National University of Computer and Emerging Sciences, Lahore Campus

	Course Name:	Computer Networks	Course Code:	CS 3001
	Program:	BS (Software Engineering)	Semester:	Spring 2024
	Duration:	15 minutes	Total Marks:	15
	Paper Date:	22-Feb-2024	Section	BSE-6A
	Exam Type:	Quiz 2 - Chapter 2	Page(s):	2

Student Name   **Roll No.**   **Section:**

Q1. Encircle the correct option: **[5 marks] [CLO 2]**
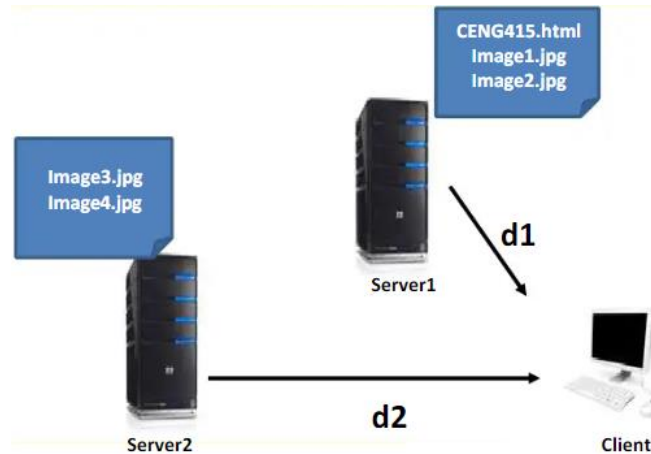
1. When retrieving emails from a recipient's mail server, which protocol is commonly used?

    a. SMTP (Simple Mail Transfer Protocol)

    b. DNS

    c. IMAP (Internet Message Access Protocol)

    d. HTTP (Hypertext Transfer Protocol)

2. Which of the following is present in both an HTTP request line and a status line?

    a) HTTP version number

    b) URL

    c) Method

    d) None of the mentioned

3. Which DNS record type is used to map an alias (alternate name) to a canonical domain name?

    a. A

    b. CNAME

    c. MX

    d. PTR

True/False:

i. Socket number is the combination of only port number. [T / F]

ii. Cookie information is stored only on the server-side in a computer network. [T / F]

Q2. An HTTP file ceng415.html with size **L** is located at server1, this file references 4 images: Image 1 jpg (**size L1**), Image2.jpg (**size L2**), Image3.jpg (**size L3**) and Image4.jpg (**size L4**). The first 2 images are stored in server1, but Image3 and Image4 are stored in another server: server2. Server1 is located at a distance **d1** while server2 is at distance **d2** far away from the client.   **[2+4+4=10 marks] [CLO 2]**

Assume that we have a constant bit rate **R** and a line speed **S** over all the links.

In terms of L., L1, L2, L3, L4, d1, d2, R and S, answer the following questions.

a) Find the Round Trip Times **RTT1** between the client and server1 and **RTT2** between the client and server2.

b) If we are using a **non-persistent http protocol**, compute the total time that it would take the browser on the client to retrieve the entire document.

c) Re-calculate the total time to retrieve the entire document, if the client browser is now using **persistent http protocol without pipelining.**