**CSE421**

**Lab 02 Home Task**

**Fall 2022**

**Write answers to the following questions.**

1. How would a proxy server check to see if it’s data is up to date with the most updated data in the Origin Server?

Ans: Use GET condition to check for any update in Origin Server

1. The HTTP protocol is implemented in the Physical layer. Is this statement true or false?

Ans: False. The HTTP protocol is implemented in the Application layer.

1. Can you receive mail using SMTP, why or why not?

Ans: No. SMTP is a push protocol. With SMTP we can send email only but can’t receive mail using SMTP.

1. Briefly explain how SMTP and POP3 protocol works using a scenario.

Ans: When the sender sends any email, it goes to the sender's side email server using SMTP. Again, using SMTP the email goes to the receiver's side email server. Finally, the receiver uses the POP3 protocol to receive the email from the receiver side email server.

1. Why does root DNS servers maintain a hierarchical structure rather than a centralized structure?

Ans: Root DNS servers maintain a hierarchical structure because the traffic is distributed and less pressure goes on the root DNS server. Otherwise, all the traffic would be on the Root DNS server and there is a high chance it fails to load such traffic. Thus the whole system gets down.

1. Suppose, you have a quiz which will take place at bux but your local DNS server does not know the IP address of “bux.bracu.ac.bd”. Will you be able to attend your quiz? Please, provide a brief explanation.

Ans: No because when I want to visit the website, it goes to Local DNS Server and looks for its IP address. If the DNS server doesn't have it then it can’t access the website as it’s not in this network.

1. Suppose, you recently changed your ISP and the new ISP forgot to set the DNS server’s IP address when configuring your internet connection. Can you now browse the internet properly?

Ans: No, I will not be able to browse the internet.

1. What is the size of an ARP request or reply packet (in bytes)?

Ans: The size of an ARP request or reply packet is 28 bytes.

1. What happens to an ARP request packet when it is received by a host that does not match the target IP address of the request?

Ans: If the IP address of the request does not match with the host, it will simply drop the

packet

1. What is the value of the 'operation' field in an ARP reply packet?

Ans: 0x0002

1. What flags are used during a TCP connection establishment and TCP connection termination process.

Ans: Flags for TCP connection establishment is SYN and TCP connection termination is FIN flag

1. A web server sends a TCP packet to a client with sequence number=0 and acknowledgement number =1. Which stage of the 3 way handshake is this and what does the sequence and acknowledgement number mean?

Ans: It's the 2nd stage of TCP 3 way handshake. The sequence = 0 and acknowledgement = 1 number mean that the web server is acknowledging the request from the PC.

1. In an outbound PDU packet, what does source port: 80 and destination port: 1027 means?

Ans: source port: 80 means the web server where request is sent and destination port: 1027 means the PC from where request was sent.