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# B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

## June 2025 Semester End Main Examinations

**Programme: B.E.**

**Semester: VI**

**Branch: Electronics and Telecommunication Engineering**

**Duration: 3 hrs.**

**Course Code: 19ET6PCCCN**

**Max Marks: 100**

**Course: Computer Communication Networks**

**Instructions:** 1. Answer any FIVE full questions, choosing one full question from each unit.  
2. Missing data, if any, may be suitably assumed.

			UNIT - I			CO	PO	Marks
Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.	1	a)	With diagram explain Star and Ring topology			CO1	-	07
		b)	With diagram explain function and responsibilities of OSI model transport layer			CO1	-	06
		c)	With diagram explain V.32 modem standard			CO1	-	07
<b>OR</b>								
	2	a)	Explain the TCP/IP protocol suite with relevant diagram			CO1	-	07
		b)	With diagram explain logical and physical addressing mechanism			CO1	-	06
		c)	Explain character stuffing and Byte stuff the date in the following figure and retrieve the data the receiver			CO2	PO1	07
								
			<b>UNIT - II</b>					
	3	a)	Write an algorithm for noiseless stop and wait protocol			CO1	-	07
		b)	With diagram explain transition phases of PPP protocol			CO1	-	06
		c)	Explain CSMA/CD flow diagram			CO1	-	07
<b>OR</b>								
	4	a)	With frame format explain supervisory frame in HDLC protocol			CO1	-	07
		b)	With diagram explain Select and poll functions in polling access method			CO1	-	06
		c)	A pure ALOHA network transmits 200-bit frames on a shared channel of 200 kbps. What is the throughput if the system (all stations together) produces a. 1000 frames per second   b. 500 frames per second c. 250 frames per second.			CO2	PO1	07

<b>UNIT - III</b>					
5	a)	With diagram explain transition from IPv4 to IPv6	<i>CO1</i>	-	<b>07</b>
	b)	Consider you have 4 departments, namely: Sales, Accounts, HR and IT, your manager wants you to design a network that each department has 32, 64, 8,128 hosts respectively, organization has given you the block 192.168.1.0/24	<i>CO2</i>	<i>PO1</i>	<b>06</b>
	c)	Consider following network, determine the shortest path tree assuming that the root node is Node D? Show working with node labels as required using Dijkstra Shortest Path algorithm	<i>CO3</i>	<i>PO2</i>	<b>07</b>
<b>OR</b>					
6	a)	With diagram explain NAT address translation	<i>CO1</i>	-	<b>07</b>
	b)	An IPv4 datagram has arrived with the following information in the header in hexadecimal 0x45 00 00 54 00 03 58 50 20 06 00 00 7C 4E 03 02 B4 0E 0F 02 i. What is the version of packet ii. Are there any options iii. Is the packet fragmented iv. What is the size of the data? v. How many nodes this packet travel vi. What is the type of service?	<i>CO2</i>	<i>PO1</i>	<b>06</b>
	c)	With diagram explain reserved addresses of IPv6 format	<i>CO1</i>	-	<b>07</b>
<b>UNIT - IV</b>					
7	a)	With diagram explain TCP header format	<i>CO1</i>	-	<b>10</b>
	b)	With diagram explain connection establishment and Termination in TCP using three way handshake	<i>CO1</i>	-	<b>10</b>
	<b>OR</b>				
8	a)	With relevant diagram explain different types of scheduling mechanism to improve the quality of service	<i>CO1</i>	-	<b>10</b>
	b)	With relevant diagram explain closed loop congestion control	<i>CO1</i>	-	<b>10</b>

<b>UNIT - V</b>						
	9	a)	With diagram explain different domains of DNS in internet	CO1	-	<b>10</b>
		b)	With diagram and example explain remote log in service	CO1	-	<b>10</b>
<b>OR</b>						
	10	a)	With diagram explain different scenarios of electronic mail service	CO1	-	<b>10</b>
		b)	With diagram explain WWW architecture and browser structure	CO1	-	<b>10</b>

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B.M.S.C.E. - EVEN SEM 2024-25