

This question paper contains 2 printed pages.

6140

Your Roll No.....

MCA / IV Sem.

J

CS - 405 - OPERATING SYSTEM : CASE STUDIES

(Admissions of 2007 & onwards)

Time 3 hours

Maximum Marks 60

*(Write your Roll No on the top immediately
on receipt of this question paper)*

Attempt all questions.

Part of a question must be answered together.

1. a) How does UNIX assign a disk inode to a newly created file? 05
- b) Compare open () and dup () system calls w.r.t. file system in UNIX 02
- c) Distinguish between named and un-named pipes in UNIX 03
2. a) Describe main kernel data structures that describe a state of a process. 05
- b) Describe static and dynamic components of context of a process 04
3. What is link () system call ? Describe algorithm underlying the system call link Does process unlock source file inode after incrementing its link count. If so, why ? 06

P.T.O

- 4 a) What is purpose of fork () and exec () system calls? 02
- b) List sequence of operations performed by kernel for fork () system call 03
- c) What is the advantage of having separate regions for text and data ? 02
- 5 Compare swapping with demand paging. Explain four major data structures to support low-level memory management function. 06
- 6 a) How can processes exercise crude control of their scheduling priority? 04
- b) How does kernel handle signals in context of a process that receives them ? 05
- c) Discuss an algorithm to duplicate region of a process. Give an example of system call using it. 04
- 7 a) What is the purpose of system calls and how do system calls relate to O S and to concept of dual mode (kernel & user) operation. 03
- b) Give flow for UNIX system booting and initialization. 03
- c) How is file [given a path name], opened by a process ? Take eg ; “/etc/passwd”. 03