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Daffodil International University

Faculty of Science & Information Technology
Department of Computer Science & Engineering
Midterm Examination, Spring 2025
Course Code: CSE321, Course Title: Computer Networks
Level: 3 Term: 2 Batch: 64

Time: 01:30 Hrs **Marks: 25**

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.*	Suppose you are searching for the DIU website from your Chrome browser. Which layer of the OSI model you are working with? What are the major services this layer provides?	[5]	CO1
	b.	In a non-persistent HTTP connection, why is a new TCP connection established for each request-response pair. How does persistent HTTP improve the user experience compared to the non-persistent HTTP.	[5]	CO2
2.		Suppose you are assigned with an IP block of 172.16.00/16. Now distribute these addresses among 3 groups of people. a) 1st group has 64 users and each need 128 addresses. b) 2nd group has 32 people and each need 64 addresses c) 3rd group has 16 users and each need 32 addresses	[5]	CO3
	a.	Calculate Subnet mask for each group		
	b.	Calculate the total number of host and address range for each subnet		
	c.	Calculate how many addresses will be used for this allocation		
3.	*a.*	What is administrative distance? If a router is configured with OSPF and Static routing. Which protocol will work and why?	[2.5]	
	b.	Differentiate distance vector and link state routing protocol.	[2.5]	
4.		Consider the IP address 172.16.45.158 with a subnet mask 255.255.248.0. a) Convert the subnet mask to its binary form. b) Using the given IP address and subnet mask, calculate the network address. c) Identify the range of valid host IP addresses within this subnet. d) Determine the broadcast address for this subnet.	[5]	CO3