Quiz 1 Questions CSCI 3753

1. Which of the following is NOT the responsibility of the OS?
    a. Process management
    b. Memory management
    c. File System
    d. Compiling a Program
    e. Device Management

    Answer: d

2. Switching CPU from one running program to another is called a _____

    Answer: Context Switch
3. In _____ multitasking, OS forces programs to give up CPU (all modern OSs use this)
    a. Cooperative
    b. Preemptive

    Answer: b

4. What is the trusted software module that supports the correct operation of all other software, and is considered the core part of the OS?

    Answer: Kernel

5. What program locates the kernel, loads it into main memory, and starts its execution?

    Answer: bootstrap program

6. What class of exception in an x86 systems is a System call from the user space?
    a. Fault
    b. Abort
    c. Interrupt
    d. Trap

    Answer: d

7. Which Processor mode is dignified by the mode bit = 0 and allows processor to execute every instruction available in the instruction set?
    a. Supervisor mode
    b. User mode

    Answer: a

8. _____ support the device system call interface functions open, read, write, etc. for that device

    Answer: Device Drivers

9. What is the difference between Blocking vs non-blocking I/O system calls?

a. Blocking I/O system calls return immediately, while non-blocking I/O system calls put processes on a wait queue until I/O completes
b. Blocking I/O system calls put processes on a wait queue until I/O completes, while non-blocking I/O system calls return immediately
c. Blocking I/O system calls are synchronous, while non-blocking I/O system calls are asynchronous
d. Both b and c

Answer: d

10. There are 3 Device Controller states that are dignified by two flags: BUSY and DONE. The three states are Idle, working, and finished. What are the values of the two flag bits when the device controller is in Working state?
    a. BUSY=0, DONE=0
    b. BUSY=1, DONE=0
    c. BUSY=0, DONE=1
    d. BUSY=1, DONE=1

    Answer: b

Quiz 2 Questions CSCI 3753

Total **10** Questions Time allocated: 10 minutes

1. What does the proc file system or /proc directory contain?

a. Contains the special device files for all the devices.
b. Represent the current state of the kernel and virtual files.
c. Contains the executable (i.e., ready to run) programs that must be available in order to attain minimal functionality for the purposes of booting (i.e., starting) and repairing a system.
d. Contains kernel modules and those shared library images
e. All of above

Answer: B

2. _____ function can be used to print messages in the kernel.

Answer: printk

3. _____is a simple and efficient mechanism to add new functionalities in the kernel.

Answer: LKM

4. [TRUE or FALSE?] A process is a software program that consist of a sequence of code instructions and data stored on disk.

Answer: FALSE

5. [TRUE or FALSE?] When loading executable object files, OS allocates a stack and heap to the application in addition to code and global data.

Answer: TRUE

6. OS maintains a _____ containing one entry for every process in the system, and this entry stores the complete state of the corresponding process.

Answer: PCB table

7. Which of these statements are true of the fork( ) command?

a. A new process is created that is a complete copy of the process that executed fork( ).
b. fork() returns zero in the new process that is created.
c. The new process that is created starts its execution at the instruction immediately following the fork ( ) statement.
d. All of the above.

Answer: D

8. [TRUE or FALSE?] An execl( ) instruction in a process must be preceded by a fork( ) instruction.

Answer: FALSE

9. Which of the following statements is true about threads?

a. You need thread support in OS kernel to implement user level threads.
b. User level thread libraries typically provide preemptive multitasking.
c. Different threads with in the same process share code, data and stack.
d. Threads allow programmers to have multiple logical flow of execution in their programs.
Answer: D

10. [TRUE or FALSE?] A piece of code is considered thread-safe if it functions correctly during concurrent execution by multiple threads.

Answer: TRUE

CSCI 3753 quiz 3 questions

11. Which of the following is not a form of inter-process communication (IPC)?
    a. IPC via shared memory
    b. IPC via I/O
    c. IPC via Message Passing
    d. IPC via Pipes

    Answer: b

12. What does the following POSIX API call do in regards to shared memory: *shmid = shmget(key name, size, flags) ?*
    a. Attach a shared memory segment to a processes address space
    b. Modifies control information and permissions related to a shared memory segment
    c. Removes a shared memory segment
    d. Creates a shared memory segment

    Answer: d

13. Which of the following is true about IPC Message Passing?
    a. IPC message passing is faster than IPC via shared memory because it is implemented with system calls.
    b. The basic primitive calls send() and receive() can only be blocking/synchronous
    c. IPC message passing is slower than IPC via shared memory because it is implemented with system calls.
    d. IPC Message Passing requires synchronization
    e. All of above

    Answer: c

14. Multiple processes/threads executing at the same time accessing a shared resource is called _____
    Answer: Concurrency

15. Situations when two or more processes or threads are accessing a shared resource, and the final result depends on which process runs precisely when are called
    a. Critical sections
    b. Concurrency
    c. Race conditions
    d. Synchronization
    e. None of above

    Answer: c

16. The part of the program where a shared resource is accessed is called _____
    Answer: Critical section

17. Which of the following is an abstract data type that, apart from initialization, is accessed only through two standard atomic operations: wait() and signal()?
    a. Test-and-set
    b. Pthread
    c. Semaphore
    d. Deadlock

    Answer: c

18. What type of classic synchronization problem represents a situation that can occur in a large community of processes that share a large pool of resources?
    a. Producer-Consumer
    b. Readers-Writers
    c. Dining Philosophers problem

    Answer c

19. Which of the following Pthread Condition Variable calls will block a thread and release mutex before blocking?
    a. pthread_cond_signal()
    b. pthread_cond_broadcast()
    c. pthread_cond_init()
    d. pthread_cond_wait()

    Answer d

20. Monitors are Abstract data types similar to C++ classes that are a collection of functions, variables, and data structures. At most, how many processes may be active at any time in a monitor?
    Answer: 1