University of Swaziland

Faculty of Science
Department of Computer Science

Final Examination, 2005

Title of Paper: Operating Systems

Course Number: CS442

Time Allowed: Three (3) hours

Instruction: Answer all questions

Special Requirement: none

This examination paper should not be opened until permission has been granted by the invigilator.

1. [15]
Bochs has been set-up on a PC for your use. To what uses can it be put? Using one of your uses, explain the steps needed to get Bochs to work.

2. [32]
a) Explain, with suitable diagrams, the lost update problem.
b) Explain a technique that avoids this problem.
c) Give, in pseudo code and in adequate detail, an implementation of this technique to the lost update problem.

3. [25]
Give the complete state diagram for:
a) the First Come First Served scheduling algorithm
b) the Shortest Job First scheduling algorithm.

4. [20]
I/O devices can be described under: input function, output function, block device and character device. Reproduce the table below and complete it, justifying your answers where necessary.

	input function	output function	block device	character device
keyboard				
HDD				
floppy				
Mag Tape				
CDROM				

5. [10]
What are the meanings of these terms in the context of the ISO9660 file system?
a) little endian
b) primary volume descriptor
c) session

End of examination paper