Quiz 1

Return to Assessment List

Part 1 of 2 4.0 / 4.0 Points

Question 1 of 5 1.0

Which storage medium certain process data is stored on does not influence process speed

✔ ◯ True
◉ False

Answer Key: False

Question 2 of 5 1.0

Main memory is an example of Nonvolatile storage (NVS)

✔ ◯ True
◉ False

Answer Key: False

Question 3 of 5 1.0

Windows has been used as a desktop operating system only

✔ ◯ True
◉ False

Answer Key: False

Question 4 of 5 1.0

A **process** is, by definition, a **program in execution**

✔ ◉ True
◯ False

Answer Key: True

Part 2 of 2 1.0 / 1.0 Points

Question 5 of 5 1.0

If an application fails, the operating system can sometimes generate a

✔ ◉ A. Core dump
◯ B. Application dump
◯ C. Crash dump
◯ D. File-system dump

Answer Key: A

Quiz 2

Return to Assessment List

Part 1 of 3 1.0 / 1.0 Points

Question 1 of 5 1.0

1.0 Point

An area of memory containing process information such as process state, CPU registers, I/O status information, etc. is known as a

- A. Process Status File
- B. CPU Registry
- C. CPU Control Block
- ✔ D. Process Control Block

Answer Key: D

Part 2 of 3 1.0 / 1.0 Points

Question 2 of 5 1.0

1.0 Point

A context switch consumes CPU time

- ✔ True
- False

Answer Key: True

Part 3 of 3 3.0 / 3.0 Points

Question 3 of 5 1.0

1.0 Point

A parent process must wait for its child processes to finish before it can execute instructions.

- ✔ True
- False

Answer Key: False

Question 4 of 5 1.0

1.0 Point

If a program declares a variable before a `fork()`, the child and the parent can communicate with one another using that variable.

- ✔ True
- False

Answer Key: False

Question 5 of 5 1.0

1.0 Point

A parent and child process always share the same block of memory

- ✔ True
- False

Answer Key: False

Quiz 3

Return to Assessment List

Part 1 of 2 2.0 / 2.0 Points

Question 1 of 5 1.0

Message passing is typically faster than shared memory.

- ○ True
- ✔ ◉ False

Answer Key: False

Question 2 of 5 1.0

Which of the following is a reason why two processes may want to cooperate

- ○ A. Speed
- ✔ ◉ B. All of these
- ○ C. Convenience
- ○ D. Sharing Information

Answer Key: B

Part 2 of 2 2.0 / 3.0 Points

Question 3 of 5 0.0

Unlike forking, if the "parent" thread of a multithreaded process exits, all of its "child" threads will also exit.

- ○ True
- ✖ ◉ False

Answer Key: True

Feedback:

We use `pthread_join()` to ensure any "child" threads are not unexpectedly "cutoff"

Question 4 of 5 1.0

If a process has multiple threads and one of the threads calls `fork()`, the child process will also be multithreaded

- ✔ ○ True
- ◉ False

Answer Key: False

Question 5 of 5 1.0

In a one-to-one multithreading model, the developer can use only single-threading.

- ✔ ○ True
- ◉ False

Answer Key: False

Quiz 4

Question 1 of 5 0.0

1.0 Points

Context switching is managed by the

- ○ A. Dispatcher
- ○ B. Switcher
- ○ C. CPU
- ✖ ◉ D. Scheduler

Answer Key: A

Part 2 of 2 3.0 / 4.0 Points

Question 2 of 5 1.0

1.0 Points

Consider the following processes in the ready queue in the following order with the following CPU burst times

Process	Burst time (milliseconds)
P1	15
P2	2
P3	3

Match the following scheduling algorithms with the following order of processes

A. P2, P3, P1
B. P3, P2, P1
C. P1, P2, P3
D. P1, P2, P3, P1

- ✔ C 1. FCFS
- ✔ A 2. SJF
- ✔ B 3. LCFS
- ✔ D 4. RR (Quantum 10)

Answer Key: 1:C, 2:A, 3:B, 4:D

Question 3 of 5 0.0

1.0 Points

In Round-Robin CPU scheduling, if there are 10 processes in the ready queue and the time quantum is 3ms, then no process waits more than

- ○ A. 27ms
- ✖ ◉ B. 30ms
- ○ C. 20ms
- ○ D. None of these

Answer Key: A

Question 4 of 5 1.0

1.0 Points

With a Multilevel Feedback Queue scheduling algorithm, once the scheduler has placed the process in a queue, it could be moved to a different queue later.

