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 underlaying 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*