Quiz: 02   **Total Marks: 15**
Summer 2025   **Time: 15 minutes**

Name:	ID:	Sec:

Write all your answers in this paper only.

Q1. You visited bracu.ac.bd at **July 10, 2025, 5 am** and the copy of the website was saved in the Proxy server for **10 hours**. The website was last modified on **July 7, 2023**. If you visit the same website on **July 11, 2025**, how will the proxy server request to the origin server, and what will be the response from the origin server?   [4]

As the TTL expires, the webpage will not be available in the proxy server. The proxy will send a **conditional request** to the origin server using the `If-Modified-Since` header. If the page **has not changed** since **July 7, 2023**, the origin server will respond with **304 Not Modified** that tells the proxy that its cached version is still valid.
If the page **has changed** after **July 10, 2025**, the origin server will provide the webpage using a response 200 OK.

Q2. PC A wants to visit kiobostha.com. As such, it queries for the IP address of the website at 10:08:21 AM via the Local DNS server using recursive lookup with a TTL of 10 hours. How many RTTs did the PC require to get the IP address if PC B visited obosthaki.com earlier at 08:08:22 AM with the same TTL?   [2]

4RTT

Q3. Suppose you have requested a page from Amazon website. The web page contains multiple objects. Let **5133 ms** to denote the **total RTT time** to get all the objects and **5590 ms** to denote the **total file transfer time** for all the objects. Assuming **65 ms transmission time of each object** and **persistent HTTP connection** without pipelining is being used.
a) Calculate the number of objects contained in the webpage.   [2]

$$\frac{5590}{65} = 86 \text{ objects}$$

b) The time for a packet to go from your PC to the web server and back, the RTT.   [2]

$$\frac{5133}{86+1} = 59 \text{ ms}$$

Quiz: 02   **Total Marks: 15**

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Name:	ID:	Sec:

Write all your answers in this paper only.

Q1. You visited bracu.ac.bd at June 1, 2025, 6 am and the copy of the website was saved in the Proxy server for 24 hours. The website was last modified on May 28, 2023. If you visit the same website later on June 1, 2025, how will the proxy server request to the origin server, and what will be the response from the origin server?   [4]

Since you're revisiting **within the cache validity window (before June 2, 6:00 AM)**, the **proxy still has a fresh copy** of the website. The proxy directly returns the saved **cached content**.

Q2: PC A wants to visit kikhobor.com. As such, it queries for the IP address of the website via the Local DNS server using iterative lookup with a TTL of 2 days. How many RTTs did the PC A require to get the IP address if PC B visited khoborki.com earlier the same day? Consider that PC A and PC B reside at the same network.

4RTT

Q3. Suppose you have requested a page from Amazon website. The web page contains multiple objects. Let **6256 ms** to denote the **total RTT time** to get all the objects and **7189 ms** to denote the **total file transfer time** for all the objects. Assuming 79 ms transmission time of each object and **persistent HTTP connection** without pipelining is being used.

c) Calculate the number of objects contained in the webpage.   [2]

$$\frac{7189}{79} = 91 \text{ objects}$$

d) The time for a packet to go from your PC to the web server and back, the RTT.   [2]

$$\frac{6256}{91+1} = 68 \text{ ms}$$