Reg. No.																

Question Paper Code	14442

B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2026

Sixth Semester

Electronics and Instrumentation Engineering

20ESCS601 - COMPUTER NETWORKS

Regulations - 2020

Duration: 3 Hours | Max. Marks: 100

PART – A (i) (MCQ)
(16 × 1 = 16 Marks)
Answer ALL Questions

		Marks	*K – Level*	*CO*
1.	LAN stands for ____ a) Long Area Network b) Local Area Network c) Local Audible Network d) Limited Area Network	*1*	*K1*	*CO1*
2.	A company requires a dedicated communication path with constant bandwidth for voice calls. Which switching technique should be applied? a) Packet switching b) Circuit switching c) Message switching d) Frame relay	*1*	*K3*	*CO1*
3.	Why is packet switching more efficient than circuit switching? a) Uses fixed path b) Uses dynamic routing and bandwidth sharing c) Requires more delay d) Uses dedicated channel	*1*	*K2*	*CO1*
4.	Which protocol is used for point-to-point communication? a) HDLC b) PPP c) FTP d) HTTP	*1*	*K1*	*CO2*
5.	A receiver is getting data faster than it can process, causing buffer overflow. Which mechanism should be applied? a) Error detection b) Flow control c) Encryption d) Routing	*1*	*K3*	*CO2*
6.	Why is MAC address important in LAN? a) Identifies application b) Identifies device uniquely c) Controls routing d) Encrypts data	*1*	*K2*	*CO2*
7.	Which protocol is used for error reporting? a) TCP b) ICMP c) UDP d) ARP	*1*	*K1*	*CO3*
8.	Why is IPv6 introduced? a) Reduce speed b) Increase address space c) Reduce security d) Remove routing	*1*	*K2*	*CO3*
9.	A company wants to divide its large network into smaller manageable parts. Which technique should be applied? a) Routing b) Subnetting c) Encryption d) Fragmentation	*1*	*K3*	*CO3*
10.	Port numbers are used to identify: a) Devices b) Application c) Networks d) Frames	*1*	*K1*	*CO4*

11.	Data from a large file is broken into smaller units before transmission. Which process is being applied? a) Routing b) Segmentation c) Encryption d) Multiplexing	*1*	*K3*	*CO4*
12.	Why is TCP more reliable than UDP? a) Faster transmission b) Error checking and retransmission c) Less overhead d) No connection	*1*	*K2*	*CO4*
13.	A user enters a website URL and gets the IP address automatically. Which protocol is applied? a)FTP b) DNS c) SMTP d) SNMP	*1*	*K3*	*CO5*
14.	What is the purpose of SNMP? a) File transfer b) Network management c) Email sending d) Routing	*1*	*K2*	*CO5*
15.	A system administrator wants to transfer files between two systems. Which protocol should be applied? a) HTTP b) FTP c) Telnet d) SNMP	*1*	*K3*	*CO5*
16.	Which protocol is used for web browsing? a) FTP b) HTTP c) SMTP d) SNMP	*1*	*K1*	*CO5*

PART – A (ii) (Short Answer Questions)
(8 × 3 = 24 Marks)
Answer ALL Questions

17.	Select the network among LAN, WAN and MAN which is best suited for intercontinental applications and explain.	*3*	*K3*	*CO1*
18.	Analyze the layer that implements the node to node channel connection in OSI layered architecture.	*3*	*K4*	*CO1*
19.	Relate persistent CSMA with non-persistent CSMA.	*3*	*K3*	*CO2*
20.	Examine the role of 802.11.	*3*	*K4*	*CO2*
21.	Identify the two different classes of routing protocol and explain the same.	*3*	*K3*	*CO3*
22.	Identify how a well-known port different from an ephemeral port?	*3*	*K3*	*CO4*
23.	Categorize the services provided by Transport layer protocol.	*3*	*K4*	*CO4*
24.	Organize the three basic pieces of MIME with example.	*3*	*K3*	*CO5*

PART - B (Descriptive Answer Questions)
(5 × 12 = 60 Marks)
Answer ALL Questions

25.	a)	Apply the TCP/IP protocol suite to explain how data is transmitted from a client to a server with a neat diagram.	*12*	*K3*	*CO1*
		OR			
	b)	Illustrate the roles of the network and transport layers by applying them to an end-to-end data communication process with diagrams.	*12*	*K3*	*CO1*
26.	a)	Analyze the HDLC bit-oriented protocol by examining its frame structure, control mechanisms, and error handling features.	*12*	*K4*	*CO2*
		OR			

	b)	Analyze the CSMA(CSMA/CD, CSMA/CA) protocol by examining its operation and collision handling mechanisms in a shared network.	*12*	*K4*	*CO2*
27.	a)	Use the Distance vector routing algorithm to show how routing tables are updated in a network with suitable example.	*12*	*K3*	*CO3*
		OR			
	b)	Illustrate the use of IPv6 in a real-time network and demonstrate how it overcomes the limitations of IPv4.	*12*	*K3*	*CO3*
28.	a)	Analyze the User Datagram Protocol (UDP) by examining its operational characteristics and evaluate the role of checksum in ensuring data integrity with a suitable example.	*12*	*K4*	*CO4*
		OR			
	b)	Examine and analyze the functional features of SCTP and how they enhance transport layer communication?	*12*	*K4*	*CO4*
29.	a)	Apply DNS operation to illustrate how a domain name is resolved into an IP address during web browsing, with a neat diagram?	*12*	*K3*	*CO5*
		OR			
	b)	Use WWW architecture to show how information is retrieved from the internet using browsers and servers.	*12*	*K3*	*CO5*