :-
(1) Thermal Noise, (2) Cross talk, (3) Impulse & Occuss.

Answer (c) :→

In shannon capacity tells The maximum rate at which Information can be transmitted over a Communications Channel of a Specified bandwidth In The Presence of Capacity of Noice.

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Answer (d) :=>

The main Compare between The Contrast flow control & error Control is That The flow Control observes The Proper flow of The data from Sender to receiver on the otherhand -

The error Control observes That The data delivered to The reciever is error free and relaible.

Answer (e) :=>

The Piggybacking in a wireless Communication context, is The unauthorized access of a wireless lan - Piggy backing is usefull to Improve The efficiency of bidirectional transmission when a frame is Carrying data from A to B - also Control frames from B. when frames data from B to A -

The Piggybacking used in white osi layer which Provide you with an Understanding of each Seven layers - Including Their function & Their relationships to each other -

Answer (f) :=>

HDLC is a group of Protocols of rules for transmitting data between network Points Sometimes called -

Transfer Modes :=>

HDLC Supports two types of transfor modes,

In Normal Response Mode Here two types of station are there are a primary station That send Commands & station That Can respond to received Commands. it is used for point to point & multipoint Connections.

In Asynchronous Balanced mode Here The

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Configuration is balanced. each station can both Send Commands & respond to commands - it is used for only Point-to-Point Communications.

HDLC Frame :⇒

Is a bit-oriented Protocol where each frames contains up to six fields. The structure varies according to types of frame. The field of a HDLC frames are:

Flag :⇒

It is a 8 bit sequence that marks the beginning and the end of the frame. The bit Pattern of the flag is 01111110.

Answer (9) :⇒

Noiseless channels Is have an ideal channel in which no frames are lost, duplicated or currupted. I The channels is error free& as a mechanism in The corresponding protocols.

The are two protocals for this types of channels.

(a) Simplest Protocol :⇒

Simplest Protocol that The receiver can immediately handle any frame it recieves with a Processing time that is small enough to be negligible → In The otter words, The reciever can never be overhelmed with incomming frames.

(b) Stop & wait Protocol :⇒

In This Protocol The data frames arrives at The reciever site faster than they can processed, The frames must be stored

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unlill Their use -
→ Normally Thu reciever does not have enough storage space -

Answer (h) :→

Differential Enconding :→
(DE) is the first and Thu most common approach Tlat has been used to mitigate Thu cycle slips in optical sub state.

Difference b/w NRZ-L & NRZI :→
→ Thu Non return to zero-Level (NRZ-L) is a data encondind scheme in which a negative voltage is used to represent binary one & a positive voltage is used represent binary zero -
→ Thu Thu (NRZ-I) maitains a constant voltage pulse for Thu duration of a bit time. Thu data Tlemselves are enconding as Thu presence or absence of a signal transition at Thu beginning of the bit time.

Name of Coding Schemes of multilevel binary & Bi phase :→
Thu are five Name of multilevel :→
(1) Unipolar
(2) Polar (NRZ-I, NRZ-L, RZ, & Bi Phase)
(3) Bipolar (AMI, Psudoternary)
(4) Multilevel
(5) Multitransition.

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Question No 2 :→

Answer (i) :→

As There a Problem in a Network is That Unless The Curryptions Caused the CRC for The Packet to be Valid The Packet would be discarded. with TCP, The Sender would time out on a missing acknowledgement, and retransmit The Packet. with UDP, The lost Packet would not be detected as missing unless a Higher Level such as The application Spotted The loss.

Answer (ii) :→ (j)

Solution :→

Adivice Sending rate.

1 Mbps = 0.8 Seconds.

~~Bit Duration = 100 bits ÷ 1 mbps = 0.5 sec~~

~~8 bits ÷ 1 mbps = 0.08 sec~~

8 bits = 8 × 0.8 = 6.4 per seconds.

Answer (K) :→

we Can use The approximate formula

$C = B(SNR_{dB}/3)$ or $SNR_{dB} = (3C)/B$

we Can say That The maximum

$SNR_{dB} = 3 \times 100 \text{ Kbps} / 4 \text{ KHz} = 75$,

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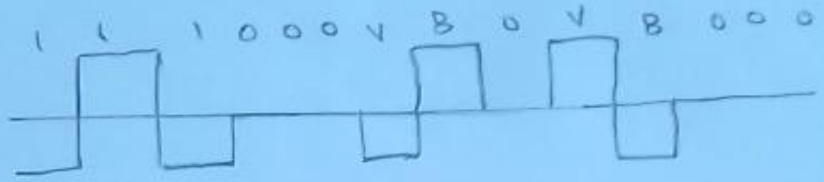
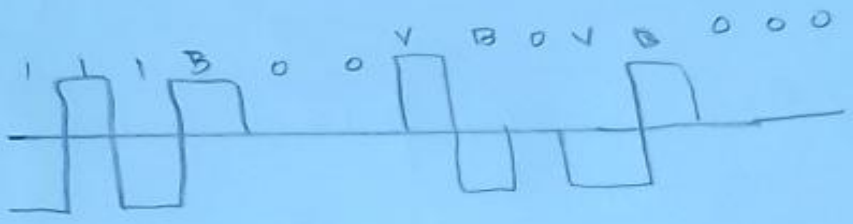
$= \quad SNR = 10^{SNR/10} = 10^{7.5} \simeq 37,622,776$

$10^{7.5} = 31,622,776.$

SNR :→

SNR is a measure of signal strength





Question No3 :→

Answer (L)

A Manchester stream at The given waveform i a Manchester binary data stream.

→ In The manchester encoded binary stream, a transit occures in the middle of each bit Period. The middle transition in The data stream serves as ~~abit~~ a data bit & clock Period.

→ The clock signal transitions do not Always occur at The bit boundary, but there is always a transitio at The Centre of each it.

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Answer (m) :⇒

Both, I & S frames Contain a recieve message N(R), NR Provides a possitive acknowledge for the receipt of I-frames from the other side of the link- This is Incremented for succesive I-frames, modulo 128. Depending on The Number of bits in the sequence Number up to 7 or 127 I-frame may be waiting at any time.

→ Poll is final a single bit with two names - it is called Poll when part a' Command.

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End of the Paper