GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–IV (OLD) EXAMINATION – WINTER 2018

Subject Code:140702   **Date: 10/12/2018**
Subject Name: Operating System
Time: 02:30 PM TO 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)**	What is Operating System? Give the view of OS as Resource Manager.	**07**
	(b)	What is deadlock? Explain the Banker's algorithm for deadlock avoidance.	**07**
Q.2	**(a)**	What is context switching? Explain significance and elements of PCB.	**07**
	(b)	Write short notes on following	**07**
		(i) Contiguous Allocation and Linked List Allocation for File System Implementation.	
		(ii) File Types and File Access (sequential access and random access).	

OR

	(b)	What is Semaphore? Give the implementation of Bounded Buffer Producer Consumer Problem using Semaphore.	**07**
Q.3	**(a)**	Explain various Disk Arm Scheduling Algorithms with illustration.	**07**
	(b)	Explain IPC Problem –Dining Philosopher Problem.	**07**

OR

Q.3	**(a)**	What is critical section? What is Mutual exclusion? Explain Peterson's solution for mutual exclusion problem.	**07**
	(b)	Explain various file attributes and file operations in brief.	**07**
Q.4	**(a)**	Explain the various page replacement strategies.	**07**
	(b)	Explain the following terms:	**07**
		Process, Multithreading, Multitasking, Mutual Exclusion, Turnaround Time, Response Time, Virtual Memory	

OR

Q.4	**(a)**	Explain FCFS and Round Robin process scheduling algorithm with example.	**07**
	(b)	Explain the followings:	**07**
		Use of "inode" in UNIX File System, Direct Memory Access.	
Q.5	**(a)**	Explain different types of operating system.	**07**
	(b)	What is scheduler? Explain queuing diagram representation of process scheduler with figure.	**07**

OR

Q.5	**(a)**	What is Paging? What is Page Table? Explain the conversion of Virtual Address to Physical Address in Paging with example.	**07**
	(b)	Explain the following commands in UNIX: grep, who, man, finger, ls, cat, ps	**07**

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