

III B.Tech. II Semester Regular Examinations, April/May -2005
ADVANCED UNIX PROGRAMMING
(Common to Computer Science & Engineering, Information Technology
and Computer Science & Systems Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Explain the two methods of altering file access permissions of a file.
(b) What are the main functions of kernel? Explain each of them in detail.
2. Explain about the control structures used in shell programming with suitable examples.
3. Explain the following functions with syntax:
 - (a) stat()
 - (b) read()
 - (c) open()
 - (d) fstat()
4. What is meant by a process? Explain any four process related system calls with syntax.
5. (a) Write in detail about the interrupted system calls.
(b) Write about the kill and raise functions
6. (a) What is region lock? What are the rules about the specification of the region to be locked or unlocked?
(b) Write about file locking versus Record Locking.
7. Explain in detail about the System V IPCS.
8. (a) Explain, "How to control a shared-memory segment".
(b) Explain, "How to attach and detach a shared memory segment".

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1. (a) Explain the two methods of altering file access permissions of a file.
(b) What are the main functions of kernel? Explain each of them in detail.
2. Explain the following commands with syntax
 - (a) head
 - (b) grep
 - (c) cut
 - (d) paste
3. Explain in detail about the following:
 - (a) Directories
 - (b) System calls
4. How to create a new process? Explain in detail about fork () function.
5. (a) Explain about “sending signals using system calls”.
(b) Explain about “Avoiding signal races”
6. (a) With an example, Explain about the setting a lock.
(b) With an example, Explain about clearing a lock.
7. (a) Draw and explain about the “Kernel data structure for a semaphore set”.
(b) Write about the semaphore adjustment on “exit”. Explain about the importance of SEM_UNDO
8. (a) Draw & Explain about the “Message Queue structures in the Kernel”
(b) With an example, Explain in detail about the process of Reading a Message from the Queue.

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1. What is an operating system? Explain the main functions of UNIX Operating system.
2. Explain the following commands with syntax
 - (a) fgrep
 - (b) egrep
 - (c) paste
 - (d) tee
3. Write and explain a function that sets one or more of the file status flags for a descriptor.
4. Write short notes on the following:
 - (a) Process termination
 - (b) Zombie process
5.
 - (a) Write about the slow system calls.
 - (b) Write about abort and system functions
6. Explain about the three types of UNIX file system implementation “that can be exploited to provide a type of locking”.
7.
 - (a) Explain about the “Effect of O-NDELAY flag on PIPEs and FIFOs”.
 - (b) Explain, How to obtain the list of login names in sorted order into the file “usersinfo.dat” using pipes
8.
 - (a) Draw & Explain about the “Message Queue structures in the Kernel”
 - (b) With an example, Explain in detail about the process of Reading a Message from the Queue.

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1. Explain the following commands with syntax
 - (a) pwd
 - (b) mkdir
 - (c) cp
 - (d) mv
2. Write in detail about the following
 - (a) text processing utilities
 - (b) backup utilities
3. Define system call. Explain in detail about the working and syntax of file structure related system calls.
4. Explain the following system calls with syntax:
 - (a) exec()
 - (b) fork()
 - (c) system()
 - (d) wait()
5.
 - (a) Write about the slow system calls.
 - (b) Write about abort and system functions
6.
 - (a) Explain in detail about the requirements of file locking mechanism.
 - (b) With an example, Explain about the setting a lock.
7.
 - (a) What are the named pipes? Explain in detail.
 - (b) Explain, in detail about the client - server communication using FIFOS
8.
 - (a) Draw & Explain about the “Message Queue structures in the Kernel”
 - (b) With an example, Explain in detail about the process of Reading a Message from the Queue.
