24252

B. Tech. 5th Sem.

(Information Technology) VI

Examination – December, 2013

PRINCIPLES OF OPERATING SYSTEM

'F' Scheme

Paper : CSE-301-F

Time : Three hours]   [Maximum Marks : 100

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions with at least *one* question from each section. *Question No. 1 is compulsory.* All questions carry equal marks.

1. Explain the following briefly: 4 × 5

   (a) TLB

   (b) Thrashing

   (c) Belady's Anamoly

   (d) Batch OS

SECTION – A

2. (a) Differentiate between multiprogramming and multitasking. 4

(b) Discuss the various operating system programs. 8

(c) Discuss the architecture of operating system. 8

3. Define the following terms : 20

(a) Dispatcher

(b) Long and short term scheduler

(c) PCB

(d) CPU scheduling criteria

SECTION – B

4. (a) Discuss the hardware support required to support demand paging. 10

(b) Discuss the situations under which the MFU page replacement algorithm generates fewer page faults than LRU algorithm. Also discuss under what circumstances the opposite holds. 10

5. (a) Explain the concept of virtual memory and how it is obtained by demand paging and segmentation? 12

(b) Explain the process of handling page faults. 8

SECTION – C

6. (a) Define semaphore. How can semaphore be used to enforce mutual exclusion? Explain with example. **10**

(b) What do you mean by deadlock? How can we handle a deadlock if it occurs? **10**

7. (a) Discuss the various features of distributed file system in detail. **10**

(b) Explain the concept of booting from disk and bad block recovery in disk management. **10**

SECTION – D

8. (a) Explain the life cycle of transferring I/O requests to hardware operations. **12**

(b) Define the terms - Buffering and Polling. **8**

9. (a) Discuss the UNIX system calls for process management. **10**

(b) Explain the following: **10**

(i) Shell interpreter.

(ii) DMA