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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 - 2018

Computer Networks

Time: 3 hrs *Max. Marks: 100*

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

UNIT - I

1	a.	With a neat diagram, explain ISO-OSI layer architecture.	10
	b.	Describe number of blocks (Netid part), block size (Hostid part) of classful addresses along with application.	10
2	a.	An organization is granted the block 211.17.180.0/24. The administrator wants to create 32 subnets; i) Find the subnet mask ii) Find the number of addresses in each subnet iii) Find the first and last addresses in subnet 1 iv) Find the first and last addresses in subnet 32	10
	b.	What is NAT? How can NAT helps in address depletion? Explain the working of NAT.	10

UNIT - II

3	a.	Explain the process of checksum calculation at sender and receiver in IP.	8
	b.	Discuss the static address mapping and its limitations. How the limitations are overcome? Explain.	4
	c.	With neat diagram, explain the roles of Agents in Mobile-IP.	8
4	a.	With a neat diagram, describe ARP packet format.	10
	b.	Illustrate the working of link state routing with suitable diagrams.	10

UNIT - III

5	a.	With a neat flow diagram, explain working of Stop and Wait protocol.	8
	b.	Assume that, in a Stop and Wait system, the bandwidth of the line is 1 Mbps, and 1 bit takes 20 milliseconds to make a round trip. What is the bandwidth delay product? If the system data packets are 1000 bits in length, what is the utilization percentage of the link?	2
	c.	With a neat diagram, illustrate the connection termination using three way handshaking in TCP.	10
6	a.	Describe slow start phase and congestion avoidance phase in congestion control under TCP protocol.	12
	b.	Write TCP segment (Data and header) and SCTP (Data and header).	8

Contd…2

UNIT - IV

7	a.	Write differences between concurrent server and iterative server. Explain working of connectionless iterative server.	8
	b.	What for DHCP is used?	2
	c.	Explain the different types of name-address resolution with neat diagram.	10
8	a.	How a host calls a DNS to map an address to a name or name to an address? Explain Recursive Resolution.	10
	b.	Define TELNET.	2
	c.	What are two types of FTP connections? Explain the steps involved in creating these connections.	8

UNIT - V

9	a.	Write the comparison between IPV4 and IPV6.	5
	b.	List and explain three main goals of information security.	5
	c.	Explain the steps involved in obtaining Cipher text from a plaintext using monoalphabetic cipher, use additive Cipher with key = 15 to encrypt the message “hello”.	10
10	a.	With neat diagrams, illustrate the three transition strategies from IPV4 to IPV6.	10
	b.	Explain the general idea behind the procedure used in RSA.	10

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