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1. What unique resources does a process have?   **0 / 1 point**

I. Program counter value.

II. Virtual address space.

III. Shared libraries

○ *I* only.

○ *I* and *II*, NOT *III*

◉ *II* and *III*, NOT *I*

○ *II* only

⊗ **Incorrect**
Program counter value is also unique to a process.

2. What does an operating system do to enable concurrency on a single processor   **1 / 1 point**
machine?

○ Provides a graphic interface to allow the user to control system functions.

○ Partitions processor hardware to allow parallel execution of multiple
processes.

○ Combines different processes into a single process.

◉ Interleaves the execution of different processes .

✓ **Correct**
Correct!

3. What is the "context" that is referred to in the term "context switch"?   **0 / 1 point**

◯ Shared libraries used by a process.

◯ Memory and register values unique to a process.

◯ The parameters specific to the operating system.

◉ The set of executing processes.

⊗ **Incorrect**
This is not the context.

4. What is the difference between a thread and a process?   **1 / 1 point**

◉ A thread has less unique context than a process.

◯ Threads do not have unique program counter values.

◯ Processes can execute programs but threads cannot.

◯ A thread is another name for a process.

✓ **Correct**
Correct!

5. What is the main function of the Go runtime scheduler?   **0 / 1 point**

◯ Schedules operating systems processes.

◯ Schedules goroutines inside an operating system thread .

◉ Schedules operating system threads inside a process.

○ Assigns operating system threads to hardware processors.

⊗ **Incorrect**
    The operating system does that.

6. Suppose that there are two goroutines executing, g1 and g2. Assume that g1   **0 / 1 point**
    requires 1 second to complete when it is executed alone, and g2 requires 2
    seconds to complete when it is executed alone. Assume that there is no
    synchronization between g1 and g2. Assume that g1 and g2 are executed
    concurrently and that g1 begins executing first. What do we know about the
    relative completion times of g1 and g2?

    ○ g2 will complete before g1.

    ○ Nothing!

    ⦿ g1 will complete before g2.

    ○ g2 and g1 will complete at virtually the same time.

    ⊗ **Incorrect**
        Without synchronization, we cannot know anything about the relative
        performance of goroutines.

7. Assume that two goroutines are executed concurrently. Which of the following   **0 / 1 point**
    statements is true?

    ○ The relative order of the execution of their instructions is deterministic.

    ⦿ The relative order of the execution of their instructions is unknown, but it is
        the same each time they are executed together.

    ○ The relative order of the execution of their instructions can be different
        every time that they are executed together.

    ○ The relative order of the execution of their instructions can be determined
        from startup conditions.

    ⊗ **Incorrect**

Without synchronization, we cannot know anything about the relative ordering of instructions in different goroutines.