QUIZIZZ **Worksheets**

Session 4

Total questions: 7

Worksheet time: 4mins

Instructor name: Mr. Erxuan Li

Name

Class

Date

1. Notify always notifies the thread that...

   a) has been waiting the longest time

   b) has been waiting the shortest time

   c) This is arbitrary/we don't know precisely

   d) has the ID closest to the notifying thread (ascending order)

2. When a thread leaves a synchronized block, waiting threads will be notified.

   a) True

   b) False

3.
```
public class IntegerStuff {
    Integer x = 1;
    public void increment3() {
        synchronized(x) {
            x += 1;
            x += 1;
            x += 1;
        }
    }
}
```

   No bad interleavings happen if multiple threads use this increment method (x will have the correct value in the end)

   a) True

   b) False

4. In a given pipeline, latency

   a) Can increase as instances go through

   b) Can decrease as instances go through

   c) Can increase or decrease as instances go through

   d) Always stays constant

5. A task has three stages, each takes 20s. When pipelining the stages instead of doing them sequentially, ...

   a) ... the time for completing one stage decreases.
   b) ... the time for completing one task decreases.
   c) ... the time for completing 10 tasks decreases.
   d) ... we cannot decrease computation time since all stages take equally long.

6. In an unbalanced pipeline, the latency is ...

   a) ... bounded.
   b) ... unbounded.
   c) we can't know for certain

7. Can we exploit ILP and multi-threading in the same program?

   a) Yes, the instructions executed in a thread can exploit ILP.
   b) ILP and multi-threading are the same.
   c) No, we can only use either ILP or multi-threading.

Answer Keys

1. c) This is arbitrary/we don't know precisely
2. b) False
3. b) False
4. a) Can increase as instances go through
5. c) ... the time for completing 10 tasks decreases.
6. c) we can't know for certain
7. a) Yes, the instructions executed in a thread can exploit ILP.