> K22 Fall'26 – V. Atlidakis / Quiz-02

Name and sdi _____

1) [**75 points**: +5 pt on each correct answer, -5 on each incorrect answer]

It's a bright Saturday afternoon. Bob and Ann are in their cozy kitchen, determined to bake the perfect cake. Bob and Ann move around the kitchen, each handling some part of the work, and both cook following Ann's grandma favorite cake recipe.

Bob measures the cocoa powder while Ann is measuring the flour. While Bob is slowly beating the butter, Ann is adding the eggs to Bob's mix one by one. The kitchen table keeps commonly used ingredients and cooking utensils for both Ann and Bob, as well as the original handwritten grandma's recipe, which, both Ann and Bob, read from time to time.

Because Ann's grandma recipe is quite old and difficult to read, small fragments of the recipe have been rewritten on small but clean pieces of paper that are easier (faster) to read. Both Ann and Bob have in front of them a separate set of such "cleaner" fragments of the recipe. At some point, Bob messes up the cocoa mix, which becomes too liquid because he added too much milk. Thankfully, Ann's grandma has left a "special note" explaining what to do if the mix becomes too liquid. However, in order to correct his mess, Bob needs to put aside anything else he had been doing, and carefully follow the special note's instructions before resuming anything else. Later, Ann receives a call on her cell phone from her friend to catch up. She quickly answers the phone and lets her friend know that she will have to call her back later because she is too busy now with the cake.

From time to time, Ann asks Bob to stop being lazy and participate more in executing the recipe, because she is making too many things by herself, while Bob regularly stops executing his parts of the recipe and instead sneaks peeks at his favorite football team on TV.

Select what would **best** describe:

10 : Bob
8 : The kitchen table
9 : Baking the perfect cake
14 : Ann adding eggs to Bob's mix
13 : Bob measuring the cocoa powder
12 : Ann's grandma favorite cake recipe
4 : Ann receiving a call on her cell phone
5 : Cleaned up, rewritten recipe fragments
11 : Bob and Ann executing a part of the recipe each
6 : How quickly can Bob finish the task of beating the butter
2 : Bob messing up the cocoa liquid and making it too liquid
15 : How many parts of the cake recipe can Bob get done in an hour
7 : Ann asks Bob to participate more because she is making too many things by herself
3 : A "special note" explaining what needs to be done if the cocoa mix becomes too liquid
1 : Bob stops executing his parts of the recipe and starts watching his favorite football team on TV

Fill in the following: 1) Context switch, 2) Exception, 3) Exception handler, 4) Interrupt, 5) L1 Cache, 6) Latency, 7) Load balancing, 8) Main memory, 9) Process, 10) Processor, 11) Processors executing threads in parallel, 12) Program, 13) Processor executing a thread, 14) Processor executing a thread/synchronization required, 15) Throughput

2) [**25 points]** If a process is currently blocked and is sent a SIGKILL (9) signal, what process state transitions may occur before the process is terminated? Use arrows to connect states and show the transitions.
Blocked/Waiting → Ready → Running → [Maybe: zombie / orphan] → Terminated.