BACHELOR OF TECHNOLOGY (CBCS - 2023)
B. Tech. Sem-IV Computer Science & Engineering : SUMMER : 2025
SUBJECT: COMPUTER NETWORKS

Day : Wednesday | Time : 10:00 AM-01:00 PM
Date : 04/06/2025 | **S-29277-2025** | Max. Marks : 60

NB :
1. Assume suitable data, if necessary.
2. Draw neat labelled diagrams WHEREVER necessary.
3. Figures to the right indicate FULL marks for the question.
4. All questions are COMPULSORY.

Q. 1	Explain the OSI reference model with neat diagrams. Compare it with the TCP/IP model.	(10)
	OR	
Q. 1	Describe the various types of computer networks in detail and mention their applications.	(10)
Q. 2	Describe various error detection techniques used in the Data Link Layer. Explain CRC with an example.	(10)
	OR	
Q. 2	Explain the structure and functioning of the HDLC protocol. What are the different modes of operation in HDLC?	(10)
Q. 3	Explain the concept of switching techniques in computer networks. Discuss circuit switching, packet switching, and message switching with examples.	(10)
	OR	
Q. 3	Explain Link State Routing Protocols. Describe the operation of OSPF (Open Shortest Path First) and its advantages over Distance Vector protocols.	(10)
Q. 4	Explain Multiplexing and de-multiplexing in transport layer.	(10)
	OR	
Q. 4	Describe TCP congestion control approach in detail.	(10)
Q. 5	Discuss TELNET in detail ? Explain how it enables remote login and command execution.	(10)
	OR	
Q. 5	Explain the working of Email protocols with neat diagrams: a) SMTP b) POP3 c) IMAP	(10)
Q. 6	Explain the basic concepts of cryptography, including plain text, cipher text, encryption, decryption, and keys.	(10)
	OR	
Q. 6	Define network security. Why is it essential in modern communication systems? Identify major threats to network security.	(10)

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