

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- IVth SEMESTER-EXAMINATION – MAY/JUNE- 2012****Subject code: 140702****Date: 29/05/2012****Subject Name: Operating System****Time: 10:30 am – 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) Explain different types of OS and also Explain different types of tasks done by OS. **07**
 (b) What is process ? What are the different type of states Of any process? Explain different data structures to handle process management. **07**
- Q.2** (a) Compare FIFO & LRU page replacement algorithm **07**
 (b) Explain IPC Problem –Dining Philosopher Problem. **07**
- OR**
- (b) Explain IPC Problem – Readers & Writers Problem. **07**
- Q.3** (a) What is system call? What is interrupt? How it is handled by OS? **07**
 (b) Explain Different RAID levels and also Disk arm scheduling algorithm. **07**
- OR**
- Q.3** (a) What is critical section? What is Mutual exclusion? Explain Peterson's solution for mutual exclusion problem. **07**
 (b) What are the use of device driver & controller in OS? Explain. **07**
- Q.4** (a) What is Virtual Memory? Explain Demand Paging . **07**
 (b) What is Deadlock? Explain Deadlock prevention & Avoidance. **07**
- OR**
- Q.4** (a) Explain Context Switching. Discuss performance evaluation of FCFS(First Come First Serve) & RR (Round Robin) scheduling . **07**
 (b) What is inode? What is boot block? What is Superblock? How they are used to handle file management system in OS? Which methods are used to improve performance of file management system in OS. **07**
- Q.5** (a) Compare Paging with segmentation. **07**
 (b) Explain : Race conditions , Semaphore and Monitor **07**
- OR**
- Q.5** (a) Explain UMA and NUMA multiprocessors. **07**
 (b) Explain functions of Kernel of Unix OS. Also explain various security measures in Unix file system. How keyboards and monitors are represents in Unix file system? **07**
