Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA - SEMESTER– III • EXAMINATION – WINTER 2017

Subject Code: 2630004 Date:02-01-2018

Subject Name: Operating Systems

Time:10:30 am to 1:00 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 Process. List and explain the reasons for process creation and termination.	**07**
	(b)	Explain the five state process model and the various queues associated.	**07**
Q.2	**(a)**	Define interrupt and interrupt handling. Explain the instruction cycle with interrupts.	**07**
	(b)	Explain the producer/consumer problem with reference to concurrent processing.	**07**
		OR	
	(b)	Define deadlock with example. Explain deadlock prevention and detection techniques.	**07**
Q.3	**(a)**	What is dynamic partitioning? Explain first-fit, best-fit and next-fit placement algorithms with examples.	**07**
	(b)	What is real-time scheduling? Describe the characteristics of real-time operating systems.	**07**
		OR	
Q.3	**(a)**	What is segmentation? How it differs from paging? Explain the address translation in both the cases.	**07**
	(b)	What is processor scheduling? Explain round-robin scheduling policy with example.	**07**
Q.4	**(a)**	What is disc scheduling? Describe different disc scheduling policies in detail.	**07**
	(b)	Write short notes on (1) DMA (2) File system security	**07**
		OR	
Q.4	**(a)**	What is meant by secondary storage management? Discuss different File allocation methods.	**07**
	(b)	Write short notes on (1) Double buffering (2) File system Architecture	**07**
Q.5	**(a)**	What is client/server architecture? List its applications and discuss different classes of client/server architecture.	**07**
	(b)	List and explain I/O techniques in detail.	**07**
		OR	
Q.5	**(a)**	Define cluster. Explain clustering methods with its advantages and disadvantages.	**07**
	(b)	Explain different RAID levels in detail.	**07**

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