REVIEW QUESTIONS

Q-1: List the layers of the internet models?

Ans: Internet Models have following Layers:

1. Physical Layer
2. Data Link Layer
3. Network Layer
4. Transport Layer
5. Application Layer

Q-2: Which layer in the internet model are the network support layer?

Ans: Following are the network support layers:

1. Physical Layer
2. Data Link Layer
3. Network Layer

Q-3: Which layer in the internet model is the user support layer?

Ans: Application layer is actually a user support layer in the internet model.

Q-4: What is the difference between network layer delivery and the transport layer delivery?

Ans: Transport layer is responsible for process (source) - to - process (destination) delivery of entire message, whereas network layer oversees host (source) - to - host (destination) delivery of individual packets across multiple links.

Q-5: What is a peer-to-peer Process?

Ans: The processes at each machine that communicate at a given layer. Physical Layer has a direct link between 2 devices, while other layers have to pass the information down to the lower layers on the sender device by adding extra bits at

each layer, and the receiver device unwraps the message at each layer moving upwards till it finally reaches the corresponding communicating layer.

Q-6: How does information gets passed from one layer to the next in internet model?

Ans: At the physical layer, communication is direct between devices. At the higher layers, however, communication must move down through the layers on sending device, over to receiving device, and then back up through the layers. Each layer in the sending device adds its own information to the message it receives from the layer just above it and passes the whole package to the layer just below it. At layer I the entire package is converted to a form that can be transmitted to the receiving device. At the receiving machine, the message is unwrapped layer by layer, with each process receiving and removing the data meant for it.

Q-7: What are headers and trailers, and how do they get added and removed?

Ans: Additional information wrapped with the data unit at each layer. Usually, a trailer is added at data link layer. Header and trailer contain information such as source/destination address, control bits, error correction bits etc. These extra bits are added at the layer at sender's side, and removed at the corresponding layer at receiver's side.

Q-8: What are the concerns of physical layer in the internet model?

Ans: The physical layer is concerned with actual transfer of data bits across a transmission medium between 2 devices. The physical layer coordinates the functions required to carry a bit stream over a physical medium. It deals with the mechanical and electrical specifications of the interface and transmission medium. It also defines the procedures and functions that physical devices and interfaces have to perform for transmission to occur. Physical characteristics of interfaces and medium, Representation of bits, data rate, synchronization of bits, line configuration, physical topology, transmission mode.

Q-9: What are the responsibilities of data link layer in the internet model?

Ans: The main responsibility of data link layer is to Transforms physical layer to reliable link, framing and physical addressing, flow, error and access control.

Q-10: What are the responsibilities of network layer in the internet model?

Ans: The major responsibility of network layer in internet model is Source to destination delivery of packet across multiple links, logical addressing, routing.

Q-11: What are the responsibilities of transport layer in the internet model?

Ans: The major responsibility of network layer in internet model is the Process - to - process delivery of entire message, service point addressing, segmentation and reassembly, connection, flow and error control.

Q-12: What is the difference between a port address, a logical address and physical address?

Ans: Port address - transport layer, logical address - network layer, physical address - data link and physical layer. Port address is the address of a process on a host. A logical address (IP) in the Internet is currently a 32-bit address that can uniquely define a host connected to the Internet. Physical address is address of node as defined by its LAN or WAN.

Q-13: Name some services provided by the application layer in the internet model?

Ans: The application layer enables the user, whether human or software, to access the network. It provides user interfaces and support for services such as electronic mail, remote file access and transfer, shared database management, and other types of distributed information services. Network virtual terminal, file transfer, access and management, mail services, directory services.

Q-14: How do the layers of the internet model correlate the layers of the OSI model?

Ans: The TCPIIP protocol suite was developed prior to the OSI model. Therefore, the layers in the TCP/IP protocol suite do not exactly match those in the OSI model. The original TCP/IP protocol suite was defined as having four layers: host-to-network, internet, transport, and application. However, when TCP/IP is compared to OSI, we can say that the host-to-network layer is equivalent to the combination of the physical and data link layers. The internet layer is equivalent to the network layer, and the application layer is roughly doing the job of the session, presentation, and application layers with the transport layer in TCP/IP taking care of part of the duties of the session layer. So in this book, we assume that the TCP/IP protocol suite is made of five layers: physical, data link, network, transport, and application. The first four layers provide physical standards, network interfaces, internetworking, and transport functions that correspond to the first four layers of the OSI model. The three topmost layers in the OSI model, however, are represented in TCP/IP by a single layer called the application layer.