CSPB 3753 - Fall 2024 - Knox - Operating Systems

Started on	Monday, 16 September 2024, 5:29 PM
State	Finished
Completed on	Monday, 16 September 2024, 5:35 PM
Time taken	5 mins 16 secs
Marks	20/20
Grade	**10** out of 10 (**100**%)

Question **1**

Correct

Mark 1 out of 1

Why are threads called lightweight processes?

Select one:

- a. threads get blown away by process efficiency
- b. threads do not require as many OS resources as a process ✔
- c. threads are less powerful than a process
- d. threads bind together to become a process

Your answer is correct.

The correct answer is: threads do not require as many OS resources as a process

Question **2**

Correct

Mark 1 out of 1

What is shared between threads of a process?

Select one:

- a. registers, code, data
- b. code, data, heap ✔
- c. code, data, heap, stack
- d. registers, process control block

Your answer is correct.

The correct answer is: code, data, heap

Question **3**

Correct

Mark 2 out of 2

Why are multi-threads used over multi-processes?

Select one or more:

- [x] a. Threads use up less memory ✔
- [x] b. Some tasks allow parallelization ✔
- [ ] c. Threads do not have fault isolation
- [x] d. Threads have faster context switching ✔
- [ ] e. Some tasks are sequential
- [ ] f. Writing thread safe code is easy

Your answer is correct.

The correct answers are: Threads have faster context switching, Threads use up less memory, Some tasks allow parallelization

Question **4**

Correct

Mark 2 out of 2

Why are multi-processes used over multi-threads?

Select one or more:

- [x] a. Processes have fault isolation, threads do not ✔
- [x] b. Processes avoid needing safe code by having separate address spaces for data and heap ✔
- [ ] c. Some tasks allow parallelization
- [ ] d. Processes use up less memory
- [ ] e. Processes have faster context switching
- [x] f. Some tasks are sequential ✔

Your answer is correct.

The correct answers are: Some tasks are sequential, Processes have fault isolation, threads do not, Processes avoid needing safe code by having separate address spaces for data and heap

Question **5**

Correct

Mark 2 out of 2

What is a race condition?

Select one:

- ( ) a. simultaneous execution by multiple threads still has correct behavoir
- ( ) b. service routine associated with a specific condition
- (•) c. anomalous behavior due to unexpected critical dependence on the timing of events ✔
- ( ) d. code that can be interrupted in the middle of its execution and safely called again

Your answer is correct.

The correct answer is: anomalous behavior due to unexpected critical dependence on the timing of events

Question **6**

Correct

Mark 1 out of 1

What is meant by "thread safe"?

Select one:

- a. a task running only in kernel mode
- b. a block of code that functions correctly during simultaneous execution by multiple threads ✔
- c. a block of code (service routine) associated with a specific condition
- d. a block of code that can be interrupted in the middle of its execution and safely called again

Your answer is correct.

The correct answer is: a block of code that functions correctly during simultaneous execution by multiple threads

Question **7**

Correct

Mark 1 out of 1

What is meant by reentrant?

Select one:

- a. a block of code that functions correctly during simultaneous execution by multiple threads
- b. a block of code that can be interrupted in the middle of its execution and safely called again ✔
- c. a block of code (service routine) associated with a specific condition
- d. a task running only in kernel mode

Your answer is correct.

The correct answer is: a block of code that can be interrupted in the middle of its execution and safely called again

Question **8**

Correct

Mark 2 out of 2

Which of the following are two-way communication methods?

Select one or more:

- [ ] a. Semaphore
- [x] b. RPC ✔
- [ ] c. Pipes
- [x] d. Sockets ✔
- [x] e. Shared memory ✔
- [ ] f. Signals (interrupts)

Your answer is correct.

The correct answers are: Shared memory, Sockets, RPC

Question **9**

Correct

Mark 2 out of 2

Which of the following is considered as a mechanism of Inter-Process Communications?

Select one or more:

- [x] a. Shared memory ✔
- [ ] b. Concurrency
- [x] c. Sockets ✔
- [ ] d. Deadlock
- [x] e. Pipes ✔

Your answer is correct.

The correct answers are: Shared memory, Pipes, Sockets

Question **10**

Correct

Mark 2 out of 2

Which of the following are communication methods that can be used across machines?

Select one or more:

- [ ] a. Signals (interrupts)
- [x] b. RPC ✔
- [ ] c. Shared memory
- [ ] d. Pipes
- [x] e. Sockets ✔
- [ ] f. Message Passing

Your answer is correct.

The correct answers are: Sockets, RPC

Question **11**

Correct

Mark 1 out of 1

Which of the following is a disadvantage of IPC message passing?

Select one:

- ( ) a. It doesnt require synchronization
- (•) b. It is slow ✔
- ( ) c. It is handled in the kernel
- ( ) d. There are no disadvantages

Your answer is correct.

The correct answer is: It is slow

Question **12**

Correct

Mark 1 out of 1

What is difference between Synchronous and Asynchronous system calls?

Select one:

a. Asynchronous will not continue until the command is completed,
Synchronous will return immediately

b. Synchronous will not make call until the command can be completed,
Asynchronous will always make the call and wait

c. Asynchronous will only make call if it can be completed,
Synchronous will only make the call if it must wait

d. Synchronous will not continue until the command is completed,
Asynchronous will return immediately ✔

Your answer is correct.

The correct answer is:
Synchronous will not continue until the command is completed,
Asynchronous will return immediately

Question **13**

Correct

Mark 2 out of 2

Which of the following are true about Shared Memory?

Select one or more:

- [x] a. can be shared between two processes ✔
- [ ] b. access is only available from the kernel
- [x] c. each memory segment can be named ✔
- [x] d. allocated from kernel ✔
- [ ] e. duplicated during process creation with fork()
- [ ] f. allocated from the heap

Your answer is correct.

The correct answers are: allocated from kernel, can be shared between two processes, each memory segment can be named

Question **14**

Correct

Mark 1 out of 1

What is the name of the mechanism of packaging and unpacking the data in Remote Procedure Calls?

Select one:

- (•) a. marshaling ✔
- ( ) b. deploying
- ( ) c. interrupting
- ( ) d. procedures

Your answer is correct.

The correct answer is: marshaling