Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – I • EXAMINATION – SUMMER • 2014

Subject code: 715101N **Date: 13-06-2014**

Subject Name: Network Programming

Time: 02:30 pm - 05:00 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)**	Define protocol. List out six protocols of application layer, and explain any two in detail.	**07**
	(b)	What is signal? Develop a C program to handle SIGINT signal.	**07**
Q.2	**(a)**	Explain TCP connection establishment and connection termination process.	**07**
	(b)	Explain libpcap and libnet libraries in detail.	**07**
		OR	
	(b)	Explain zombie process with appropriate example. Which Linux command would be useful to list out zombie process of the system?	**07**
Q.3	**(a)**	Explain TCP states with diagram.	**07**
	(b)	What is multicasting? How does socket multicasting work? Explain in detail.	**07**
		OR	
Q.3	**(a)**	Differentiate between:	
		i. read() & recv()	**02**
		ii. Little Endian & Big Endian	**05**
	(b)	What is socket? Explain its role over client and server programming. Describe the APIs for UDP communication.	**07**
Q.4	**(a)**	Explain multicast MAC address structure. What will be the destination MAC address if multicasting IP is 224.1.1.1? Explain in detail.	**07**
	(b)	Explain UDP header in detail.	**07**
		OR	
Q.4	**(a)**	When to use UDP instead of TCP? How can you be sure that a UDP message is received by recipient?	**07**
	(b)	Explain External Data Representation (XDR) with suitable example.	**07**
Q.5	**(a)**	Explain in detail:	
		i. inet_addr	**02**
		ii. htons	**03**
		iii. memcpy	**02**
	(b)	Explain in detail:	
		i. FTP	**04**
		ii. Telnet	**03**
		OR	
Q.5	**(a)**	Write a C program to Create 5 processes but not from the common parent. meaning, each child creates a new process.	**07**
	(b)	How to get client's address / host-name from server socket application? Explain with suitable APIs.	**07**

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