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Daffodil International University

Faculty of Science & Information Technology
Department of Computer Science & Engineering
Final term Examination, Summer 2025
Course Code: CSE321, Course Title: Computer Networks
Level: 3 Term: 1 Batch: 65

Time: 02:00 Hrs **Marks: 40**

Answer ALL Questions

[The figures in the right margin indicate the full marks and corresponding course outcomes. All portions of each question must be answered sequentially]

1.	*a*	Given the following IPv6 address: fd00:0000:0000:2000:0000:0e00:9400:0800 Is it possible to simplify this address? If yes, apply the rules and demonstrate the process.	**3**	**CO3**
	b	Bangladesh is currently following IPV4 addresses and planning to implement IPV6 in near future. Apply your understanding to highlight the possible steps can Bangladesh integrates into its policies to make the transition from IPV4 to IPV6?	**5**	
2.	*a*	Two devices are communicating with each other within a single Local Area Network (LAN) using a link-layer switch. Therefore, identify what kind of data the switch stores in its switching table. Based on your analysis, draw a sample switching table showing the example data that would be created during this communication.	**3**	**CO2**
	b	What are the possible limitations of these link layer switches? Which type of switch do you prefer to implement in your network to mitigate the problems of link layer switch and justify your choices?	**5**	
3.	*a*	Given, P =5, Q=11 and M =7. Find out the values of n, φ, e, d, E(M) and D(M) using RSA algorithm	**3**	**CO4**
	b	Two friends want to communicate securely over a network. To ensure their communication is protected from unauthorized access, they have decided to build a secured network model. Apply your understanding of secure communication to suggest and explain the key components that can be integrated into their network model.	**5**	
4.	*a*	Suppose you are planning to include a new reliable application that will initiate a connection (virtual path) before communication. Determine which transport layer protocol is most suitable for your application and justify your selection by explaining the features of the chosen transport layer protocol meet the needs of your application's reliability and connection requirements.	**3**	**CO2**
	b	Suppose your transport layer protocol is heavyweight and suffers from frequent congestion due to excessive overhead, retransmissions, or high traffic load. Propose a set of prevention policies or strategies that could effectively reduce congestion in your protocol design.	**5**	

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5.	*a*	How can you divide or categorize wireless networks based on their network infrastructure? Briefly explain each category with at least one real-world example for each.	3	CO3
	b	What could be the possible application of IEEE 802.11? Apply your understanding of wireless communication to briefly explain the architecture of IEEE 802.11, including key components	5	