- ✔ ◉ True
- ○ False

Answer Key: True

Question 5 of 5 1.0

1.0 Points

One drawback to Priority scheduling is

- ○ A. Longer average waiting time compared to most other scheduling algorithms
- ✔ ◉ B. The potential for starvation
- ○ C. All of these
- ○ D. Process priority cannot change

Answer Key: B

Quiz 5

Return to Assessment List

Part 1 of 2 1.0 / 1.0 Points

Question 1 of 5 | 1.0

1.0 Points

To select a process to run in a multiprocessor architecture, the scheduler will assign processes to a core from a

- ✔ (A) A. Either a common or a private ready queue is possible
- ( ) B. Common ready queue
- ( ) C. Private ready queue

Answer Key: A

Part 2 of 2 3.0 / 4.0 Points

Question 2 of 5 | 0.0

1.0 Points

Which of the following is not a necessary criterion for a solution to the critical section problem.

- ( ) A. All processes with a critical section must employ mutual exclusion.
- ✖ (B) B. If the shared resources is available for use, any process that wants to use it can secure the resource and enter its critical section.
- ( ) C. A process may not prevent other processes from ever entering their critical section.
- ( ) D. All processes that wish to use a shared resource must have an equal chance of obtaining the shared resource.

Answer Key: D

Feedback: Fairness is not a guarantee. Some processes may just have higher priority to a resource than others and therefore are more likely to obtain the shared resource.

Question 3 of 5 | 1.0

1.0 Points

Peterson's solution is a common strategy employed by modern operating systems to solve the critical section problem.

- ( ) True
- ✔ (False) False

Answer Key: False

Question 4 of 5 | 1.0

1.0 Points

A semaphore can be implemented as a mutex lock

- ( ) True
- ✔ (False) False

Answer Key: False

Question 5 of 5 | 1.0

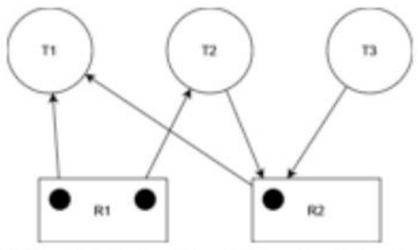
1.0 Points

A common approach used by most modern operating systems to manage process synchronization is to temporarily disable interrupts.

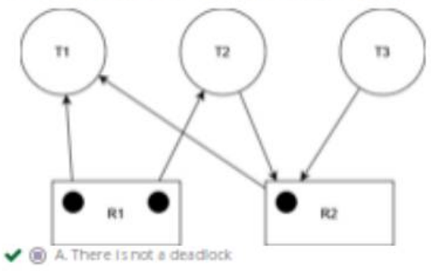
- ( ) True
- ✔ (False) False

Answer Key: False

Consider the following resource allocation graph:



Which of the following statement s is true about this graph



✔ (●) A. There is not a deadlock

( ) B. There is a deadlock and removing T3 would remove a deadlock

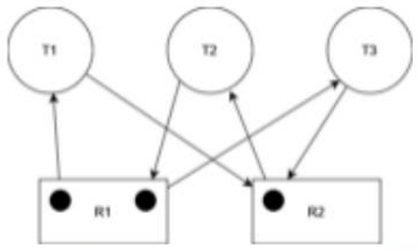
( ) C. There is a deadlock and removing T1, T2, or T3 would remove a deadlock

( ) D. There is a deadlock and removing T1 would remove a deadlock

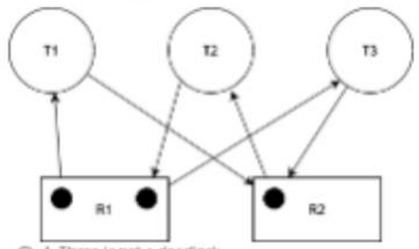
Answer Key: A

Question 2 of 5 0.0

Consider the following resource allocation graph:



Which of the following statement s is true about this graph



( ) A. There is not a deadlock

( ) B. There is a deadlock and only removing T1 would remove a deadlock

( ) C. There is a deadlock and removing T1, T2, or T3 would remove a deadlock

✖ (●) D. There is a deadlock and only removing T3 would remove a deadlock

Answer Key: C

Question 3 of 5 0.0

A deadlock occurs when at least one of the following four conditions occur:

1. A resource is held by a thread
2. A thread is waiting for a resource to be available
3. A thread holding a resource must release the resource voluntarily
4. There is a circular wait amongst two or more threads

✖ (●) True

( ) False

Answer Key: False

Feedback:

A deadlock occurs when **all** of these conditions are met at the same time

Question 4 of 5 0.0

Most modern operating system employ which strategy to deal with deadlocks

( ) A. Do nothing to address the problem of deadlocks

( ) B. Allow deadlocks to occur but employ strategies to keep them to a minimum

( ) C. Allow deadlocks to occur but employ strategies to detect when they occur and recover accordingly

✖ (●) D. Stop deadlocks from ever occurring

Answer Key: A

Question 5 of 5 1.0

If an operating system wishes to prevent a deadlock, the easiest characteristic of a deadlock to prevent is mutual exclusion.

✔ ( ) True

(●) False

Answer Key: False