Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI • EXAMINATION – WINTER • 2014

Subject Code: 163101 Date: 08-12-2014

Subject Name: Operating System Design

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)	What do you mean by Operating System? Explain Block diagram of system kernel.	07
	(b)	Define following terms: 1) File descriptor 2) Superblock 3) Delay write 4) Indirect blocks	07
Q.2	(a)	Draw Complete Process State Transition Diagram and Explain	07
	(b)	What is system calls? What is interrupt? How it is handled by OS?	07
		OR	
	(b)	Describe Structure of Disk Inode? What is the use of Inode. Explain Inode in detail.	07
Q.3	(a)	List out all Scenarios the kernel may follow in getblk algorithm to allocate a buffer for a disk block. Explain any two scenario in detail.	07
	(b)	What is buffer cache? Explain Scenarios for retrieval of buffer.	07
		OR	
Q.3	(a)	What is scheduling? Explain short , medium and long term scheduler	07
	(b)	Explain bread and breada algorithms	07
Q.4	(a)	Explain Read() System call	07
	(b)	Discuss structure of Regular files. How Unix System maintain Directories?	07
		OR	
Q.4	(a)	Explain Create() System call	07
	(b)	How Unix System Mounts a File System?	07
Q.5	(a)	Explain Algorithm bmap for Conversion of Byte offset to block number in file system.	07
	(b)	What is Shell? Explain System Boot and Init process	07
		OR	
Q.5	(a)	What are the advantages and disadvantages of the buffer cache?	07
	(b)	Explain fork() System call	07

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