COMPUTER ENGINEERING DEPARTMENT

ASSIGNMENT NO-06

SUB: Computer Networks

COURSE: T.E. **Year: 2020-2021** **Semester: V**

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Batch: B3 **Class:** TE COMPS B

Questions to answers:

→ Write about working and need for -

A. DNS

B. HTTP

C. SMTP

D. TELNET

E. FTP

F. DHCP

Q.1. DNS

Ans:

Working:

- The process of DNS involves converting a hostname into a computer friendly IP address.
- An IP address is given to each device on the internet and that address is necessary to find the appropriate internet device. (like a street address is used to find a particular home).
- When a user wants to load a webpage, a translation must occur between what a user types into their web browser and machine friendly address necessary to locate the webpage.

Need:

- The need of DNS is that it would be impossible to view a website on the internet without DNS.
- Every single website has an IP address which displays its accurate location on the internet and the DNS is the medium to that.

Q.2 HTTP :

Ans :

Working :

- HTTP is an application layer protocol built on top of TCP that uses a client - server communication model.
- HTTP clients and servers communicate through request and response messages.
- The browser initiates communication with an HTTP servers by initiating a TCP connection to the server.
- Web browsing sessions use server port 80 by default, although other ports such as 8080 are sometimes used instead.
- After a session is established, you trigger the sending and receiving of HTTP messages by visiting the web page.

Need :

- Without HTTPs any data passed is insecure.
- This is especially important for sites where sensitive data is passed across the connection, websites where we login using our credentials and other details.
- HTTP is a protocol for distributed, collaborative, hypermedia information system.

Q.3. SMTP (Simple Mail Transfer Protocol)

Ans:

Working:

- The user composes an electronic mail using mail user agent (MUA). It is a program which is used to send and receive mail.
- The email has two parts. The body that contains the main message/ files and the header that includes information such as sender and receipient address.
- The mail client that sends the email to the SMTP server by using smtp on TCP port 25.
- In the email address, if the domain name as the recciplent's email address is different from the sender's domain name then MSA will send the mail transfer agent (MTA). To relay the email, the MTA will find the target domain. It checks the MX record from DNS to obtain the target admin. The mx record contains the domain name and IP address of the recipients domain. Once the record is located, the MTA connects to exchange server to relay the message. Once the message is received, the exchange server delivers to the incoming server which states the email which can be retrieved by the user with the help of MUA.

Need :

- Without an SMTP server, you cannot send your email to its destination. When you click the "send" button from your email client, the email message gets converted automatically into a string of codes and are transferred to your SMTP servers.
- If there is no outbound SMTP server, then the email cannot be sent to the recipient.

Q.4. Telnet

Ans:

Working:

- It makes available users by an interactive and bidirectional text oriented message system exploit an effective terminal connection which is much more than 8 bytes.
- Users data is used in the band long with telnet control information above the TCP. It helps to achieve some functions in a remote manner.
- The user joins the server beside using the TCP protocol, no that means like the other side connections is also established using the telnet hostname.

Need:

- If you don't have a telnet client software on your computer, you cannot make a connection to a telnet server and so you cannot remotely host over a TCP/IP network such as using the internet.

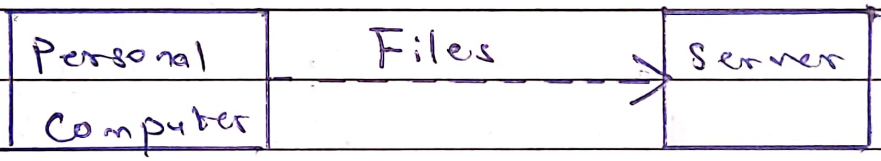
Q.5. FTP

Ans:

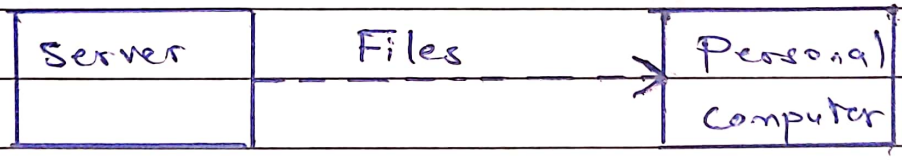
Working:

- FTP servers are the solutions used to facilitate file transfer across the internet.
- If you send files using FTP, files are either uploaded or download to the FTP servers.
- When you're uploading files, the files are transferred from a personal computer to the server.
- The files are then transferred to your personal computer. TCP/IP is used to transfer the files via FTP.

Uploading:



Downloading:



Need:

- It is used for transferring files between computers on a network and exchanging files or accessing online software archives.
- FTP is also used to install software to a web servers or files copied upto a web browser to make them available on the website.

Q6 DHCP (Dynamic Host Configuration Protocol)

Ans:

Working:

- Host connecting to network (cable or wireless) sends DHCP discover message ~~hits~~ all hosts in layer 2 segment.
- Frame with this DISCOVER message hits the DHCP server.
- After the DHCP server receives discover message it suggest the IP addressing offering to the client host by unicast.
- This offer message contains propose IP address for client, subnet mask to identify the subnet space, IP of the default gateway for subnet and IP of DNS server for translations.
- Now that the client receives the offer it requests the information officially sending REQUEST message to the server by unicast.
- The server sends ACKNOWLEDGEMENT message confirming the DHCP lease to the client. Now the client is allowed to use New IP settings.

Need:

- The primary reason DHCP is needed is to simplify the management of IP addresses on networks.
- No two hosts can have the same IP address, and configuring them manually will likely to load the errors.