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Subject

Data Communication
and Networks

Date

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Q: NO: 01

Ans:

Packing

Packing your important goods such as: cloths, mobile, money etc.

Coming together

Coming together / meeting at one place for vehical etc.

Leaving

Leaving for the place that is selected via car, bus or something else.

Hotel booking

To spend the night you need a good.

(2)

resting place for
which you book
a room in Hotels.

Hotel canceling

After you spend
the night it is
time to cancel your
room or Hotel booking.

Arriving

After the trip is
over you will need
to go back to
your home by mean
of bus etc

Dividing

Meaning Separation from
each other and going
to the homes

(3)

Unpacking

Unpacking all the important goods/stuff that you took e.g. clothes, mobile etc.

Q: NO: 02:

Ans:

Advantages.

Single layer to study as all functionality is provided in this layer.

* Gives higher bandwidth as number of layers are reduced.

* It reflect the real life separation of application from the

(4)

Top down word Sections
of the OSI model

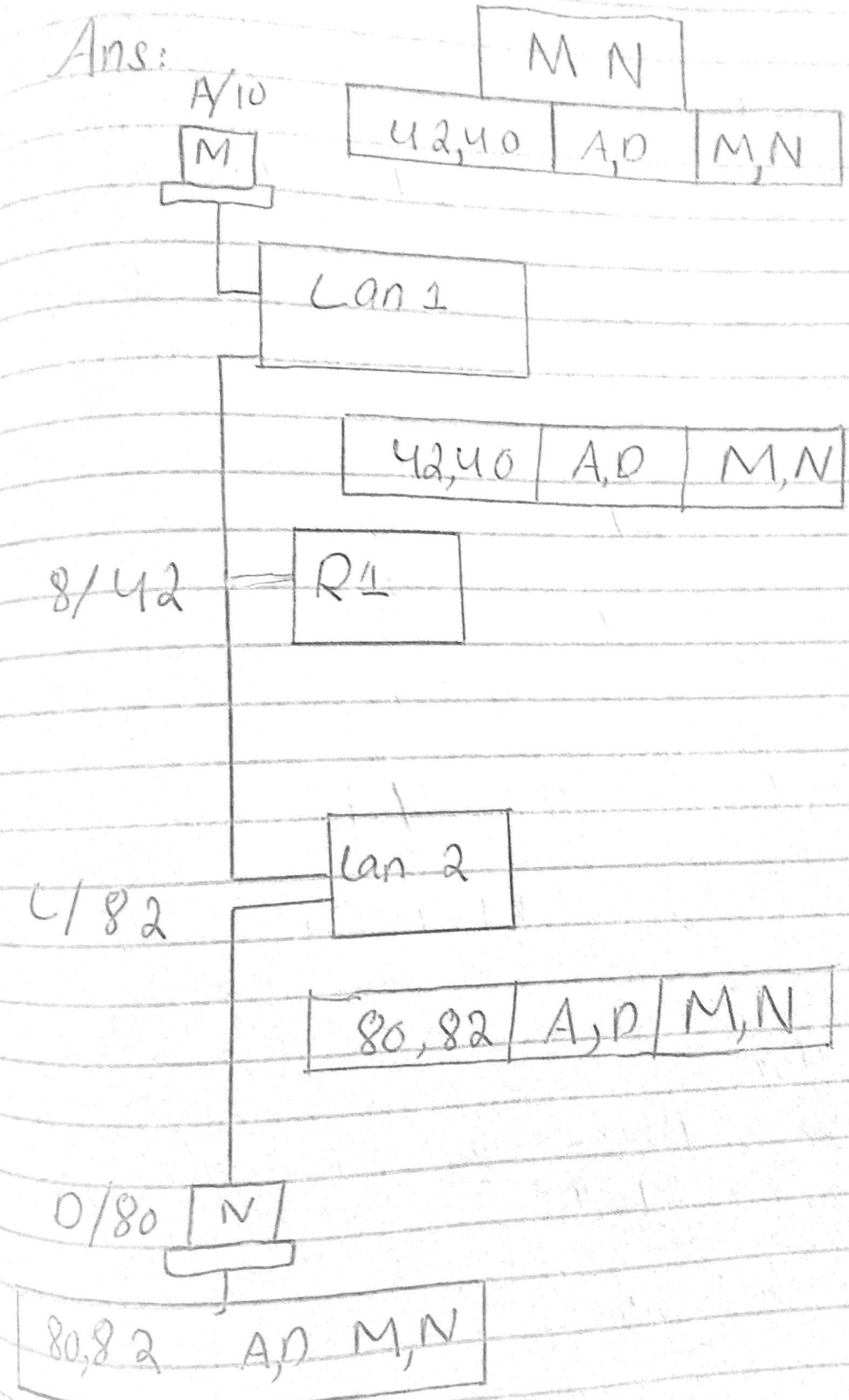
Disadvantages.

- * can make reasoning about architecture of network system less effective.
- * These will be security issues as network and application will open same time
- * It can make troubleshooting hard as multiple errors can occur

(5)

Q: No: 03:

Ans:



(6)

Q: No: 04:

Ans:

As we know.

$$C = \text{Bandwidth} \times \log_2(\text{SNR})$$

(A)

$$Bw = 15 \text{ kHz}$$

$$\text{SNR}_{\text{dB}} = 30$$

Sol

$$\begin{aligned} \text{SNR} &= 10^{(\text{SNR}_{\text{dB}}/10)} \\ &= 10^3 = 1000 \end{aligned}$$

$$C = 15 \times 9.98 = 149.7 \text{ kHz}$$

$$C = 149.7 \text{ kHz}$$

(B)

$$Bw = 100 \text{ kHz}$$

$$\text{SNR}_{\text{dB}} = 2$$

$$\text{SNR} = 10^{2/10} = 1.6$$

$$C = 67.9 \text{ kHz}$$

(7)

(c)

$$Bw = 0.5 \text{ MHz}$$

$$SNR_{db} = 10$$

$$SNR = 10$$

$$C = 0.5 \times \log_2(10)$$

$$C = 1.7 \text{ MHz}$$

Q: NO: 05:

Ans:

$$BR = 4800 \text{ bps}$$

$$\text{log}_2 17 = 8$$

$$\text{bit} = 8$$

As we know

$$BR = Bw \times \text{bits}$$

$$Bw = \frac{BR}{\text{bit}} = \frac{4800}{8}$$

$$Bw = 600 \text{ Hz}$$

(8)

Q: NO: 06:

Ans:

Data Given:

8 bits are passing in
8 ns which mean
1 b at 1 ns.

As we know that

$$1 \text{ Second} = 1000000000 \text{ ns}$$

So

in 1 s we have

$$\text{bit rate} = 8$$

$$\text{Duration} = 8 \text{ ns}$$

So in 1 second

$$\text{bit rate} = 1 \times 10^9 \text{ bps}$$

$$= 1 \text{ Gbps}$$

(9)

Q: NO: 07:

Ans:

We know that

$$C = Bw \times \log_2 (1 + SNR)$$

$$C = 40 \text{ Mbps}$$

$$Bw = 6 \text{ MHz}$$

$$40 \times 10^6 \text{ bps} = 6 \times 10^6 \times$$

$$\log_2 (1 + SNR)$$

$$\log_2 (1 + SNR) = 0.67$$

$$\boxed{SNR = 101.83}$$

(10)

Q: 8

Ans

Amplitude

