Comp 4735 Quiz 2 (Practice)   Name:_____Student #:_____Set:_____

1) Which of the following information is stored in the process table or process control block? (*select all correct answers*)
   a) handles for open files
   b) process ID
   c) process state
   d) program code (binary)
   e) program data
   f) stack address

2) A modern OS allows a process to access the entre address space?
   a) only when the CPU is running in user mode
   b) only when the CPU is running in kernel mode
   c) any time, memory access does not depend on CPU Processor Mode
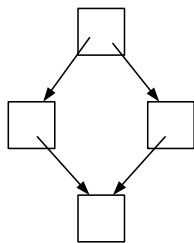   d) never, there is no processor mode that allows access to the entire address space

figure 1

3) A file system typically allows a file to be referenced from multiple directories, as shown in figure 1?
   a) True
   b) False

   Justification: _____

   _____

   Note: provide a short justification for your answer only if you answer 'false'.

4) Which of the following devices are accessed through a block special file on a Unix system? (*select all correct answers*)
   a) cpu
   b) disk drive
   c) laser printer
   d) lcd monitor
   e) tape drive

5) A trap table contains (*select one answer*):
   a) Addresses of programs that make use of privileged instructions
   b) Flags to indicate if a process is running in user mode or supervisor mode
   c) Trusted code that is only executed in supervisor mode
   d) All of the above
   e) None of the above

6) Arrange the following steps in the order that they occur when an application program makes a **read(device,buffer,nbytes)** system call. *Write your answer (eg: d c b a e) in the answer box.*

   a) a device driver reads data from the input device
   b) the processor is switched from user mode to supervisor mode
   c) the Processor Mode bit is reset to indicate user mode
   d) the trusted system call code is dispatched via the trap table
   e) the user library code executes the TRAP instruction

7) Which of the following Operating System design strategies organizes the operating system into a hierarchy of layers?
   a) client-server model
   b) exokernels
   c) layered systems
   d) microkernels
   e) monolithic systems
   f) virtual machines

8) Consider the code shown below. How many times is the message "I am a child" printed when this code is executed?

```
main {
   int i;
   int pid;
   for (i=0; i<2; i++) {
      pid = fork();
      if(pid == 0)
         printf("I am a child. \n", pid);
      else
         printf("I am process %d\n", pid);
   }
}
```

9) Which one of the following Unix system calls is roughly equivalent to the Win32 call SetFilePointer?
   a) stat
   b) sfptr
   c) lseek
   d) fork

10) Consider the command: **grep main *.c | sort | wc -l**

   When this command is executed from a Linux command line, three processes area created. The processes utilise inter-process communication (IPC) to share information with each other.
   a) True
   b) False

   Justification: _____

   _____

   Note: provide a short justification for your answer only if you answer 'false'.