2004 CENTRE FOR DEVELOPMENT OF ADVANCED COMPUTING(C-DAC) M.C.A

END-TERM EXAMINATION
Third Semester [MCA] - DECEMBER 2004

Paper Code: MCA 201

OPERATING SYSTEM

Time: 3 Hours
Marks: 70

Q. 1.

(a) What are the different functionalities of an operating system? Explain. 6

(b) How protection is provided by the operating system at the file system level? Explain different protection mechanism. 6

Q. 2.

(a) What is a process? How it differs from a program? Differentiate between a multiprocessing system and a multiprocessor system. 6

(b) Explain the purpose of schedulers. With a neat diagram explain different types of schedulers. 6

Q. 3.

(a) What is a directory? Explain different directory structure. 6

(b) Explain the linked and indexed memory allocation technique for secondary storage management. How file space is allocated in Unix Operating system? 6

Q. 4.

(a) Differentiate between buffering and spooling. 4

(b) Explain pages segmentation memory management technique. What special hardware are required for such a system? 8

Q. 5.

(a) What is deadlock? Explain four necessary condition for a deadlock to occur. 6

(b) What is thrashing? Why is it required? 6

Q. 6.

(a) What do you mean by fragmentation? How the fragmentation problem can be solved? 6

(b) What is device controller? State some advantages of placing functionality in a device controller rather than in the kernel. 6

Q. 7.

(a) What are the various algorithms for process scheduling? Explain each of them. 8

(b) What are concurrent and cooperating processes? Explain. 4

Q. 8. Write short notes on each of the following :-

12
(a) Segmentation
(b) Page Fault
(c) Virtual Memory