Started on	Sunday, 7 April 2024, 6:03 PM
State	Finished
Completed on	Sunday, 7 April 2024, 6:04 PM
Time taken	15 secs
Grade	**5.00** out of 5.00 (**100**%)

Question 1

Correct

Mark 1.00 out of 1.00

When we create a task decomposition we may have tasks that are independent of each other and can be executed simultaneously provided that we have enough resources.

However, a task may need data produced by other tasks. Thus, such a task should not start its computation until all tasks producing data it needs complete their work. Consequently, we say that a task has a *dependency* on other task or tasks, and those other tasks have to be executed previously. We need to respect such dependencies in the parallel execution in order to obtain correct results. In order to have a correct scheduling of the execution of the tasks we can keep all this information in a Directed Acyclic Graph (DAG). In view of its purpose, such DAG is named *Task Dependence Graph (TDG)*. Nodes represent computation in a task and edges represent execution order constraints (due to dependencies) between them.

Select one:

- True ✔
- False

Well done!

A *Task Dependence Graph (TDG)* is very important in parallelism.

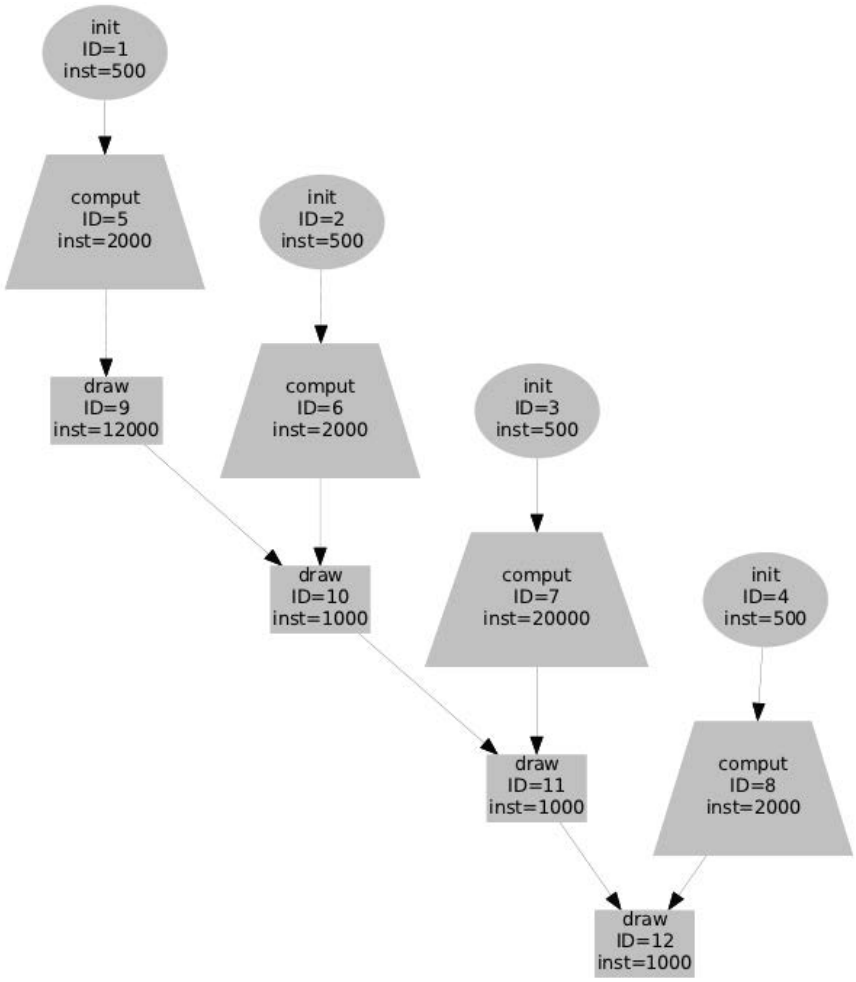
The correct answer is 'True'.

Question 2

Correct

Mark 1.00 out of 1.00

Given the following task graph where `inst` indicates the cost, in terms of number of instructions, for task with identifier `ID`:



Please, answer the following questions:

1. Which is the value for T_1?

Answer: 43000 ✔

Well done!

The correct answer is: 43000

Question 3

Correct

Mark 1.00 out of 1.00

2. Which of the following sequences of tasks corresponds with the critical path in the task graph?

Select one:

- 1, 5, 9, 10, 11, 12
- 1, 2, 3, 4, 8, 12
- 3, 7, 11, 12 ✔ Well done!

Your answer is correct.

The correct answer is: 3, 7, 11, 12

Question 4

Correct

Mark 1.00 out of 1.00

3. Which is the corresponding value for T_∞?

Answer: 22500 ✔

Well done!

The correct answer is: 22500

Question 5

Correct

Mark 1.00 out of 1.00

4. Which is the value of the *Parallelism* metric that could be obtained with this task graph?
Note: express the value using two decimals and a . as the decimal mark (e.g. 3.14)

Answer: 1.91 ✔

Congratulations!

The correct answer is: 1.91