Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-IV • EXAMINATION - WINTER • 2014

Subject Code: 140702 Date: 31-12-2014

Subject Name: Operating System

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)	Explain basic services provided by Operating System on bare Hardware machine.	0'	
	(b)		0	
Q.2	(a)	What is the average waiting time & average Turn around times of all processes for FCFS, SJF, non-preemptive Priority and Round Robin(Quantum=1) scheduling:	0'	
		Porcess BurstTime Priority		
		P1 8 5		
		P2 1 1		
		P3 3 2		
		P4 2 4		
		P5 5 3		
		(Assume Small number implies higher priority & All 5 processes have arrived in order P1,P2,P3,P4,P5 all at time=0)		
	(b)	What is Process? Explain Process State Transition Diagram in detail. OR	07	
	(b)	What is System Call in OS? Explain fork() system call to create new process in UNIX OS.	07	
Q.3	(a)	What is IPC? Explain the use of Semaphore to solve Producer-Consumer problem.	07	
	(b)	6 - ago reserving.	07	
		0,1,7,2,3,2,7,1,0,3. How many page faults occur with four page frames and eight pages and the four frames are initially empty in case of FIFO & LRU.		
Q.3	(a)	What is Monitor in IPC? Solve the Bounded buffer problem using Monitor.	07	
	(b)	What is a Deadlock? Describe the conditions that lead to deadlock. How to recover from Deadlock?	07	
Q.4	(a)	Explain virtual memory management with Paging in detail.	07	
	(b)	Explain Banker's Algorithm to avoid deadlock with multiple resources. OR		
Q.4	(a)	Explain following commands in UNIX: 1. chmod 2. grep 3. head & tail 4. Cut	07	
	(b)	Explain How DMA (Direct Memory Access) works.	07	
Q.5	(a)	Explain linked list allocation file implementation technique.	07	
	(b)	Discuss various security threats in File System of OS.	07	
		OD		
	(a) (b) (OR Compare various Disk Arm Scheduling Algorithms. Compare Windows & Unix family Operating Systems.	07	