

**III B.Tech II Semester Supplementary Examinations,
November/December 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. Explain the following commands with syntax

- (a) wc
- (b) umask
- (c) ulimit
- (d) mount

[4x4=16]

2. Explain the following commands with syntax

- (a) cat
- (b) tail
- (c) head
- (d) uniq

[4x4=16]

3. Write a program to a single command-line argument that specifies a file descriptor and prints a description of the file flags for that descriptor [16]

4. Write a program that calls fork and has the child create a new session. Verify that the child becomes a process group leader, and that the child no longer has a controlling terminal. [16]

5. (a) Write about the “disposition” of the signal.

(b) Write about any four “Signals” [8+8]

6. (a) Write a function to test for a locking condition.

(b) Write about Dead lock. [8+8]

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+8]

8. (a) Explain about “shmget” and “shmat” system calls.

(b) Explain, How to place “Data in shared memory”. [8+8]

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1. Explain the following commands with syntax
 - (a) ftp
 - (b) date
 - (c) arp
 - (d) rlogin [4x4=16]
2. (a) What are the different types of arithmetic operators used in shell programming. [8]
(b) Define shell. What are the main features of shell programming language[3+5]
3. Explain in detail about the following:
 - (a) File sharing
 - (b) Unix file structure [8+8]
4. Write in detail about the following:
 - (a) Process structure
 - (b) Zombie process [8+8]
5. (a) What is signal handler? Explain how to install a signal Handler? [3+5]
(b) Write in detail about “Reliable signal Handling”. [8]
6. (a) What is region lock? What are the rules about the specification of the region to be locked or unlocked? [3+5]
(b) Write about file locking versus Record Locking. [8]
7. (a) Draw and explain about the “Kernel data structure for a semaphore set”. [8]
(b) What is the importance of “semctl” system call. Explain in detail. [3+5]
8. (a) Explain, How to place “Data in shared memory”. [8]
(b) What is the use of destroying a shared memory segment? Explain the process of “destroying a shared memory segment”. [3+5]

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1. Explain the following commands with syntax
 - (a) ftp
 - (b) date
 - (c) arp
 - (d) rlogin

[4x4=16]
2. What is the purpose of Stream editor? Explain which option should be used to place the contents of a file f1 after line.

[4+12]
3. Explain in detail about the following:
 - (a) File sharing
 - (b) Unix file structure

[8+8]
4.
 - (a) Briefly explain about Zombie process.
 - (b) Write in detail about process structure.

[8+8]
5.
 - (a) Write about the “disposition” of the signal.
 - (b) Write about any four “Signals”

[8+8]
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.

[3+5]
[8]
7.
 - (a) Explain, “How do you multiplex, multiple writers to the same pipe”.
 - (b) Explain about simple semaphore operation.

[8+8]
8.
 - (a) Explain, “How to control a shared-memory segment”.
 - (b) Explain, “How to attach and detach a shared memory segment”.

[8]
[4+4]

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1. (a) Explain the two methods of altering file access permissions of a file. [4+4=8]
(b) What are the main functions of kernel? Explain each of them in detail. [3+5]
2. Explain the following commands with syntax
 - (a) fgrep
 - (b) egrep
 - (c) paste
 - (d) tee[4x4=16]
3. Explain the following system calls with syntax:
 - (a) chmod()
 - (b) chown()
 - (c) unlink()
 - (d) link()[4x4=16]
4. Write short notes on the following:
 - (a) Process control
 - (b) Process identifiers[8+8]
5. (a) What are the phases in signaling process? Explain what is meant by the lifetime of a signal. [3+5]
(b) What is meant by signal catching function? What are the advantages of signal function [3+5]
6. (a) Write about file locking versus Record Locking. [8]
(b) With an example, Explain about clearing a lock. [3+5]
7. (a) Draw and explain about the “Kernel data structure for a semaphore set”. [8]
(b) Write about the semaphore adjustment on “exit”. Explain about the importance of SEM_UNDO [4+4]
8. (a) With an example, Explain in detail about the process of writing Messages on to a Queue. [8]

(b) Explain about the following system calls

i. msgrev

ii. msgetl

[4+4]
