M.E - I Sem - Comp. 29/12/09.

AGJ 2nd half (b) 57

Network Protocols & Networking

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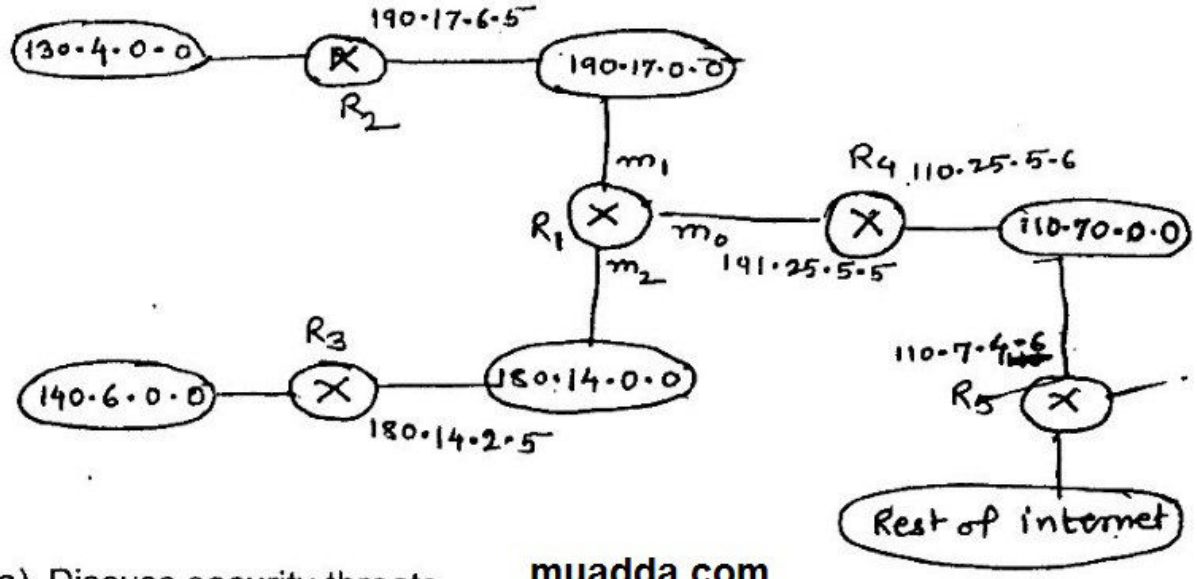
(3 Hours) [Total Marks : 100

N.B. : (1) Question No. **1** is **compulsory**.
(2) Solve any **four** questions out of remaining **six** questions.

1. (a) ISP is granted a block of addresses. Starting with 190·100·0·0/16. The ISP needs to distribute these addresses to the group of customer as follows – **10**
   (i) The first group has 128 customers, each need 256 addresses
   (ii) The second group has 64 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 still are available after this allocation.
   (b) Design the routing table router R_1 for following network. **10**



2. (a) Discuss security threats. **10**
   (b) Explain in detail connection establishment and connection termination process in TCP. **10**

3. (a) Disucss various network monitoring configurations. How information required for network monitoring is collected ? **10**
   (b) Explain error reporting messages in ICMP. **10**

4. (a) How error detection and correction is achieved in TCP ? **10**
   (b) Explain RMON goals and RMON MIB. **10**

5. (a) IP datagram has arrived with following information in the header (in hexadecimal) **10**
   45 00 00 54 00 03 00 00 20 06 00 00 7C 4E 03 02 B4 0E 0F 02.
   (i) are there any options
   (ii) is the packet fragmented
   (iii) what is the size of the data
   (iv) is a checksum is used
   (v) what is the type of service
   (vi) what is the identification number of the packet ?
   (b) Explain ARP process and state different cases in which ARP services are used. **10**

6. (a) Explain fragmentation of IP datagram. 10
   (b) Explain technique used for forwarding IP packet when host has a packet to send or when a router has received packet to be forwarded. 10

7. Write notes on any **four** of the following :– 20
   (a) DNS
   (b) Layer 3 switching
   (c) Telnet
   (d) IP V_6
   (e) FTP.
