Code: 20CS3503, 20IT3503

III B.Tech - I Semester – Regular Examinations - DECEMBER 2022

COMPUTER NETWORKS
(Common for CSE & IT)

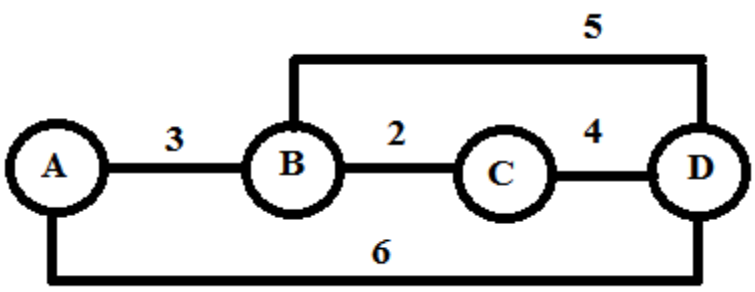Duration: 3 hours   Max. Marks: 70

Note: 1. This paper contains questions from 5 units of Syllabus. Each unit carries 14 marks and have an internal choice of Questions.
    2. All parts of Question must be answered in one place.

BL – Blooms Level   CO – Course Outcome

			BL	CO	Max. Marks
		UNIT-I			
1	a)	Why do we need layering in network software design? Explain the layering mechanism used in internet network software. Explain the services provided by each of these layers.	L2	CO1	7 M
	b)	Distinguish between the guided transmission media and wireless transmission media.	L2	CO1	7 M
		OR			
2	a)	What is CSMA? What is the purpose of CSMA/CD? And Explain it.	L2	CO2	7 M
	b)	What is Cyclic Redundancy Check (CRC)? Explain CRC encoder and decoder considering data word 101001111 and the divisor 10111. Generate the transmitted message at the sender and verify the correctness of the received message.	L2	CO2	7 M

UNIT-II

3	a)	Explain IPv6 header Format. How it is differentiated from IPv4.	L2	CO1	7 M
	b)	Explain the problems associated with IPv4 addressing. Explain the significance and the operation of NAT.	L2	CO3	7 M

OR

4	a)	An ISP is granted the block 80.70.56.0/21. The ISP needs to allocate addresses for two organizations each with 500 addresses, two organizations each with 250 addresses, and three organizations each with 50 addresses. i) Find the number and range of addresses in the ISP block. ii) Find the range of addresses for each organization and range of unalloted addresses. iii) Show the outline of the address distribution & the forwarding table.	L4	CO5	7 M
	b)	Describe two major differences between the Warning bit method and the Choke Packets method.	L2	CO1	7 M

UNIT-III

5	a)	Demonstrate Link State Routing algorithm. Also show working algorithm with the help of an example.	L3	CO3	7 M
	b)	How can you justify different addresses as to be used for different networks in Internet and also explain the IPv4 header?	L2	CO3	7 M

		OR			
6	a)	Describe about Distance vector routing with example below.	L3	CO3	7 M
	b)	Which field(s) in the datagram is(are) responsible for gluing together all fragments belonging to original datagram. Explain.	L3	CO1	7 M

UNIT-IV

7	a)	Explain and Demonstrate Go back N mechanism with an example.	L2	CO4	7 M
	b)	What are the various fields in UDP Header? Why does transport layer use pseudo header in addition to UDP header? Explain its fields.	L2	CO4	7 M
		OR			
8	a)	Give the format of TCP segment Header and explain its different fields.	L2	CO4	7 M
	b)	Elucidate about phases of congestion control in TCP.	L2	CO4	7 M

UNIT-V

9	a)	What understanding would you make about HTTP in application layer?	L2	CO4	7 M
	b)	Briefly explain FTP in the application layer.	L2	CO4	7 M

			OR			
10	a)	Do you agree SMTP allows Electronic Mail, Justify?	L2	CO4	7 M
	b)	Show your understanding about components of Secure Shell (SSH) for various applications.	L2	CO4	7 M