



Daffodil International University
Department of Software Engineering
Faculty of Science & Information Technology
Final Examination, Spring 2025

Course Code: SE 225; Course Title: Data Communication & Computer Networking

Sections & Teachers: Sec: A to I (Batch-40); NIR, RT, SR

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)	Illustrate the process of data transmission from the sender to the receiver across the seven layers of the OSI model. Use a diagram to represent the encapsulation and decapsulation process. ✓	[Marks-5]	CLO-2 Level 2
	b)	Articulate the process of determining the transmitted bit stream for the bit sequence 10011101 using the CRC method with the generator polynomial $x^4 + x^1 + 1$. 1001	[Marks-5]	CLO-2 Level 2
2	a)	Illustrate with a diagram the process of 3-way handshaking in TCP connection establishment.	[Marks-5]	CLO-3 Level 4
	b)	Distinguish between TCP and UDP.	[Marks-5]	CLO-3 Level 4
	c)	Explain with a diagram the working process of DNS server. ✓	[Marks-5]	CLO-3 Level 4
3	a)	Figure Out the limitations in classful addressing led to the development of classless addressing (CIDR) and explain the ways used in CIDR to improve the limitations. ✓	[Marks-4]	CLO-4 Level 4
	b)	Explore the IP addresses 200.112.17.23 and 192.168.10.129/26. Identify the subnet mask, network address, broadcast address, and range of valid host addresses of both IP. ✓	[Marks-5]	CLO-4 Level 4
	c)	Given IP = 192.168.10.0, New SM = 255.255.255.192. Investigate the answers to the following questions 1. Number of Subnets? 2. Number of Valid Hosts per subnet? 3. Network & Broadcast IP of each Subnet? 4. FVH & LVH IP?	[Marks-6]	CLO-4 Level 4