


**National University of Computer and Emerging Sciences, Lahore Campus**

	<b>Course Name:</b>	<b>Computer Networks</b>	<b>Course Code:</b>	<b>CS 3001</b>
	<b>Program:</b>	<b>BS (SE)</b>	<b>Semester:</b>	<b>Spring 2025</b>
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	<b>Paper Date:</b>	<b>06-February-2025</b>	<b>Section</b>	<b>6A</b>
	<b>Exam Type:</b>	<b>Quiz 1 - Chapter 1</b>	<b>Page(s):</b>	<b>2</b>

**Student Name**

**Roll No.**

**Section:**

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**Q1. Encircle the correct option:**

**[5 marks] [CLO 1]**

Which of the following is **not a key delay** in the Internet's end-to-end communication?

- a) Propagation Delay
- b) Processing Delay
- c) Transmission Delay
- d) Access Delay

Which of the following best describes **propagation delay**?

- a) Delay caused by signal transmission through a medium
- b) Time taken by a router to process a packet
- c) Delay caused by queuing at a router
- d) Time taken to divide packets for transmission

**Which device aggregates DSL connections at an ISP?**

- a) DSLAM
- b) Router
- c) Modem
- d) Optical Node

**True/False:**

- i. Circuit switching is more efficient for large-scale networks than packet switching. [T / F]
- ii. The physical layer is responsible for managing application-level protocols. [T / F]

**Question 2:****[Marks 10] [CLO 1]**

Consider a packet of length  $L$  that begins at end system A and travels over three links to a destination end system. These three links are connected by two packet switches. Suppose now the packet is 1,500 bytes, the propagation speed on all three links is  $2.5 \times 10^8 \text{ m/s}$ , the transmission rate of all the three links is 2 Mbps, the packet switch processing delay is 3 msec, the length of the first link is 5,000 km, the length of the second link is 4,000 km, and the length of the last link is 1,000 km. For these values, what is the end-to-end delay?

