

IQRA NATIONAL UNIVERSITY

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Program : BS Telecom.

(Q1)

(a) Differentiate between IP Telephony and VOIP.

(Ans) Difference between IP and VOIP.

Although both the terms are used interchangeably but there are slight distinction.

(i) In a VOIP network traditional analog or digital devices convert into an IP networks usually through sort of gateway.

(ii) An IP Telephony environment contains end points that natively communicate using IP e.g computers.

~~eg~~ ~~computers~~ corporate intranets and the backbone networks of carriers.

(Q1)

(B) Differentiate between connectionless and connection oriented services?

(Ans) Connectionless vs Connection Oriented Service

\* Connection Oriented Service

→ These services are based on connection-oriented transport i.e TCP.

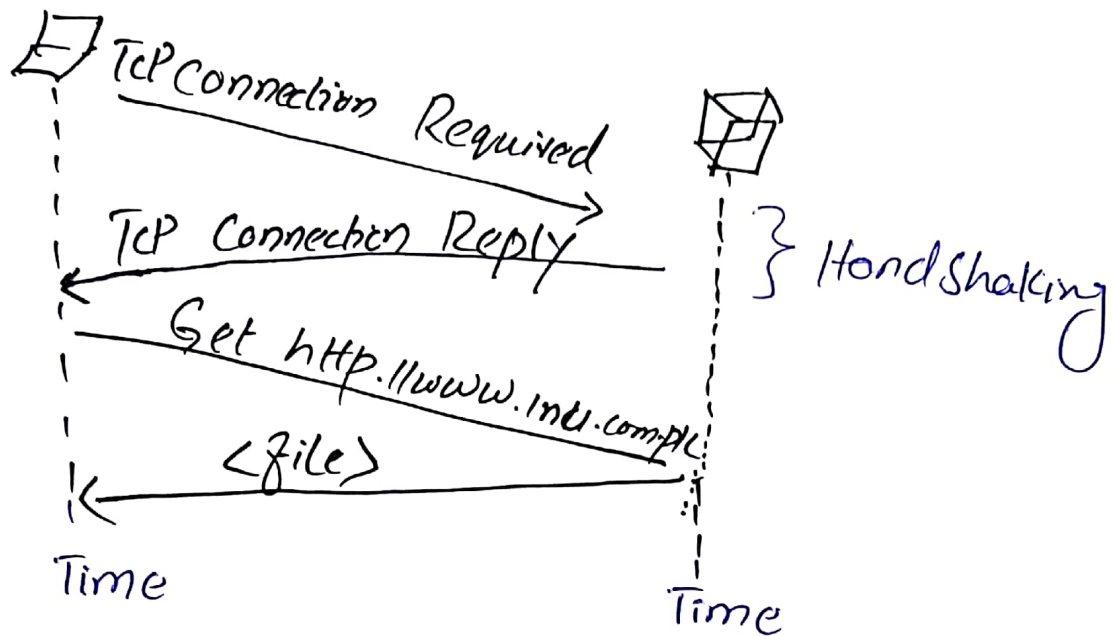
→ How the client and server programs send with actual data transferred, which is known as handshaking.

→ Handshaking procedure alerts the clients and server to be prepared for transmission of data packets.

→ As soon as the handshaking procedure is finished, a connection is established between two systems.

→ TCP is said to be connection-oriented because of handshake process.

(Pg 3)  
→ TCP is defined as RFC 793, "handshake"  
RFC 1122, RFC 1323, RFC 2018, RFC 2581



### TCP connection oriented transport.

→ Connection-oriented transfer is "reliable data transfer" because an application can rely on the connection to deliver all of its data without errors and in proper order.

→ Reliability in Internet is achieved by acknowledgments and retransmission.

## \* Connectionless Service:

- Here there is no Handshaking  
so when one side ~~it simply~~ wants to transmit packets to other side it simply sends the packets.
- Due to non-handshaking prior to packet transmission, data can be delivered sooner.
- But there is no reliable data transfer, so a source never knows which packets are lost.
- There is no flow control or congestion control.
- The internet connectionless service is called User data gram protocol (UDP)
- UDP is defined in RFC 768.
- TCP is mostly used by applications like Telnet (remote login), SMTP (e-mail), FTP (File transfer) and HTTP (for the web)
- UDP is used by many applications also like many of the emerging multimedia applications such as Internet Phone and video conferencing.

(Q2)

How would you ~~be~~ explaining the following features of VOIP?

(1) Cost Saving:-

(1) PSTN uses TDM

that dedicates 64Kbps of bandwidth per voice channel

(2) This means that when there is no voice traffic then the bandwidth will be unused.

(3) But VOIP combines multiple 64Kbps channel into high speed links for transport across a network.

(4) which results in a more efficient use of bandwidth, there by reducing bandwidth requirements

(ii) Unified Messaging:-

Unified messaging provides a single interface for messages that had been delivered over over a variety of medium.

For example:- User can read their email, hear their voice mail and view for messages by accessing a single box.

(iii) Security:-

Mechanisms in an IP network ensure that IP conversations are secure.

Encryption of sensitive signaling and message bodies protect packet in case of unauthorized packet interception.

(iv)

Flexibility:-

⇒ The organization providing VoIP can be more flexible in types of applications and services they provide to customers and users.

⇒ Service providers can easily segment customers.

(v)

Long Distance Toll Bypass:-

Long distance toll bypass is an attractive solution for organizations that place a significant number of calls between sites that are traditionally charged long distance.



Q3 Fill in the blanks:

- (a) Telephone network use circuit switching
- (b) POTS stands for Plain old Telephone system
- (c) The local loop used for voice has a bandwidth of 4000 Hz (4 kHz)
- (d) The toll office in the telephone network is called Tandem office
- (e) IP Telephony enable to carry voice traffic.
- (f) In VOIP digital signals travel over an IP network.
- (g) Least-cast Routing is an example of advanced call routing
- (h) Unified Messaging provides a single interface for different types of messages.
- (i) Call quality in VOIP is affected by quality and performance.
- (j) VOIP Services are usually charged for, cast by traditional.  
additional