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Q No (1) Part / A)

Ans:

List of layers of internet

Model:

- (i) Physical
- ii) Data link
- iii) Transport
- iv) Network
- v) Application

The layer in the internet models are the network support layers:

- 1) Network
- 2) Data link
- 3) Physical

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Q(1) Part (B)

Describe three types of transmission impairment?

ANSWER :-

There are three types of transmission impairment

- 1) Attenuation
- 2) Distortion
- 3) Noise.

1) Attenuation:

When a signal travels

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through a medium it loses some of its energy i.e. Attenuation. To overcome/compensate it amplifiers are used to strengthen the signal.

* When a signal simple or composite travel through a medium. It loses some of its energy in overcome resistance medium.

2) Distortion:-

→ Signal changes to its form or shape.

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- Occurs in composite signal
- Delay rates are different
- Difference in phase from original

3. Noise:

Disturbance in the medium due to heat, energy and lighting.

α Noise is another cause of ~~an~~ impairment, several types of noise, such as thermal noise, induced noise, crosstalk and impulse, may corrupt the signal.

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Q(1) Part (c)

Shannon information capacity
has been used
as a ~~measure~~ ~~of~~
measure of the goodness
of electronic communication
channels. It specifies
the maximum
rate at which data
can be transmitted
without error if an
optimal code is used.

Question No (1) Part (d)

Compare and Contrast Flow Control and error Control.

Answer (d)

Flow and Error Control

Comparison between Flow Control and Error Control:

Flow Control:

It refers to a set of procedures used to restrict the amount of data that the sender can send before

→ ^{waiting for acknowledgment}
The data link layer
is having multiples protocol to

Carry out

2) Error Control,

In data Link layer is
based on automatic repeat
request, which is the retransmission
of data.

→ Error Control ensures reliable
data delivery of message by
providing the sender with
some positive or negative
feedback or acknowledgment about
what is happened at the
other of line.

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Question No # (1) Part (g)

to (g) Brief the Protocol for noiseless channels?

(ANS) :

Noiseless Channel:

mission → No need of flow and error control as per the design

⇒ No flow and error control

⇒ Unidirectional (Sender vs receiver)

⇒ The Sender send a sequence of frames without even thinking the about the receiver to send

three frames, three events
occur at the sender site
at three events at the
receiver site

Sender
[A]

Receiver
[A]

Requested → Frames

Arrival

Requested → Frame

Arrival

Requested → Frame

Arrival

— x — x — x = x

Q No # (1) Part (e)

ANS:- Piggybacking :-

→ protocols of noisy and
noisless channel are
Unidirectional.

⇒ The data flow in one
direction and Ack in other
direction

⇒ In many Scenario data
frames flow in both direction
So Control information also
need to flow in both
direction

⇒ x = x = x

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⇒ Piggybacking is the technique used to improve the efficiency of directional protocols:

⇒ When a ~~frame~~ ^{carrying} frame carries data

from A to B, it can also

carry together control information about frame arrival.

= x = x =

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Q3 No # 01) Part (h)

Differential encoding

Encoding in which signal significant condition represent binary data.

Such as "0" and "1" and are represented as changes to succeeding value rather than with the differential encoding.

=> That the differential encoding provides an efficient approach to the lossless compression of images.

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Difference Between NRZ-L
and NRZI ?

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Z-L

Question No 02 Part (a)

There is a problem in a network bad enough to corrupt a packets at the transport layer 2 level than the Sender address is also corrupt. This is because every CRC Checksum words when a packet arrives malformed the checksum just tells the receiver the data is garbage and the packets gets tossed. There is no way from an intermediate router to figure out the sender receiver address at this point.

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Because the entire packet
with both the Sender and
receiver address cannot be
trusted here the packet is
through out. As the another
commenter pointed out. TCP
will try based on the
fact it did not receive
an (ACK) but this is just
like waiting for Bus does
not show up on calling
an uber. you will never
know what happened to the
bus.

ANSWER No (2) Part (J)

The device is sending data
 at the rate of 1 Mbps
 If does it take to

Solution: $(8/100) s = 0.008 s = \boxed{8 \text{ ms}} \rightarrow \text{Ans}$

~~$(8/100) s = 0.008 s$~~

~~$= 8 \text{ ms} \rightarrow \text{Ans}$~~

~~$= \frac{8}{x} = x = x$~~

Ans: 2(K)

$$C = B \times \log_2 (1 + \text{SNR})$$

$$100 \times 10^3 = 4 \times 10^3 \log_2 (1 + \text{SNR})$$

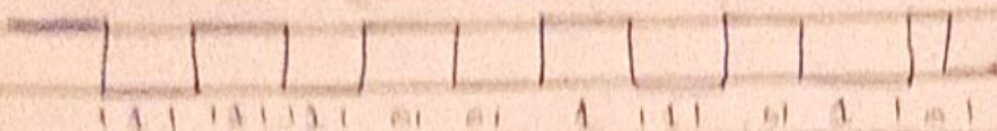
$$\log_2 (1 + \text{SNR}) = 25$$

$$\text{SNR} = 2^{25} - 1 = 33,554,431$$

$$\text{SNR}_{\text{dB}} = 10 \log_{10} (33,554,431) \approx$$

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~~Answer No 37 (L) Part (L)~~



Answer No 37 Part (m)

The primary maintains
a speed logical link
with each secondary

station to another center.

→ Combined the feature
of primary and the

secondary a combined station

may issue both command

and speed

→ The two center configurations

→ Imbalanced configurations consist

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of one memory and one

or many secondary storage.