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

Autonomous Institute Affiliated to VTU

September / October 2023 Supplementary Examinations

Programme: B.E **Semester: VI**

Branch: Electronics and Telecommunication Engineering **Duration: 3 hrs.**

Course Code: 19ET6PCCCN **Max Marks: 100**

Course: Computer Communication Networks **Date: 19.09.2023**

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

1 a) What are the four levels of addresses used in a TCP/IP protocol suite? Explain with examples. **10**

b) Explain the bit stuffing and byte stuffing method of framing with an example. **10**

UNIT - II

2 a) Explain the stop and wait ARQ protocol in detail. **10**

b) In detail, explain the different types of frames used in HDLC protocol. **10**

OR

3 a) Explain the selective repeat ARQ protocol for a noisy channel considering the design and algorithm. **10**

b) Explain why collision is an issue in a random access protocol but not in controlled access? List the controlled access protocols and explain with an example. **08**

c) A CSMA/CD network has bandwidth of 10Mbps, the maximum propagation time is 25.6 microseconds. What should be the minimum frame size? **02**

UNIT - III

4 a) List three transition strategies to move from IPV4 to IPV6. Explain the difference between dual stack and tunneling strategies during the transition period. **06**

b) What is NAT? How can NAT help in address translation. **06**

c) An ISP is granted a block of addresses starting with 190.100.0.0/16. The ISP wants to distribute these blocks to three groups of customers as follows. **08**

i) The first group has 64 customers; each needs 256 addresses.
ii) The second group has 128 customers; each needs 128 addresses.
iii) The third group has 128 customers; each needs 64 addresses.

Design the sub blocks and find out how many addresses are still available after these allocations.

OR

5	a)	What are the functions of a RIP?	**04**
	b)	How do we initialize the routing tables in Path vector routing? Describe its sharing and updating	**08**
	c)	An organization is given the block 17.12.40.0/26, which contains 64 addresses. The organization has three offices and needs to divide the addresses into three sub-blocks of 32, 16 and 16 addresses. Find the masks and show one configuration for the above scenario and find the subnet addresses from one of the addresses in the subnet.	**08**

UNIT - IV

6	a)	Compare between a TCP segment and an SCTP packet.	**08**
	b)	What are the three phases of connection oriented transmission (Establish, Termination, Data Transfer) in TCP connection? Explain with a hand shaking signal.	**12**

UNIT - V

7	a)	Describe the name address resolution of mapping.	**08**
	b)	Explain the architecture of e-mail with four scenarios.	**12**

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