



Paper id: 250660

Printed Page: 1 of 2  
Subject Code: KEC063

Roll No:

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**BTECH**  
**(SEM VI) THEORY EXAMINATION 2024-25**  
**DATA COMMUNICATION NETWORKS**

**TIME: 3 HRS****M.MARKS: 100****Note:** Attempt all Sections. In case of any missing data; choose suitably.**SECTION A****1. Attempt all questions in brief.****2 x 10 = 20**

Q No.	Question	CO	Level
a.	Define attenuation and its effect on data transmission.	1	K2
b.	Mention two differences between LAN and WAN.	1	K1
c.	List any two differences between noiseless and noisy channels.	2	K2
d.	What do you mean by bit stuffing in HDLC?	2	K2
e.	What is random access in multiple access methods?	3	K1
f.	Differentiate between CSMA/CD and CSMA/CA?	3	K2
g.	Discuss the term subnetting?	4	K1
h.	What is the length of an IPv4 address?	4	K2
i.	What is a virtual circuit in ATM?	5	K1
j.	Mention any two features of TCP.	5	K2

**SECTION B****2. Attempt any three of the following:****10 x 3 = 30**

a.	Describe the goals and applications of computer networks in modern society with real-world examples.	1	K2
b.	Describe different types of transmission media with diagrams, characteristics, and applications.	2	K2
c.	Describe the channelization techniques FDMA, TDMA, and CDMA, and discuss scenarios where each is most effective.	3	K3
d.	Describe the working of Dijkstra's algorithm for shortest path routing with an example.	4	K3
e.	Explain the basic principles of cryptography, including symmetric and asymmetric key algorithms.	5	K2

**SECTION C****3. Attempt any one part of the following:****10 x 1 = 10**

a.	Compare OSI and TCP/IP models on the basis of layers, functionality, protocol support, and reliability.	1	K2
b.	Describe how IP addressing works. Explain the difference between logical and physical addressing with examples.	1	K3

**4. Attempt any one part of the following:****10 x 1 = 10**

a.	Discuss High-Level Data Link Control in detail, including its frame structure, modes, and operation.	2	K2
b.	A bit stream 1101011011 is transmitted using the standard CRC method. The generator polynomial is $x^4+x+1$ . What is the actual bit string transmitted?	2	K3



Paper id: 250660

Roll No:

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**BTECH**  
**(SEM VI) THEORY EXAMINATION 2024-25**  
**DATA COMMUNICATION NETWORKS**

**TIME: 3 HRS**

**M.MARKS: 100**

**5. Attempt any one part of the following:**

**10 x 1 = 10**

a.	Describe the IEEE 802.11 standard and its importance in wireless LAN.	3	K3
b.	Describe the topology and data transmission technique used in standard Ethernet.	3	K2

**6. Attempt any one part of the following:**

**10 x 1 = 10**

a.	Explain the IPv4 packet structure and how addressing is done, including subnetting and classful addressing.	4	K3
b.	Describe various internetworking devices- routers, gateways, bridges and their functions.	4	K2

**7. Attempt any one part of the following:**

**10 x 1 = 10**

a.	Describe the differences between connection-oriented and connectionless transport protocols.	5	K2
b.	Discuss network security goals and common security mechanisms used to protect data.	5	K2

QP25EP1\_143  
 / 02-Jun-2025 1:46:15 PM | 122.185.51.242