

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA - SEMESTER-III • EXAMINATION – SUMMER • 2014

Subject Code: 630004

Date: 03-06-2014

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) What is the difference between strong and weak semaphores? [02]
(b) What is Preemptive and Nonpreemptive Scheduling Policies? [02]
(c) What are ULTs and KLTs? [02]
(d) What is internal and external fragmentation? [02]
(e) Give Full form for following word [02]
1) SSTP 2) DMA 3) PSW 4) SMP
(f) Explain Buddy System with respect to memory management. [04]

- Q.2** (a) List Reason for process Creation, Suspension and termination. [07]
(b) What conditions are generally associated with the readers/writers problem? [04]
(c) Explain Access Control Structures in file System security. [03]

OR

- (b) What is concurrency? Explain different Unix Concurrency Mechanism. [04]
(c) Explain Remote Procedure Call Mechanism with diagram. [03]

- Q.3** (a) What is process? Explain Process State Transition Diagram with Suspend States. [07]
(b) What is Monitors? Elucidate structure of Monitor. [07]

OR

- Q.3** (a) What is the need of PCB? Explain typical elements of a Process Control Block. [07]
(b) What is the use of Banker's Algorithm? Elaborate of Banker's Algorithm with example. [07]

- Q.4** (a) What do you mean by Memory Management? Explain any one technique for Memory Management. [07]
(b) What do you mean by RAID? Explain Different RAID levels. [07]

OR

- Q.4** (a) What is Paging? Explain Address Translation in a Paging System. [07]
(b) What is the Need of Page Replacement? Explain LRU and OPT Page Replacement Algorithms. [07]

- Q.5** (a) Explain Round Robin Process Scheduling Algorithm with example. [07]
(b) What is Disk Scheduling? Elaborate C-SCAN Disk Scheduling Algorithms. [07]

OR

- Q.5** (a) What is the use of Cluster? Explain different Clustering Methods. [07]
(b) What is the need of File Allocation Methods? Explain Chained File Allocation Methods. [07]
