



# Daffodil International University

Faculty of Science & Information Technology

Department of Computer Science & Engineering

Final Semester Examination, Fall 2024

Course Code: 313, Course Title: Computer Networks

Level: 3 Term: 1 Batch: 62, 63

Time: 2:00 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)	Design the subnets with the Network Address, Subnet Mask, and usable IP Range for each department with the given IP and requirements.	5	CO2
		<p>The diagram shows a central box labeled 'Address Space: 172.16.3.0/22'. This central box is connected to four other boxes representing different departments: '50 Host' (top left), '250 Host' (top right), '10 Host' (bottom left), and '100 Host' (bottom right). The connections are represented by dashed lines, indicating a logical or physical network topology.</p>		
	b)	Find the aggregated address for the following IP addresses. You have to show the step by step process. 192.168.0.0/26, 192.168.0.64/26, 192.168.0.128/26, and 192.168.0.192/26.	5	
2.	a)	Analyze the IP usage status and explain transition of IPv4 to IPv6 according to that.	5	CO2
	b)	Differentiate the static NAT and basic Dynamic NAT with appropriate figure	5	
3.	a)	Explain 2G network architecture with proper explanation	5	CO4
	b)	Explain the steps to generate key used for encryption and decryption using RSA algorithm	5	
4.	a)	Discuss the role of network-assisted congestion control in mitigating congestion in large-scale communication networks	5	CO2
	b)	How VLAN solves the security problem of layer-2 switch	5	