2021--2022

TD-2

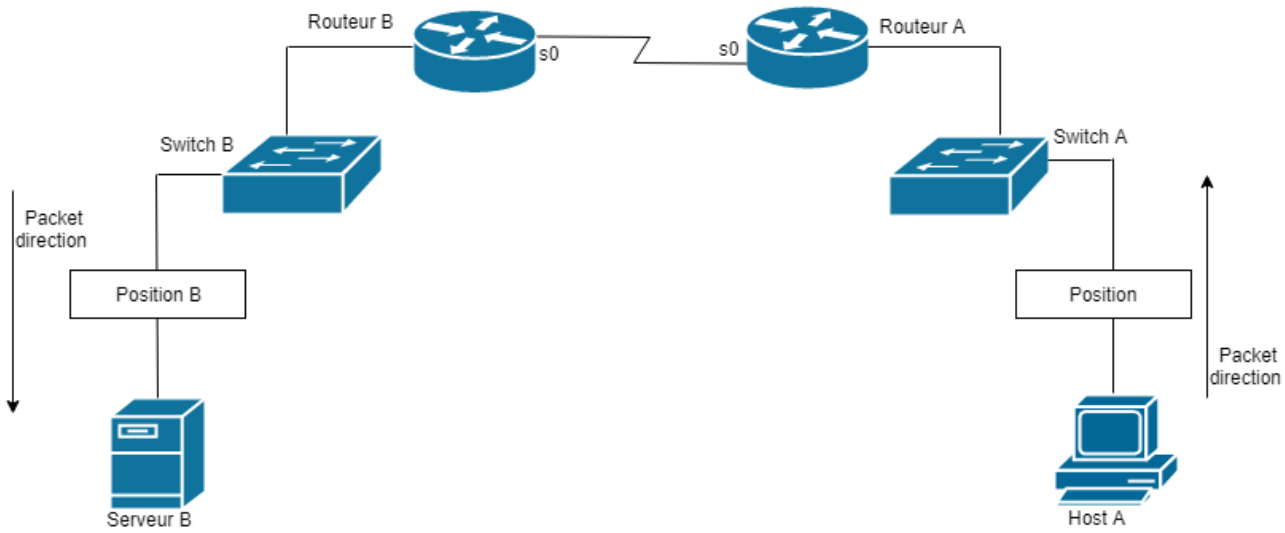
1- What is a 1-PDU ?
   a. a bit
   b. a datagram
   c. a frame
   d. a message
2- What is a 2-PDU ?
   a. a bit
   b. a datagram
   c. a frame
   d. a message
3- What is a 3-PDU ? (select all that apply)
   a. a datagram
   b. a frame
   c. a message
   d. a packet
4- What is a 4-PDU ? (select all that apply)
   a. a frame
   b. a message
   c. a packet
   d. a segment
5- On which protocol does Ethernet rely ?
   a. IP
   b. TCP
   c. UDP
   d. None of the above
6- On which protocol does HTTP rely ?
   a. Ethernet
   b. IP
   c. TCP
   d. UDP
7- On which protocol does IP rely ?
   a. Ethernet
   b. HTTP
   c. TCP
   d. UDP
8- On which protocol does TCP rely ?
   a. Ethernet
   b. HTTP
   c. IP
   d. UDP
9- On which protocol does UDP rely ?
   a. Ethernet
   b. HTTP
   c. IP
   d. TCP

10- What are the characteristics of TCP ? (select all that apply)
    a. connectionless
    b. connection-oriented
    c. reliable
    d. unreliable
11- What are the characteristics of UDP ? (select all that apply)
    a. connectionless
    b. connection-oriented
    c. reliable
    d. unreliable
12- When data is encapsulated, which is the correct order ?
    a. data, frame, packet, segment, bit
    b. segment, data, packet, frame, bit
    c. data, segment, packet, frame, bit
    d. data, segment, frame, packet, bit
13- What is the first address in an Ethernet header ?
    a. destination IP address
    b. destination MAC address
    c. source IP address
    d. source MAC address
14- What is the second address in an Ethernet header ?
    a. destination IP address
    b. destination MAC address
    c. source IP address
    d. source MAC address
15- What is the first address in an IP header ?
    a. destination IP address
    b. destination MAC address
    c. source IP address
    d. source MAC address
16- What is the second address in an IP header ?
    a. destination IP address
    b. destination MAC address
    c. source IP address
    d. source MAC address
17- Which of the following are found in a TCP header ? (select all that apply)
    a. Destination port
    b. Length
    c. Timestamp
    d. Source port
18- Which of the following are found in a UDP header ? (select all that apply)
    a. Destination port
    b. Length
    c. Timestamp
    d. Source port
19- What is an Ethernet address ?
    a. a logical address
    b. a physical address
20- What is an IP address ?
    a. a logical address
    b. a physical address

Part II : A simple network

Let us consider the following network diagram.

