CSE421

Lab-02

Homework Questions on

*HTTP, ARP, TCP, Email and DNS*

1. What is the main difference between ARP and DNS requests?

2. By checking which section of a TCP packet one can identify if it is a TCP packet for opening the connection or closing the connection? Explain how?

3. How can you resolve an ARP IP Address to an Ethernet MAC address?

4. How does a router help the communication and interchange of information between a pc from a network with a web server from a different network?

5. Suppose, you want to access facebook.com and your PC does not know its local DNS server. Which protocol between ARP and DNS will be executed first and why?

6. For the same scenario mentioned above, what will be the destination/target IP address?

7. After establishing a connection with the local DNS server PC1 now knows the IP and MAC addresses of PC2. Suppose PC1 [IP Address: 192.168.2.1, MAC Address: 0010.1191.A946] is sending an ARP packet to PC2 [IP Address: 192.168.2.2, MAC Address: 0110.1290.AD23]. What will be written in the target MAC address before the packet reaches PC2.

8. How can you tell the difference between an ARP request packet and an ARP reply packet as the Ethernet type field on both packets is identical?

9. What is HTTP response and in which layer of OSI model does HTTP work?

10. If the flag section of the TCP packet contains 00010000, what type of TCP packet will that be?

11. How many TCP packets does the Client PC send to the server in the process of an HTTP request?

12. Why does email need both SMTP and POP3 protocols? And how do they work together?

13. In a TCP packet coming back from the server, the sequence number is written as 1 and the acknowledgement is written as 1. What do you understand from this scenario? Explain.

14. Why is it necessary to map an IP address to a MAC address? Why can't the Ip address be used to represent the MAC address?

15. In an outbound PDU packet, what does source port: 1025 and destination port: 80 means?

16. How does your laptop know it’s local DNS server?