

Programme: BCA

Course: Data Communication and Computer Networks

Course Code:3CCC207

Enrolment no. _____

Full Marks: 70

Time: 3 Hrs.

Q.No.	Questions	CO	Bloom Taxonomy Category	Marks
Section I				
1	Short Answer type questions.			
a	Describe the primary function of a transmission channel in a communication model.	CO1	Remember	4 x 5 = 20
	or			
b	List and briefly explain two common types of data compression techniques.	CO1	Remember	
	or			
c	Explain the concept of "layers" in networking. Why is layering important in network design?	CO2	Understand	
	or			
d	Describe the impact of network topology on the performance of a network.	CO2	Remember	
	or			
e	Explain the structure of twisted pair cables and mention two applications where they are commonly used.	CO3	Understand	
	or			
f	Difference between circuit switching and packet switching in terms of efficiency and use cases.	CO3	Analyze	
	or			
g	Why is data link control necessary in communication systems? Describe its primary functions.	CO4	Understand	
	or			
h	Describe Wavelength Division Multiplexing (WDM) and its significance in optical fiber communication.	CO4	Understand	
	or			
Section II				
	Long Answer type questions.			
2	Describe the key elements of a data communication model and outline the function of each component in ensuring effective data transmission.	CO1	Understand	3 x 10 = 30
	or			
3	Analyze the essential communication tasks involved in networking, illustrating their implementation through a real-world example.	CO1	Analyze	
	or			
4	Evaluate the advantages and disadvantages of using the TCP/IP model over the OSI model in modern networking.	CO2	Evaluate	
	or			
5	Explain the various performance metrics used to evaluate network performance. How can these metrics impact the overall effectiveness of a computer network?	CO2	Analyze	
	or			
6	Define bit rate and its calculation, and explore its correlation with bandwidth and signal quality in communication systems.	CO3	Understand	
	or			
7	Explain the working principles of microwave transmission, its key applications, and the major obstacles faced in microwave-based communication systems.	CO3	Understand	
	or			
Section III				
	Application based questions			
8	Analyze different flow control methods in data communication, highlighting the strengths and weaknesses of stop-and-wait, sliding window, and selective repeat techniques through a comparative assessment.	CO4	Analyze	1 x 20 = 20
	or			
9	Contrast the three multiplexing techniques—FDM, TDM, and WDM—emphasizing their benefits and limitations in data transmission.	CO4	Analyze	
	or			

COURSE OUTCOME

CO1 Understand the basics of data communication, networking, internet and their importance.

CO2 Analyse the services and features of various protocol layers in data networks.

CO3 Differentiate wired and wireless computer networks

CO4 Analyze TCP/IP and their protocols.