PRACTICE Test 2 W24 - Results

Attempt 1 of Unlimited

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Attempt Score **0 %**

Overall Grade (Highest Attempt) **0 %**

Question 1

When a process is in the _____ state it is in secondary memory but is available for execution as soon as it is loaded into main memory.

- Blocked
- Blocked/Suspend
- Ready
- Choose this if none of the others is correct
- ➡ Ready/Suspend

Question 2

Some number of user programs are simultaneously submitted for execution in a uniprocessing, multiprogramming system with no virtual memory, no paging, and round-robin scheduling.

The 30 instruction cycles below show interleaved traces from the processor's point of view, starting at the start of the first user program to execute. No user program has terminated by cycle 30.

How many user processes are running concurrently?

1.	2000	**11.**	501	**21.**	2009
2.	2001	**12.**	502	**22.**	2010
3.	2002	**13.**	2004	**23.**	2011
4.	2003	**14.**	2005	**24.**	500
5.	500	**15.**	2006	**25.**	501
6.	501	**16.**	2007	**26.**	502
7.	502	**17.**	500	**27.**	2012
8.	6000	**18.**	501	**28.**	2013
9.	6001	**19.**	502	**29.**	2014
10.	500	**20**	2008	**30.**	2015

- ○ 1
- ➡ ○ 2
- ○ 3
- ○ 4
- ○ 5
- ○ 6
- ○ 7
- ○ 8
- ○ 9

Question 3

Why might a process transition from state Running to Ready according to our text? (select all that apply).

- ✔ ☐ the process indicates it has completed
- ➡ ✖ ☐ the process voluntarily releases control of the processor
- ➡ ✖ ☐ it is preempted by the OS

- ➡ ✖ ☐ the process has reached the maximum allowable time for uninterrupted execution

Question 4

In a multithreaded environment, within a process there may be one or more threads, each with the following: Select all that apply.

- ➡ ✖ ☐ a thread execution state (Running, Ready, etc.)
- ➡ ✖ ☐ an execution stack
- ✔ ☐ its own copy of the process's User address space
- ➡ ✖ ☐ a thread control block

Question 5

Suppose the following statements comprise the body of a C program. How many processes would be created when the program is executed? Assume functions succeed.

```
fork();
if ( (int) fork() == 0 )
  if ( (int) fork() == 0 ) fork();
return 0;
```

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5
- ◯ 6
- ◯ 7
- ➡ ◯ 8

- ○ 9
- ○ 10
- ○ 11
- ○ 12
- ○ 13
- ○ 14
- ○ 15
- ○ 16
- ○ 17
- ○ 18
- ○ 19
- ○ 20

Question 6

Which are basic thread *operations* associated with a change in thread state? Select all that apply.

- ✓ ☐ unsuspend
- ✓ ☐ suspend
- ➡ ✗ ☐ unblock
- ➡ ✗ ☐ block

Question 7

Which is true of a trap? Select all that apply.

- ✓ ☐ It is used to enable reaction to an external asynchronous event.
- ✓ ☐ It is used to call into an OS function.

- ➡ ✖ ☐ Its cause is associated with the execution of the current instruction.
- ➡ ✖ ☐ It is used to enable handling of an error or an exception condition.

Question 8

Consider the following call to clone. To make the child *a thread* sharing memory and file descriptors with its parent, what should the third argument be?

```
pid_t pid = clone(childFunc, stackTop, _______, argv[1]);
```

- ➡ ◯ CLONE_VM|CLONE_FILES
- ◯ CLONE_VM && CLONE_FILES
- ◯ VM_CLONE|FILES_CLONE
- ◯ VM_CLONE && FILES_CLONE

Question 9

When a Linux process is in a blocked state, in which it is waiting directly on hardware conditions and therefore will not handle any signals, this state is referred to as the _____ state.

- ◯ interruptible
- ➡ ◯ uninterruptible
- ◯ Choose this if none of the others is correct
- ◯ zombie
- ◯ stopped

Question 10

Which are involved in a Process Switch from P1 to P2. Select all that apply.

- ➡ ✖ ☐ P2's Process Control Block is updated.

- ✗ ☐ P1's state is changed.
- ✗ ☐ P1's processor context is saved into its Process Control Block.
- ✓ ☐ P2's processor context is saved into its Process Control Block.

Question 11

Which is true in a combined ULT/KLT facility? Select all that apply.

- ✗ ☐ thread creation is done completely in user space
- ✓ ☐ each user-level thread is always mapped to a unique kernel-level thread
- ✗ ☐ most of the scheduling and synchronization is done in user space
- ✓ ☐ a blocking system call must always block the entire process

Question 12

Pure User Level Threads are executing in a multiprogramming, uniprocessing environment. Process P comprises 2 threads, T1 and T2. Initial states are given in the table below. An entity does some action, as specified in the table. What are the resulting states?

P	T1	T2	Action
Blocked	Ready	Running	P is swapped out

- ✗ _____ **(1)** T2
- ✗ _____ **(4)** P
- ✗ _____ **(2)** T1

1. Running
2. Ready
3. Blocked
4. Suspended

Done