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OS Quiz 8

Q1) Why non persistant CSMA protocol gives better...

Sol> In 1persistant CSMA, when 2 stations are ready, collisions occurs if they are not so important. Whereas in Non persistant CSMA, the chances of collision are lesser,. Therefor the rate of collisions is much reduced as each station waits for a random amount of time before attempting retransmission. And hence the probability that multiple stations will wait for the same amount of time is extremely low.

Non persistent CSMA has better utilization than 1persistent CSMA because in the all the stations are constantly checked for channel simultaneously.

Q2) Suppose there is a change in the algorithm for a protocol...

Sol> A change in the algorithm at layer k causes no change in layer k-1 and k+1 as ~~they are independent of layer k~~ the ~~operations~~ services and interfaces provided by the layer k do not change.

But if there is a change in the set of operations at layer k, then there is no change for layer k-1 (as services of higher layers are not used by the lower layers), whereas, the services at layer k+1 are affected and they have to be implemented again.

Q3) Why transport layer is called end-to-end layer?

Sol) The transport layer is called a end-to-end layer as it provides point-to-point connection instead of hop-to-hop connection between the source and its destination to deliver the messages. It is reliable.

At the sender side, these protocols break the messages of application layer into segments and pass them to the network layer. Whereas, at the receiving end these segments are reassembled and passed to the application layer.

Here one computer talks with another computer.

Q4) What are the objectives of computer networking...

Sol> In computer networking thousands of computers are connected through communication channels and the objective is to develop primitives to develop applications to improve reliability, throughput, waiting time, response time and deadlines.

In operating systems, the objective was to develop system calls to develop applications for hardware while improving throughput, response time, deadlines and waiting times.

In networking, reliability is also a major issue as all the data may not be delivered.

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8 3) Explain the difference between connectionless and connection-oriented service? Give 2 examples for each.

Sol> Connection oriented must be setup for ongoing and use and torn away after the usage, eg> movie download, voice over IP

In connectionless service, messages are sequence of pages handled separately. Eg> text messaging, with lesser reliability. electronic junk mail, Querying phone remote database

Connection oriented is like telephone system. It's reliable, requires a bandwidth of high range, and hence congestion is not possible. It is preferred by long and steady communication and is like a handshake method, requiring a connection establishment between the sender and receiver and also a connection termination.

Connection less service is more like a postal system. As it does not require connection establishment/termination. But this is less reliable as all the packets do not follow the same path from sender to receiver. Here congestion is possible and it requires a bandwidth of low range.
