CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY

Sixth Semester of B. Tech. Examination (IT)

May 2012

IT308: COMPUTER NETWORKING -II

Date: 09.05.2012, Wednesday **Time: 01:30 p.m. To 04:30 p.m.** **Maximum Marks: 70**

Instructions:

1. The question paper comprises of two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.
4. Use of scientific calculator is allowed.

SECTION – I

Q - 1 Write the answer of following Questions. [11]

(a) State True or False & Justify: Maximum length of IPv4 Packet is 65,536 bytes. [1]

(b) Maximum length of Ethernet is 1518 bytes. What are the two reasons for it? [1]

(c) Find out the sub-network address for IP Address: 141.14.120.77, Subnet Mask: 255.255.192.0 [1]

(d) What is Full Form of ICMP? ICMP works at _____ Layer. [1]

(e) What is Loop Back address? Why is it needed? [1]

(f) Source Quench message is sent to the Original Sender by the intermediate router. When & Why does intermediate router send SQ message to Original Sender? [2]

(g) What are the Directed Broadcast and Private Addresses? Give example of each. [2]

(h) Write down the differences between Connection Oriented and Connection Less Service. [2]

Q - 2 Write the answer of following Questions. [12]

(a) Explain Functionalities of Repeater, Bridge, Switch and Router. [4]

(b) What is classless and classfull addressing? Give two example of each. [4]

(c) Write down Ethernet Frame Format. Explain significance of each filed of frame. [4]

OR

Q - 2 Write the answer of following Questions. [12]

(a) What are the security issues of Network Layer? Write down the probable solutions of it. [4]

(b) By taking suitable diagram, explain working of Proxy ARP. [4]

(c) CSMA/CD mechanism is used by Ethernet. Explain step-by-step of CSMA/CD mechanism to send data at Data Link Layer. [4]

Q - 3 Write the answer of following Questions. (Attempt any **TWO**) [12]

(a) By taking suitable network topology, explain how router forwards any packet toward destination.

(b) Write and Explain types of error messages of ICMP?

(c) Draw and explain IPv4 Frame Format.

(d) By taking suitable network topology & IP addressing scheme, explain scenario of Network Address Translation(NAT).

SECTION – II

Q - 4 Write the answer of following Questions. [11]

(a) Transport Layer provides_____ [1]

i) Host-to-host Communication

ii) Process-to-Process Communication

Justify your option in brief.

(b) What is role of BGP in network routing? [1]

(c) What is length of IPv4 and IPv6 address? How to write IPv4 address and IPv6 address. Give Example. [1]

(d) What is Count to Infinity? [1]

(e) Draw UDP Header Format. [1]

(f) List out fields of OSPF common header format. [2]

(g) What are the differences between multicasting and multiple unicasting? [2]

(h) Write down major differences between Distance Verctor Routing Algorithm and Link State Routing Algorithm? [2]

Q - 5 Write the answer of following Questions. [12]

(a) Explain TCP three way handshake. [4]

(b) What are the timers used in RIP? What is the duration of each timer? [4]

(c) Draw TCP header format. Explain fields of it. [4]

OR

Q - 5 Write the answer of following Questions. [12]

(a) What is the sequence of socket system calls used in client and server to exchange data? [4]

(b) What is silly window syndrome? What are the solutions of it? [4]

(c) What are the timers used in TCP? How is it calculated? [4]

Q - 6 Write the answer of following Questions. (Attempt any **TWO**) [12]

(a) What are the services provided by Transport Layer? How does it provide reliability of packet?

(b) Explain Mechanism of Link State Routing Protocol to make entry into Routing Table.

(c) How do IGMP work to send data from one-to-many station?

(d) Draw and Explain: TCP state transition diagram.