2015
B.E. (Electronics and Communication Engineering)
Fourth Semester
EC-405: Computer Networks

Time allowed: 3 Hours
Max. Marks: 50

NOTE: *Attempt* <u>*five*</u> *questions in all, including Question No. I which is compulsory and selecting two questions from each Unit.*

x-x-x

Q1. a) What is difference between Fast Ethernet and Gigabit Ethernet?
     b) What is the need for layered structure in the network model?
     c) What is subnetting?
     d) Explain difference between static and dynamic routing protocols?
     e) What is the function of session layer?   10

UNIT - I

Q2. Explain TCP/IP reference models. Discuss the protocols that exist on different layers in   10
Internet model.

Q3. Compare and contrast a random-access protocol with a controlled access protocol. One
hundred stations on a pure ALOHA network share a 1-Mbps channel. If frames are   10
1000 bits long, find the throughput if each station is sending 10 frames per second.

Q4. a) Discuss design issues of data link layer.   3
     b) Explain the main functions of HDLC, SLIP and PPP data link protocols.   3
     c) What is the significance of the CRC algorithm? Explain with an example.   4

UNIT - II

Q5. a) Which fields of IPv4 header change from router to router?   3
     b) Using 5-bit sequence numbers, what is the maximum size of the send and receive
        windows for each of the following protocols and why?
        (i)   Stop-and-wait ARQ   7
        (ii)   Go-back-N ARQ
        (iii)   Selective-Repeat ARQ

Q6. a) Discuss the difference between open loop and closed loop congestion control
methods with suitable examples.   4
     b) How does ARP resolve an IP address to a MAC address?   3
     c) How does DHCP differ from static IP configuration?   3

Q7. Write short notes on the following:
     a) Network Security algorithms at Application Layer   10
     b) Importance of SNMP

x-x-x