

GUJARAT TECHNOLOGICAL UNIVERSITY**B.E. Sem-IV Remedial Examination Nov/ Dec. 2010****Subject code: 140702****Subject Name: Operating System****Date: 03 / 12 / 2010****Time: 03.00 pm – 05.30 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) (i) Explain briefly different types of operating systems. **07**
 (ii) Write different operating system services.
- (b) (i) Explain PCB. (ii) Explain thread in brief. **07**
- Q.2** (a) (i) A computer has four page frames. The time of loading, time of last access and the R and M bit for each page given below. **07**
- | Page | Loaded | Last Ref. | R | M |
|------|--------|-----------|---|----|
| 0 | 126 | 280 | 1 | 0 |
| 1 | 230 | 265 | 0 | 01 |
| 2 | 140 | 270 | 0 | 0 |
| 3 | 110 | 285 | 1 | 1 |
- Which page NRU, FIFO, LRU will replace.
 (ii) Explain page table in brief.
- (b) Explain swapping in memory management. **07**
- OR**
- (b) Explain deadlock prevention. **07**
- Q.3** (a) What is priority inversion problem in interprocess communication? How to solve it with semaphore? **07**
- (b) Explain different file system implementation methods. **07**
- OR**
- Q.3** (a) Five batch jobs A to E arrive at same time. They have estimated running times 10, 6, 2, 4 and 8 minutes. Their priorities are 3, 5, 2, 1 and 4 respectively with 5 being highest priority. For each of the following algorithm determine mean process turnaround time. Ignore process swapping overhead. **07**
 Round Robin, Priority Scheduling, FCFS, SJF.
- (b) (i) Explain different file attributes. (ii) Explain different file operations in brief. **07**
- Q.4** (a) (i) Explain 'grep' command in Unix. (ii) Explain 'man' command in Unix. **07**
- (b) Explain directory structure of Unix. **07**
- OR**
- Q.4** (a) (i) Explain 'finger' command in Unix. (ii) Explain 'who' command in Unix. **07**
- (b) Explain System administration commands in Unix. **07**
- Q.5** (a) Explain multiprocessor operating system types in brief. **07**
- (b) (i) Explain domain protection mechanism in brief. **07**
 (ii) Explain kernel structure in UNIX.
- OR**
- Q.5** (a) Explain Distributed operating system in brief. **07**
- (b) (i) What is Access Control list? Explain in brief. **07**
 (ii) Explain operating system structure of windows 2000 in brief.
