

# CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY

Sixth Semester of B. Tech (IT) Examination

November 2014

IT308 Computer Networking-II

Date: 18.11.2014, Tuesday

Time: 01.30 p.m. To 04.30 p.m.

Maximum Marks: 70

## Instructions:

1. The question paper comprises 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 Answer the question below.**

[07]

- a. What is maximum length of IPv4 packet?
- b. Draw UDP header format.
- c. What is TTL?
- d. Why do we need persistence timer in TCP?
- e. Using 7-bit sequence numbers, what is the maximum size of send and receive window size for Go-Back-N?
- f. Mention two ways for delivery of items from producer to consumer.
- g. Define socket address.

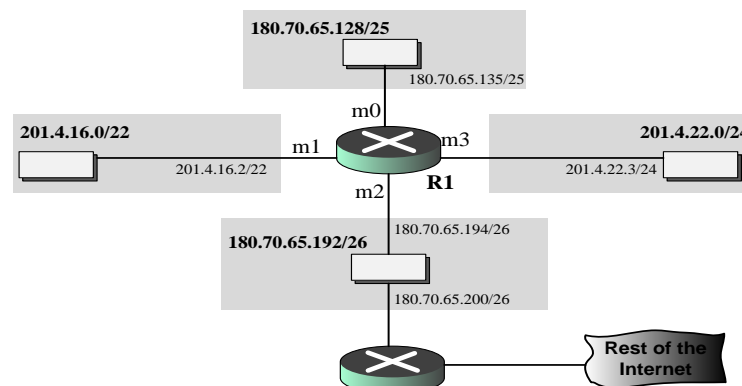
**Q – 2.a** What is Two-level addressing? And why do we need Three-level addressing?

[04]

**Q – 2.b** Answer any two questions.

[10]

- (i) Explain special IP addresses with example.
- (ii) In classless addressing, we know the first address and the number of addresses in the block. Can we find the prefix length? Show process with suitable example.
- (iii)



Make routing table for router R1 using the configuration in above figure. And also show the forwarding process if a packet arrives at R1 in above figure with destination address 201.4.16.40.

**Q - 3 Answer any Two. [14]**

- a. An organization is granted a block of addresses with the beginning address 14.24.74.0/24. The organization needs to have 3 sub-blocks of addresses to use in its three subnets as shown below:
- One sub-block of 120 addresses.
  - One sub-block of 60 addresses.
  - One sub-block of 10 addresses.
- Draw suitable network diagram.
- b. Explain Asynchronous Transfer Mode (ATM) in Switched WAN.
- c. Draw and explain the architecture of IEEE 802.11.

**SECTION – II****Q - 4 Answer the question below. [07]**

- a. Match the following [05]
- |          |                       |
|----------|-----------------------|
| (a) SMTP | (1) Application Layer |
| (b) BGP  | (2) Transport Layer   |
| (c) TCP  | (3) Data Link Layer   |
| (d) PPP  | (4) Network Layer     |
| (e) ICMP | (5) Physical Layer    |
- b. Differentiate between Hub and Switch. [02]

**Q – 5.a Explain the Network layer services in detail. [05]****OR****Q – 5.a Draw suitable diagram and explain working of ARP. [05]****Q – 5.b Explain TCP three way handshakes. [04]****Q – 5.c CSMA/CD mechanism is used by Ethernet. Explain step by step of CSMA/CD mechanism to send data at Data at Link Layer. [05]****Q – 6.a Draw and explain connection oriented service of transport layer. [05]****Q – 6.b Differentiate between connection oriented and connectionless services. [05]****Q – 6.c List out the situations, when ICMP error messages are not generated. [04]****OR****Q – 6.a Explain stop and wait protocol of transport layer. [05]****Q – 6.b Explain different types of links in OSPF. [05]****Q – 6.c Differentiate the Unicast, Multicast and Broadcast. [04]**

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