Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA. Sem-III Regular Examination January 2011

Subject code: 630004 Subject Name: Operating System

Date: 06 /01 /2011 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		**Attempt the following**	
	I.	Multiple process running simultaneously on a different processor known as **a.** Multiprogramming **b.** Multiprocessing **c.** Multitasking **d.** Multithreading	**02**
	II.	What is the task of dispatcher? a. Transferring the process from new state to ready state b. Transferring the process from ready state to running state c. Transferring the process from running state to block state d. Transferring the process from block state to ready state	**02**
	III.	State True/False with valid reason in a two lines. a. Zombie state contains preempted process in Unix Process Scheduling. b. Chunks of Memory Known as Pages. c. RAID level 02 applies for redundancy using bit interleaved parity.	**06**
	IV.	Give the full form of following with its definition. ORB, JCL, OPT, HRRN	**04**
Q.2	**(a)**	**I.** Write a short note on Banker's Algorithm with suitable example.	**04**
		II. Write a short not on different types of operating system security threats.	**03**
	(b)	Write a short note on Binary Semaphore with primitives also differentiate the strong semaphore and weak semaphore.	**07**
		OR	
	(b)	Write a short note on different File Organization and Access methods.	**07**
Q.3	**(a)**	What is Memory Management? Write a short note on Buddy System.	**07**
	(b)	What is Processor Scheduling? Write a short note on Round Robin Algorithm in detail.	**07**
		OR	
Q.3	**(a)**	What is Process Management? Write a short note on UNIX SVR4 Process Management.	**07**
	(b)	What is Distribute Message Passing? Explain Object request broker in short with figurative model.	**07**
Q.4	**(a)**	What is Secondary Storage? Explain the File Allocation Methods in detail.	**07**
	(b)	What is Partitioning? Explain Memory Partitioning Techniques.	**07**
		OR	
Q.4	**(a)**	What is Disc Scheduling? Explain different Disc Scheduling Policies in detail.	**07**
	(b)	What is Real-time Operating System? Explain the Characteristics of Real-time Operating Systems in detail.	**07**
Q.5	**(a)**	What is Protection? Which components of the operating system need to be protected at the time of sharing it and how?	**07**
	(b)	What is I/O Communication? Explain I/O Communication Techniques in detail.	**07**
		OR	
Q.5	**(a)**	What is Cluster? Explain different clustering methods in detail.	**07**
	(b)	What is Monitor? Explain the solution to the Bounded-Buffer Producer/Consumer Problem using a Monitor.	**07**

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