Seat No.: _____ Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI (OLD) - EXAMINATION – SUMMER 2018

Subject Code:163101 **Date:03/05/2018**

Subject Name:Operating System Design

Time:10:30 AM to 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	**(a)**	Define Operating System. Draw and explain the block diagram of system kernel.	**07**
	(b)	What is File System? Explain Unix file system in detail.	**07**
Q.2	**(a)**	Draw and explain Complete Process State Transition Diagram in details.	**07**
	(b)	Explain various data structures related to process subsystem and file subsystem.	**07**
		OR	
	(b)	Explain how disk blocks are allocated in UNIX with appropriate example.	**07**
Q.3	**(a)**	Define Buffer Catch with merit and demerit.	**07**
	(b)	Describe Structure of Disk Inode? What is the use of Inode. Explain Inode in detail.	**07**
		OR	
Q.3	**(a)**	Explain Scheduling with short, medium and long-term scheduler.	**07**
	(b)	What is procedure for reading & writing disk blocks? Write simple algorithm for the same.	**07**
Q.4	**(a)**	Explain Read and Write System call.	**07**
	(b)	Explain Block Read Ahead algorithm.	**07**
		OR	
Q.4	**(a)**	Explain the unlink system calls with it algorithm	**07**
	(b)	Explain Bread and Breada algorithms.	**07**
Q.5	**(a)**	What is Shell? Explain System Boot and Init process.	**07**
	(b)	Explain the following commands in Unix OS. 1) chmod 2) ls 3) mkdir	**07**
		OR	
Q.5	**(a)**	What is Signals? Explain the handling of Signals by Kernel.	**07**
	(b)	Explain the following commands in Unix OS. 1) rmdir 2) pwd 3) grep	**07**

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