Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA - SEMESTER–V • EXAMINATION – SUMMER • 2014

Subject Code: 650010 Date: 02-06-2014

Subject Name: Advance Networking

Time: 10:30 am - 01:00 pm Total Marks: 70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	**Answer the following questions**	**07**
	1.	Define: Limited Broadcast address	
	2.	What is mask in classless addressing?	
	3.	Explain Port Forwarding.	
	4.	Define Internet Protocol.	
	5.	What is TFTP?	
	6.	What is anonymous FTP?	
	7.	How many bits are there in IPv6 address?	
	(b)	**Do as directed**	
	1.	A host in an organization has an IP address as 205.16.37.39 / 28. What is the first IP address and last IP address of that organization?	**2**
	2.	Explain UDP checksum mechanism.	**2**
	3.	Draw a properly labeled "state transition diagram" for DHCP address Acquisition process.	**2**
	4.	Each host on a TCP/IP internet is assigned a unique _____ bit internet address is a pair of _____ and _____	**1**
Q.2	**(a)**	What is MIME? What are the basic types that can appear in a MIME Content-Type declaration? Explain with their meaning. Also explain MIME multipart messages with example.	**07**
	(b)	What is the advantage of sliding window concept used in TCP? Explain the following terms w.r.t. TCP a. Urgent Pointer b. Window Scaling Option. c. Timeout with RTT calculation	**07**
		OR	
	(b)	Explain three-way handshake for establishing a TCP connection.	**07**
Q.3	**(a)**	(i) Explain DNS caching	**03**
		(ii) Write a short note on NFS.	**04**
	(b)	(i) What is Option Negotiation in TELNET? List few of the TELNET options.	**03**
		(ii) What is persistent connection approach used in HTTP version 1.1.? Give its advantages and disadvantages.	**04**
		OR	
Q.3	**(a)**	(i) Explain the terms w.r.t. DNS a. Pointer Query b. Recursive Resolution c. Iterative Resolution	**03**
		(ii) Explain FTP process model in detail.	**04**
	(b)	(i) What is stateful firewall? Explain state management in stateful firewall.	**03**
		(ii) Explain HTTP negotiation in detail.	**04**

Q.4	**(a)**	(i) Write a short note on VPN	**03**
		(ii) What is ARP? Draw detailed ARP packet format. Display the length of each field clearly.	**04**
	(b)	(i) Explain Loopback Address. Which command uses a loopback address?	**02**
		(ii) Name the ICMP error reporting messages. Explain any one in detail.	**05**

OR

Q.4	**(a)**	(i) Explain ARP cache timeout.	**03**
		(ii) Explain NAT translation table creation.	**04**
	(b)	(i) Explain Next-Hop Forwarding and Default Forwarding in brief.	**02**
		(ii) Name the ICMP query messages. Explain any one in detail.	**05**
Q.5	**(a)**	(i) Explain "options" field in a DHCP packet.	**02**
		(ii) Explain Subnetting. An organization has a block of IP address as 130.34.12.64 / 26. It needs to create 4 subnets, each with equal number of hosts. Explain how those subnets will be created?	**05**
	(b)	(i) Explain UDP Multiplexing and Demultiplexing.	**02**
		(ii) What is the use of Identification, flags and Fragment offset fields in an IPv4 datagram header?	**05**

OR

Q.5	**(a)**	(i) What is direct and indirect delivery of IP datagram?	**04**
		(ii) Explain how Binary Trie Structures are used for classless lookup	**03**
	(b)	(i) Explain Simple Mail Transfer Protocol and Mail Retrieval Protocol.	**07**

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