U.S.N | | | | | | | | | | |

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

(An Autonomous Institution affiliated to VTU, Belgaum)

Sixth Semester, B.E. - Computer Science and Engineering

Semester End Examination; June/July - 2015

Computer Networks

Time: 3 hrs *Max. Marks: 100*

***Note**: Answer any **FIVE** full questions, selecting at least **TWO** full questions from each part.*

PART - A

1. a An ISP is granted a block of addresses starting with 190.100.0.0/16 (65,536 addresses) The ISP needs to distribute these addresses to three groups of customers as follows.
   i) The fist 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 need 64 addresses.
   Design the sub blocks and find out how many addresses are still available after these allocations addresses are still available after these allocations, and how many allocated by ISP. 10

   b. Explain Fragmentation in IPv4. What is the use of Identification, flags and fragmentation offset field? 5

   c. Explain with a neat diagram tunneling strategy. 5

2 a. Explain ICMP. With types of messages and message format. What is the main responsibility of ICMP? Explain five types of errors handled. 10

   b. Explain the working of distance vector Routing with neat diagrams. What are two node loop instability and three node instability? 10

3 a. List TCP services and TCP features. 5

   b. Explain TCP connection establishment phase with neat diagram 5

   c. Show low checksum is calculated in UDP assuming data for all fields in UDP packet. 5

   d. Write the comparison between TCP segment and an SCTP packet. 5

4 a. Explain Open-loop and closed loop congestion control. Briefly explain the policies that can prevent congestion. 10

   b. Explain three scheduling techniques to improve QOS. 6

   c. What is integrated service? List and explain in brief two classes of services under integrated service. 4

PART – B

5 a. Explain with neat diagrams name-address resolution. 10

   b. What is DNS? Explain domain names and labels. What are two types of messages used in DNS? Explain them with suitable diagrams. 10

6	a.	Explain the architecture of e-mail by giving four scenarios with necessary diagrams.	10
	b.	What is Telnet? Explain with neat diagram.	5
	c.	Explain working of FTP with neat diagram.	5
7	a.	Explain Web documents. What are its types? Explain each type briefly.	10
	b.	Write a note on HTTP transaction.	6
	c.	Write a note on SNMP.	4
8	a.	Explain symmetric-key cryptography. Explain different types of ciphers under symmetric-key.	10
	b.	Why message integrity is necessary? Explain different keys to preserve the integrity of a document.	10

* * * * *