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14524

BS (SE) Section A

4th Semester

Computer Communication and Networks

Q2 (a)

Answer :-

OSI model is conceptual model between sender and receiver which is very useful for users, it serves as a solid foundation for the Internet including all of the security, privacy and performance related challenges -

* In case of encountering in order from top to bottom the communication between sender and receiver will quit not possible and there will be no proper way to understand the whole process -

* every body will be confused from where to start and

where to end so ISO introduces the OSI model.

Question 1 (b)

So Answer :-

Advantages :-

- * There will only be a single layer to study, because all of ~~the~~ functionalities will be provided at this layer.
- * We will have higher bandwidth as because the layers has been reduced.
- * It will reflect the separation of application from TCP-downward sections of the OSI model.
- * Simplicity will also be an advantage.

Disadvantages :-

- * It can make the architecture of the system less-effective.
- * As the network and Application will open at a single layer there will be a security issue which will expose or whole network.

Question 2 (a)

Answer :-

PHYSICAL LAYER :-

It provides the hardware means of sending and receiving data on a carrier, including defining cables etc. It conveys the bitstreams.

DATA LINK LAYER :-

Data packets are encoded and decoded into bits in this layer. Handles errors, flow control and frame synchronization.

Network LAYER :-

It provides switching and routing technologies, create logical paths for transmitting data from node to node. Also packet addressing, error handling and sequencing takes place.

Transport Layer :-

This layer provides transfer of data between end systems or hosts. It also responsible for end-end recovery flow control means it ensures complete data transfer.

Session layer:-

It manages connections between applications. This layer coordinates conversations, dialogues between applications to each end.

presentation layer:-

This formats and encrypts data to be sent across network. It works to transfer data into the form that the application layer can accept. It is sometimes called syntax layer.

Application layer:-

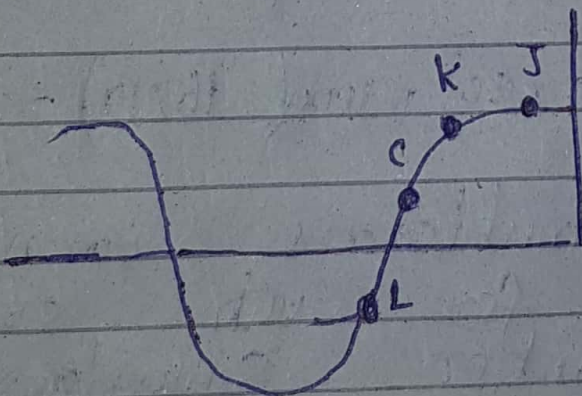
This layer support Application and end user processes. communication node is identified, service identified. privacy is considered. This layer provides application services for file transfer.

Question 2 (b)

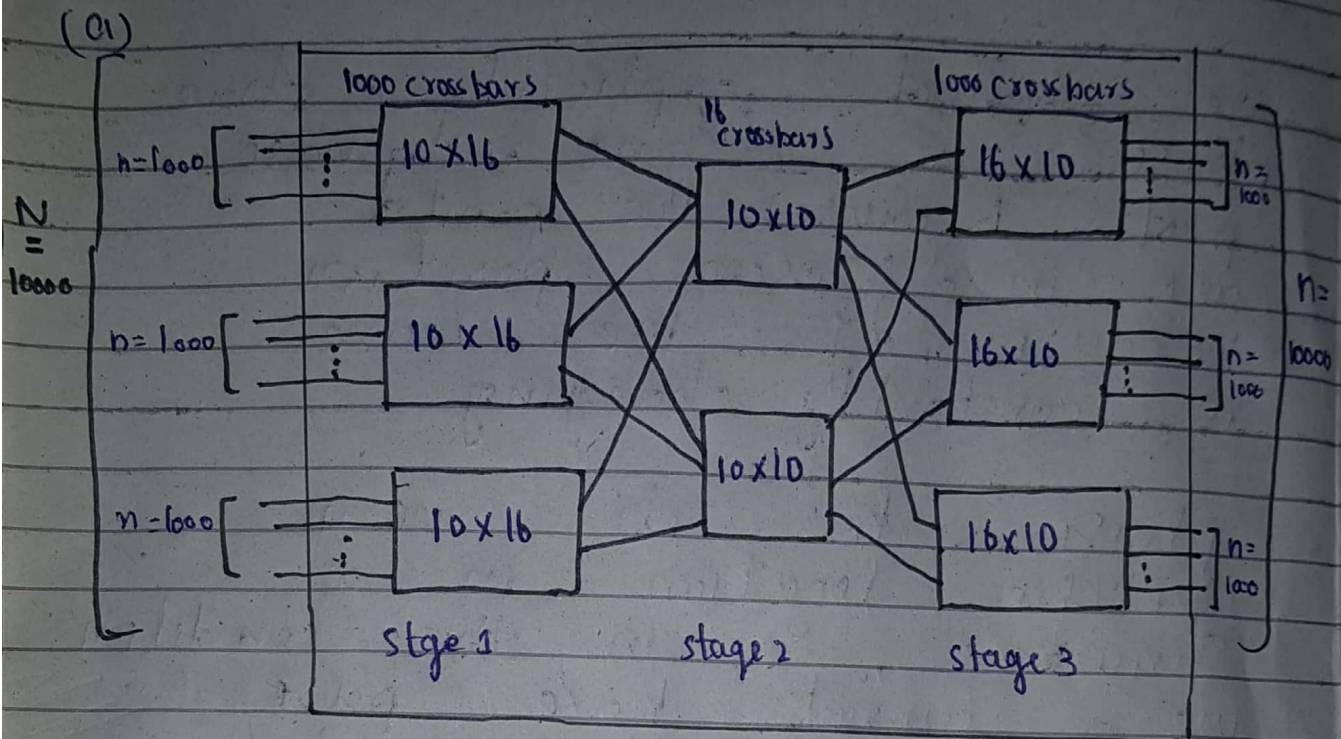
Answer is:

We cannot explicitly show phase in a time — phase plot because the points are in different position because of the wave is constantly changing —

phase has its own specific location in a sin wave, so in this condition we cannot have phase of sin-wave in a time phase



Question 3 (b)



(b) total number of cross points are -

$$1000(10 \times 16) + 16(10 \times 10) + 1000(16 \times 10) = 321,600$$

(c) only 16 simultaneous connections are possible for each crossbar. So the total number of simultaneous connections $16 \times 1000 = 16000$ -

(d) if we use one crossbar (10000×10000) all inputs lines can have a connection at the same time, which means 10000 simultaneous connections

(e) The blocking factor is $16000 / 10000$ -