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Assignment

Networking (ghassan husna)

Sews

CS:4

Q  
Ans

List of protocol to a visit at resort?  
Following are the lists layers or protocols which you have to follow or required for a visit to a resort.

- ① packing bags
- ② Bringing or calling a cab. or tax.
- ③ Scanning or checking weight of luggage at airport.
- ④ taking tickets or clear your dues
- ⑤ Security checking or body scan
- ⑥ Taking boarding passes
- ⑦ clear your identity or submit the requirements at the airport.
- ⑧ Landing
- ⑨ Took the luggage back
- ⑩ Body or security scanning
- ⑪ Luggage scan
- ⑫ Follow the rules of that particular country which you are visiting.

Explanation:-

p-t-o



- ① Follow the rules of that particular country:  
You have to follow the rules for the sake of stay at any particular country, otherwise they will through you out.
- ② Luggage Scan:  
Without the luggage scan your tour is impossible.
- ③ Body scan or security:-  
You have to follow all security steps in order to reach your destination at resort.
- ④ Take the luggage back:-  
When you reach at the destination airport take your luggage back.
- ⑤ Clearing identity/submitting requirements:  
You have to submit your important documents visa and ticket dues in order to move forward.
- ⑥ Taking boarding passes:-  
Before taking off boarding pass is very important to sit in airplane so just check properly.
- ⑦ Bringing cab:  
Bring or call a taxi in order to reach to airport.
- ⑧ Packing bags: Just pack necessary stuff for your tour to resort.



# Advantages or disadvantages?

## Advantages:

- 1) + Easy to access all functions in one layer.
- 2) + Bandwidth for more layers were reserved through this one layer that will reduced to one.
- 3) + It reflects the real life separation of application from the top-downward section of the OSI model.
- 4) + In TCP/IP mode there is no separate session or presentation layer both are combine to application layer.
- 5) + Application layer can also perform the functions of Mail services File transfer etc and functions of session layers which are maintain the interaction between communicating systems, or synchronization, or the functions of presentation layer are to handle the syntax and semantic of info exchanged b/w 2 systems, and data translation therefore they are combined, when there are less layers communication will be faster.



② Disadvantages:-

\* When there is a error in communication, then it is very difficult to know that where the error is due to several layers.

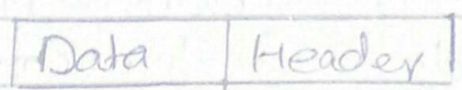
\* if application layer open at a single point so there will be security issues as network issues.

\* Can make reasoning about the architecture of network system less effective.

Q3

Computer A:

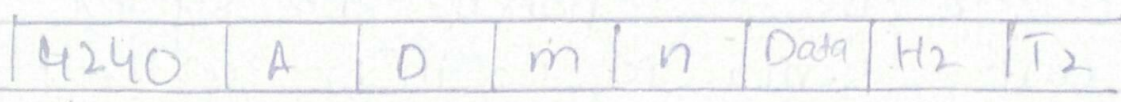
contents of segment at transport layer



contents of packet at network layer



contents of frame at data link layer.



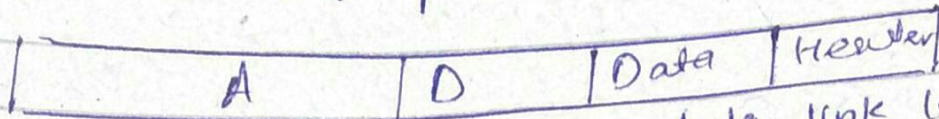
Computer D:

contents of segment at transport layer.

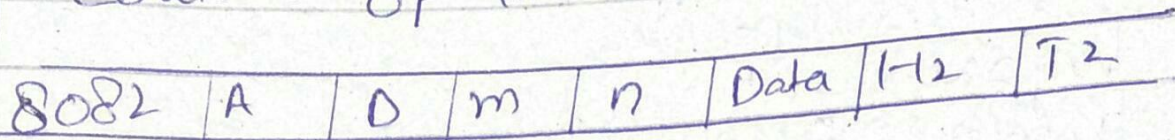




1  
contents of packet at network layer



contents of frame at data link layer



Q Theoretical capacity?

Ans

We know that

$$C = B \times (\text{SNR}_{\text{dB}}) / 3$$

1) a) Bandwidth = 15 kHz      SNR dB = 30  
 $C = (15 \text{ kHz} \times 30) / 3 = 150 \text{ kbps}$

2) b) Bandwidth = 100 kHz      SNR dB = 2  
 $C = (100 \text{ kHz} \times 2) / 3 = 66.67 \text{ kbps}$

3) c) Bandwidth = 0.5 MHz      SNR dB = 10  
 $C = (0.5 \text{ MHz} \times 2) / 3 = 333.33 \text{ kbps}$

Q # 5

$$B_{\text{min}} = N/2 \times \log_2 L$$

$$4800 / 1000 \text{ bps} = 4.8 \text{ kbps}$$



$$B = 4080/2 \times \log_2 8 = 35590.42 \text{ Hz}$$

OR 2nd method

$$C = 2B \times \log_2 M$$

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

$$\log_2 M = 8$$

$$4800 = 2B \times (8)$$

$$4800 = 16B$$

$$B = 4800/16$$

$$B = 300 \text{ Hz}$$

Q6

Q # 6

$$\text{No of bits} = 8 \text{ bps}$$

$$\text{Bit duration} = 8 \text{ ns}$$

$$\text{Bit rate} = 8/8$$

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

$$= 1 \text{ Gbps} \quad 1 \text{ Gbps}$$

Q7

Q # 7

$$C = 40 \text{ Mbps}, B = 6 \text{ MHz}$$

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

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

$$\log_2 (1 + \text{SNR}) = 40/6$$

$$\log_2 (1 + \text{SNR}) = 6.67$$

$$2^{6.67} = 1 + \text{SNR}$$

$$101.8 = 1 + \text{SNR}$$

$$\text{SNR} = 101.8 - 1 = 100.8 \text{ levels.}$$

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