Figure 1. Network Diagram



21- Refer to Figure 1. Host A wants to communicate with Server B. What source MAC address will be in the header of the packet at position A (as notated in Figure 1) ?
   a. The MAC address of Host A
   b. The MAC address of Router A
   c. The MAC address of Router B
   d. The MAC address of Server B

22- Refer to Figure 1. Host A wants to communicate with Server B. What destination MAC address will be in the header of the packet at position A (as notated in Figure 1) ?
   a. The MAC address of Host A
   b. The MAC address of Router A
   c. The MAC address of Router B
   d. The MAC address of Server B

23- Refer to Figure 1. Host A wants to communicate with Server B. What source MAC address will be in the header of the packet at position B (as notated in Figure 1) ?
   a. The MAC address of Host A
   b. The MAC address of Router A
   c. The MAC address of Router B
   d. The MAC address of Server B

24- Refer to Figure 1. Host A wants to communicate with Server B. What destination MAC address will be in the header of the packet at position B (as notated in Figure 1) ?
   a. The MAC address of Host A
   b. The MAC address of Router A
   c. The MAC address of Router B
   d. The MAC address of Server B

25- Refer to Figure 1. Host A wants to communicate with Server B. What source IP address will be in the header of the packet at position A (as notated in Figure 1) ?
   a. The IP address of Host A
   b. The IP address of Router A
   c. The IP address of Router B
   d. The IP address of Server B

26- Refer to Figure 1. Host A wants to communicate with Server B. What destination IP address will be in the header of the packet at position A (as notated in Figure 1) ?
   a. The IP address of Host A
   b. The IP address of Router A
   c. The IP address of Router B
   d. The IP address of Server B

27- Refer to Figure 1. Host A wants to communicate with Server B. What source IP address will be in the header of the packet at position B (as notated in Figure 1) ?
   a. The IP address of Host A
   b. The IP address of Router A
   c. The IP address of Router B
   d. The IP address of Server B

28- Refer to Figure 1. Host A wants to communicate with Server B. What destination IP address will be in the header of the packet at position B (as notated in Figure 1) ?
   a. The IP address of Host A
   b. The IP address of Router A
   c. The IP address of Router B
   d. The IP address of Server B

29- What is the length of a MAC address ?
   a. 24 bits
   b. 32 bits
   c. 40 bits
   d. 48 bits

30- What is the length of an IP address ?
   a. 8 bits
   b. 16 bits
   c. 24 bits
   d. 32 bits

31- You are designing a network that needs to support 45 users. You don't plan to extend the segment beyond the current number of users. Which subnet mask would best meet your needs ?
   a. 255.255.0.0
   b. 255.255.255.0
   c. 255.255.255.192
   d. 255.255.255.160

32- You have added a new switch to your network. You want to manage it remotely, so you need to assign it an IP address. Your router that connects to the switch has an IP address of 172.18.12.33/27.
   Which of the following addresses can you assign to this switch ?
   a. 172.18.12.33/28
   b. 172.18.12.32/27
   c. 172.18.12.33/27
   d. 172.18.12.34/27

33- Identify three valid host addresses in any subnet of the 200.168.27.0 network, assuming a fixed subnet mask of 255.255.255.240. (Choose three.)
   a. 200.168.27.33
   b. 200.168.27.112
   c. 200.168.27.119
   d. 200.168.27.126

34- Which of the following represent a private IP address ? (Choose two.)
   a. 192.168.15.205
   b. 172.32.65.31
   c. 10.168.15.205
   d. 124.16.23.1

35- A router has the following (CIDR) entries in its routing table:

Address/mask	Next hop
135.46.56.0/22	Interface 0
135.46.60.0/22	Interface 1
192.53.40.0/23	Router 1
default	Router 2

For each of the following IP addresses, what does the router do if a packet with that address arrives?

(a) 135.46.63.10
(b) 135.46.57.14
(c) 135.46.52.2
(d) 192.53.40.7
(e) 192.53.56.7