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National University of Computer and Emerging Sciences, Lahore  
Campus Quiz .....2 [BCS: Section 5A] Fall 2024

Computer Networks (Code: CS3001)

Quiz Date: September 19, 2024

Total Marks: 13

Duration: 20 -Minutes

Name \_\_\_\_\_

Roll # \_\_\_\_\_

**Instructions:** Attempt all questions on this sheet. You can make use of rough sheet (do not attach to this sheet).

**Q1:** Identify and encircle the correct option(s).

(3 Marks)

[CLO 1]

1. With P2P file sharing, the peer that is distributing the file is labeled as:

- (a) Client (b) Server (c) router (d) None of these

2- HTTP uses \_\_\_\_\_ connections in its default mode:

- (a) persistent (b) parallel (c) non-persistent (d) None of these

3- DNS runs over TCP and uses port 53.

- (a) TCP, 23 (b) UDP, 23 (c) TCP, 53 (d) UDP, 23

→ Though peers act as both client and server, in a single comm. session it only acts as either a server or a client

**Q2:** We observe an increase in the total delay (time) for those requests that encounter a web cache (a penalty because of the involvement of the cache). Let LD be the average LAN delay, ALD be the access link delay, ID be the Internet delay, and RT be the total response time. Moreover, assume that ACP is the average cache penalty delay. The following values are given LD = 10ms, ALD = 50ms, ID = 100ms, and ACP = 20 ms. Considering the above scenario and given values, answer the following questions: (4 + 6 = 10 Marks) [CLO 2]

(A) Find the average response time, TR, without use of cache?

(B) Find the average response delay (time) when a cache is used, and the cache hit ratio is 80%?

a)  $RT = LD + ALD + ID = 10 + 50 + 100 = 160 \text{ ms}$

hit rate  
b)  $[HR \times (LD + ACP)] + [Miss \text{ rate} \times RT]$   
 $[0.8 \times (10 + 20)] + [0.2 \times 160]$   
 $= 56 \text{ ms}$

Assumption: Web cache deployed in a LAN