P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)
Sixth Semester, B.E. - Information Science and Engineering
Semester End Examination; May/June - 2019
Communication Network - II

Time: 3 hrs   *Max. Marks: 100*

*Note: Answer **FIVE** full questions, selecting **ONE** full question from each unit.*

UNIT - I

1 a.	Identify the services provided by the network layer and explain each of them with an example.	12
b.	An organization is granted a block of addresses with the beginning address 14.24.74.0/24. The organization needs to have three sub-blocks of addresses to use in its three subnets: one sub-block of 10 addresses, one sub-block of 60 addresses and one sub-block of 120 addresses. Design the sub-blocks.	8
2 a.	Explain the format of IPv4 header with a neat diagram.	10
b.	Explain the structure or format of an ARP packet with a neat diagram.	10

UNIT - II

3 a.	Explain the following : i) Double crossing ii) Triangle routing	10
b.	Differentiate between Bellman-Ford algorithm and Distance Vector routing algorithm.	4
c.	Explain the structure or format of an RIP message with a neat diagram.	6
4 a.	List and briefly explain different types of OSPF packet.	6
b.	Explain the structure or format of an IGMP messages with neat diagrams.	10
c.	Write the taxonomy of common multicast protocols.	4

UNIT - III

5 a.	List any four transport layer services.	4
b.	Write the advantages and disadvantages of UDP.	4
c.	Explain the structure or format of a TCP segment (Header) with a neat diagram.	12
6 a.	Explain congestion avoidance algorithm with an example.	10
b.	Compare and contrast a TCP and an SCTP packet.	10

UNIT - IV

7 a.	List out any two differences between Client-Server Paradigm and Peer-to-Peer paradigm.	2
b.	Describe how DHCP operates? When both client and server are in the; i) Same network ii) Different networks	8
c.	Explain the following : i) Iterative Resolution ii) Recursive Resolution	10

8 a. Explain the remote login protocols. 8

  b. Explain the architecture of E-mail, by considering different scenarios. 12

UNIT - V

9 a. Show the unabbreviated colon hex notation for the following IPv6 addresses :

    i) An address with 64 0s followed by 64 1s 2

    ii) An address with 128 alternative 1s and 0s

  b. Explain the following with their format :

    i) Mapped address

    ii) Link local address 9

    iii) Multicast address

  c. Explain how migration from IPv4 to IPv6 is done? Give examples. 9

10 a. List out any three differences between substitution cipher and transposition cipher. Apply transposition cipher for the message "enemyattackstonightz" using the below key,

 10

  b. List out any four differences between Symmetric and Asymmetric key cryptography. 4

  c. Explain Diffie-Hellman key exchange algorithm with an example. 6

✳ ✳ ✳ ✳