ITCS-5145-091-Spring 2016-Parallel Computing

You can preview this quiz, but if this were a real attempt, you would be blocked because:

This quiz is not currently available

Question 1
Not yet answered
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What is wrong with the following code:

```
#pragma omp parallel   {
  printf("Hello World from thread = %d of %d\n",omp_get_thread_num(),
                    omp_get_num_threads());
}
```

Select one:

- a. Nothing
- b. **\n** should be **/n**
- c. **#pragma omp parallel** should be **#pragma parallel**
- d. The opening brace must be on a new line.
- e. **omp_get_thread_num()** should be **omp_get_thread_no()**

Question 2
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What is the basic conclusion one draws from Amdahl's law?

Select one:

- a. Even with an infinite number of processors, the speed-up factor is limited to f where f is the fraction of the computation that must be executed sequentially.
- b. Even with an infinite number of processors, the speed-up factor is limited to 1/f where f is the factor of the computation that must be executed sequentially.
- c. It is pointless to use more than 20 processors to solve a problem.
- d. Even with an infinite number of processors, the speed-up factor is limited to 20.
- e. The speed-up factor is limited to 1/p where there are p processors.

Question 3
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Suppose we have 4 threads and we want to parallelize a **for** loop using OpemMP that has 75 iterations such as below:

```
omp_set_num_threads(4);
#pragma omp parallel for private(i)
for (i = 0; i < 75; i++)
    ...
```

Which of the following mapping of iterations to threads will result with this configuration:

Select one:

- a.
  Thread 0: 0, 4, 8, 12, 16, ..., 68, 72
  Thread 1: 1, 5, 9, 13, 17 ..., 69, 73
  Thread 2: 2, 6, 10, 14, 18 ..., 70, 74
  Thread 3: 3, 7, 11, 15, 19 ..., 67, 71
- b.
  Thread 0: 0...5, 24...29, 48...53, 72
  Thread 1: 6...11, 30...35, 54...59, 73
  Thread 2: 12...17, 36...41, 60...65, 74
  Thread 3: 18...23, 42...47, 66...71
- c.
  Thread 0: 0 ... 18
  Thread 1: 19 ... 37
  Thread 2: 38 ... 56
  Thread 3: 57 ... 74
- d. None of the other answers
- e. The assignment of iterations to threads cannot be predetermined.

Question 4
Not yet answered
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Give one difference between a process and a thread.

Select one:

- a. They are essentially the same.
- b. Threads share the same instruction pointer whereas each process has its own instructor pointer.
- c. None of the other answers.
- d. Processes share the same memory space whereas each thread has its own memory space.
- e. Threads share the same memory space whereas each process has its own memory space.

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