Roll No. | | | | | | | | | | |

ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)

B.E. /B.Tech / B. Arch (Full Time) - END SEMESTER EXAMINATIONS, NOV / DEC 2024

ELECTRONICS AND COMMUNICATION ENGINEERING
VI Semester
EC5602 COMMUNICATION NETWORKS
(Regulation 2019)

Time: 3 hrs Max. Marks: 100

CO1	Ability to describe the role of layered communication architecture and solutions
CO2	Ability to illustrate the performance of data link layer
CO3	Ability to analyze different routing protocols and algorithms
CO4	Ability to discuss transport layer and application layer protocols
CO5	Ability to summarize different types of switching techniques

BL – Bloom's Taxonomy Levels
(L1-Remembering, L2-Understanding, L3-Applying, L4-Analysing, L5-Evaluating, L6-Creating)

PART- A(10x2=20Marks)
(Answer all Questions)

Q.No.	Questions	Marks	CO	BL
1	Name the four basic network topologies, and cite an advantage of each type.	2	1	1
2	What is the difference between a port address, a logical address, and a physical address?	2	1	2
3	What is the difference between hub and switch?	2	2	2
4	Compare and contrast byte-stuffing and bit-stuffing.	2	2	2
5	Find the error, if any, in the following IPv4 addresses. i. 111.56.045.78 ii. 221.34.7.8.20	2	3	3
6	Calculate the HLEN (in IPv4) value if the total length is 1200 bytes, 1176 of which is data from the upper layer.	2	3	3
7	Compare TCP and UDP header.	2	4	2
8	Define SNMP. State its concept.	2	4	1
9	What is the need for switching? List the three traditional switching methods.	2	5	1
10	Compare space-division and time-division switches.	2	5	2

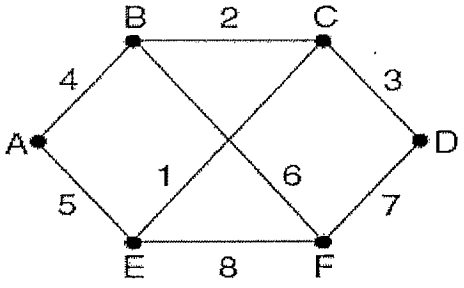
PART- B(5x 13=65Marks)
(Restrict to a maximum of 2 subdivisions)

Q.No.	Questions	Marks	CO	BL
11 (a)	With a neat sketch explain the OSI reference model and detail the functionalities of each layer.	13	1	2
	OR			
11 (b)	Describe in detail about RS-232C standard.	13	1	2
12 (a)	Compare and contrast the Go-Back-N ARQ Protocol with Selective-Repeat ARQ with neat sketches.	13	2	3
	OR			
12 (b)	Given the dataword 1010011110 and the divisor 10111, i. Show the generation of the codeword at the sender site (using binary division). (7)	13	2	3

	ii. Show the checking of the codeword at the receiver site (assume no error). (6)			
13 (a)	Explain IPv6 packet format with its fields with a neat sketch. Compare and contrast the options in IPv4 and the extension headers in IPv6. Make a table that shows the presence or absence of each.	**13**	3	4
	OR			
13 (b)	Describe in detail about the error-reporting and query messages of ICMP.	**13**	3	4
14 (a)	With neat sketches, explain the three phases of TCP- connection establishment, data transfer, and connection termination.	**13**	4	2
	OR			
14 (b)	Write notes on i. HTTP (5) ii. FTP (4) iii. TELNET (4)	**13**	4	2
15 (a)	Explain the TST and STS switching techniques and also compare the complexities of both the techniques.	**13**	5	2
	OR			
15 (b)	With required diagrams, explain the digital cross connect systems.	**13**	5	2

PART- C(1x 15=15Marks)

(Q.No.16 is compulsory)

Q.No.	Questions	Marks	CO	BL
16.	i. With a neat flowchart, explain Dijkstra's algorithm to find the shortest path in a network. (4) ii. By using the above algorithm, find the routing table of node A for the following network. The routing table must contain the outgoing line to use and the cost. (12) 	**15**	3	4