	FINALTERM EXAMINATION SPRING 2006 CS604 - OPERATING SYSTEMS (Session - 1)	Marks: 100 Time: 120min

StudentID/LoginID: _____

Student Name: _____

Center Name/Code: _____

Exam Date: Friday, August 18, 2006

Please read the following instructions carefully before attempting any question:

1. **This examination is closed book, closed notes, closed neighbors.**
2. **Answer all questions.**
   a. **There is no choice.**
   b. **You will have to answer all questions correctly in this examination to get the maximum possible marks.**
3. **Do not ask any questions about the contents of this examination from anyone.**
   a. **If you think that there is something wrong with any of the questions, attempt it to the best of your understanding.**
   b. **If you believe that some essential piece of information is missing, make an appropriate assumption and use it to solve the problem.**
4. **Examination also consists of multiple-choice questions. Choose only one choice as your answer.**
   a. **If you believe that two (or more) of the choices are the correct ones for a particular question, choose the best one.**
   b. **On the other hand, if you believe that all of the choices provided for a particular question are the wrong ones, select the one that appears to you as being the least wrong.**

****WARNING: Please note that Virtual University takes serious note of unfair means. Anyone found involved in cheating will get an `F` grade in this**

course.

For Teacher's use only											
Question	1	2	3	4	5	6	7	8	9	10	Total
Marks											

Question No: 1 (Marks: 20)

a) Name six inter-process communication tools available in UNIX/Linux? (6)

b) Clearly state the progress condition in the context of solutions for the critical section problem. (5)

c) What is logical address, describe its two parts. (4)

d) What is Virtual Memory? (5)

Question No: 2 (Marks: 20)

1. Given memory partitions of 100K, 600K, 200K, 300K, and 500K (in order), how would each of the First-fit, Best-fit, and Worst-fit algorithms place processes of 409K, 236K, 125K, and 514K (in order)? (12)

2. Also define First-fit, Best-fit, and Worst-fit algorithms. (6)

3. Which algorithm makes the most efficient use of memory? (2)

Question No: 3 (Marks: 20)

Consider the following snapshot of a system:

	Allocation				Max				Available			
	A	B	C	D	A	B	C	D	A	B	C	D
P0	0	1	1	0	0	5	1	3	1	3	2	2
P1	1	0	0	0	1	2	5	2				
P2	1	0	5	2	2	0	5	2				
P3	0	1	3	1	0	2	5	2				
P4	0	0	1	2	0	3	5	3				

Answer the following questions using the banker's algorithm:

(a) What is the content of the matrix Need? (10)
(b) Is the system in a safe state? (5)

(c) If a request from process P1 arrives for (0, 2, 2, 1), can the request be granted immediately? (5)

Question No: 4 (Marks: 20)

What could be the possible conditions, which can ensure that a deadlock will not occur? Explain.

Question No: 5 (Marks: 10)

Write a note on how sharing of files is done on multi user systems? Give five different ways.

Question No: 6 (Marks: 2) - Please choose one

A system call

- *Is an entry point into the kernel code*
- *Allows a program to request a kernel service*
- *Is a technique to protect I/O devices and other system resources*
- *All of the these*

Question No: 7 (Marks: 2) - Please choose one

Logical address is generated by,

- *CPU*
- *Compiler*
- *Hard disk*
- *None of the these*

Question No: 8 (Marks: 2) - Please choose one

Operating system is manages the use of hardware among the various application programs for the users.

- *True*
- *False*

Question No: 9 (Marks: 2) - Please choose one

In shortest job first algorithm CPU schedule process according to the,

- *Priority wise*
- *CPU Burst*
- *Distribute CPU resources equally among all processes*
- *All of these*

Question No: 10 (Marks: 2) - Please choose one

Kernel means

- *The parts of the OS code concerned with security*
- *Architecture dependent parts of the OS code*
- *The entire software shipped as OS by the manufacturer*
- *Program running at all times on the computer*