

**MCTA-202****M.E./M.Tech. II Semester**

Examination, June 2013

**Advanced Computer Network***Time : Three Hours**Maximum Marks : 70***Note:** Attempt any five questions. All questions carry equal marks.

1. a) Explain the concept of subnet addressing? Illustrate your answer with the help of an example. 7  
b) What are some of the possible services that a link layer protocol can offer to the network layer? Which of these link layer services have corresponding services in IP? In TCP? 7
2. a) Why is an ARP query sent within a broadcast frame? Why is an ARP response sent within a frame with a specific destination MAC address? 7  
b) It has been said that when IPV6 tunnels through IPV4 routers, IPV6 treats the IPV4 tunnels as link layer protocols. Do you agree with this statement? Why or why not? 7
3. a) Describe how a network administrator of an upper-tier ISP can implement policy when configuring BGP. 7  
b) Any implementation of ARP that uses a fixed size cache can fail when used on a network that has many hosts and much ARP traffic. Explain how. 7

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4. a) Why is the UDP checksum separate from the IP checksum? Would you object to protocol that used a single checksum for the complete IP datagram including the UDP message? 7  
b) How does dynamic source routing handle routing? 7

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5. a) What is Domain name system (DNS)? Discuss the services provided by DNS? 7  
b) Describe why an application developer might choose to run an application over UDP rather than TCP. 7
6. a) Explain discovery, registration and tunneling operation in mobile IP. 7  
b) What is DHCP? How does DHCP support dynamic address allocation? 7
7. a) Explain VPN? How VPN interconnects two completely private sites over the global internet with the help of an example. 7  
b) What is address mapping? What protocols are used for address mapping? 7
8. Write short notes :- 14
  - i) Socket programming
  - ii) Servlets
  - iii) Voice & Video over IP
  - iv) CGI scripts.

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