# ICS Assignment 5

Name: _____ ID: _____

1. (  B  )_____ protocol (s) is one of the protocols in the transport layer.

   (A) Only TCP            (B) TCP, UDP, and SCTP    (C) Only UDP
   (D) Only SCTP

2. (  A  )IP addresses are currently _____ bits in length.

   (A) 32          (B) 8          (C) 4          (D) 40

3. (  D  )Which physical topology uses a hub or switch?

   (A) ring          (B) star          (C) bus          (D) bus and ring

4. (  C  )_____ is a protocol for accessing and transferring documents on the WWW.

   (A) SMTP        (B) TELNET        (C) HTTP        (D) FTP

5. (  A  )_____ is a protocol for e-mail services.

   (A) TELNET        (B) SMTP        (C) FTP        (D) HTTP

6. During the weekend, Alice often needs to access files stored on her office desktop, from her home laptop. Last week, she installed a copy of the FTP server process on her desktop at her office and a copy of the FTP client process on her laptop at home. She was disappointed when she could not access her files during the weekend. What could have gone wrong?
   **Sol**:
   Probably Alice turned off her desktop, which stopped the FTP server when she left the office. A server process should be running all the time, waiting for clients to access it.

7. Answer the following questions about the figure when the communication is from Maria to Ann:
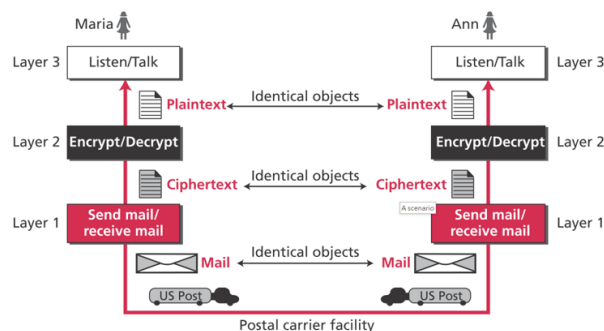


   (a) What is the service provided by layer 1 to layer 2 at Maria's site?

   (b) What is the service provided by layer 2 to layer 3 at Ann's site?

   **Sol**:

   (a) Layer 1 takes the ciphertext from layer 2, inserts (encapsulates) it in an envelope and sends it.

(b) Layer 2 takes the ciphertext from layer 1, decrypts it, and delivers it to layer 3.

8. In the TCP/IP protocol suite, what are the identical objects at the sender and the receiver sites when we think about the logical connection at the application layer?
**Sol**:
The identical objects are the two messages: one sent and one received.

9. Rewrite the following IP addresses using dotted-decimal notation:

   (a) 01011110 10110100 01010101 10010101

   (b) 10101001 10000110 11010010 00110011

   **Sol**:

   (a) 94.180.85.149

   (b) 169.134.210.51

10. A device is sending out data at the rate of 1000 bps.

   (a) How long does it take to send out 10 bits?

   (b) How long does it take to send out a character (8 bits)?

   (c) How long does it take to send a file of $100,000$ characters?

   **Sol**:

   (a) $\dfrac{10}{1000}$ s $= 0.01$ s

   (b) $\dfrac{8}{1000}$ s $= 0.008$ s $= 8$ ms

   (c) $\dfrac{100000 \times 8}{1000}$ s $= 800$ s

11. Distinguish between communication at the network layer and communication at the data-link layer.
**Sol**:
Communication at the network layer is host-to-host; communication at the data-link layer is node-to-node.