Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER– II(New course) • EXAMINATION (Remedial) – WINTER- 2015

Subject Code: 2720213 **Date: 11/12/2015**

Subject Name: Advance Operating System

Time:2:30 pm to 5:00 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)**	Explain in detail about the following functions i) gethostbyname ii) inet_ntoa iii) htons iv) inet_aton	**08**
	(b)	Explain with diagram UNIX system architecture	**06**
Q.2	**(a)**	Explain the following functions with prototype: i) umask ii) chmod iii) fchmod iv) link v) chown vi) mkdir vii) utime	**07**
	(b)	What is a race condition? Write a program for generating race condition and to avoid the race condition.	**07**
		OR	
	(b)	Explain in detail DNS	**07**
Q.3	**(a)**	When to use UDP instead of TCP? How can you be sure that a UDP message is received by recipient?	**07**
	(b)	What is socket? Explain its role over client and server programming. Describe the APIs for UDP communication.	**07**
		OR	
Q.3	**(a)**	Explain TCP connection establishment and connection termination process. Explain in detail about TCP Communication with suitable diagrams. Explain all the system calls used for TCP Communication?	**07**
	(b)	Write a Concurrent server program which uses TCP and display a status message of the Server before call to fork, after fork and after socket closing by parent and child. Write a client to trigger the server operation.	**07**
Q.4	**(a)**	What is signal? Develop a C program to handle SIGINT signal.	**07**
	(b)	Compare wait( ), waitpid( ), wait3( ) & wait4( ) functions	**07**
		OR	
Q.4	**(a)**	Enlist similarity and difference between fork( ) and vfork( ) function.	**07**
	(b)	Enlist the difference between dup and dup2 function	**07**
Q.5	**(a)**	What are inodes in Unix system? Differentiate between hard link and symbolic link.	**08**
	(b)	Explain in detail: i) inet_addr ii) htons iii) memcpy	**06**
		OR	
Q.5	**(a)**	Explain the functions : i) gethostbyname ii) getservbyname iii) getservbyport	**06**
	(b)	Explain the following system calls that a process can use to receive data through a socket: recv() , recvfrom(), recvmsg(). Bring out their differences by giving suitable examples.	**08**