CSE421
Lab 02 Home Task
Spring 2022

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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?

   -->By checking the last modified factor.

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

   --> False

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

   -->No, SMTP is used for sending email.

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

   --> If user1 wants to send email to user2 , he will send email to email server using SMTP protocol. User2 will see that email from email server using POP3 protocol.

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

   -->If root DNS server maintain a centralized structure then any kind of fault in the root DNS server will result broken network.

6. 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.

   --> Yes, since there are multiple DNS servers, this request will be redirected to a another DNS server to get the IP address.

7. 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?

   -->No

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

   --> 28 bytes

9. 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?

   --> That request will be dropped by the host then.

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

    -->0x0002

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

    -->SYN for connection establishment.
       FIN for connection termination.

12. 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?
    -->2nd stage. The sequence number is the byte number of the first byte of data sent by the TCP client, and
    acknowledgment number is the sequence number of the next byte server expects to have.
13. In an outbound PDU packet, what does source port: 80 and destination port: 1027

    means?

    --> It means data is coming from a web server to a user PC.