Multithreading Exam Question

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Multiple-select **clearly <CIRCLE> All** that apply

How can a deadlock occur when creating threads?

1. Nesting Locks
2. Sharing a mutex
3. Two threads calling join() on each other.
4. Parent script finishing before thread does
5. Acquire locks out of order
6. A thread calls wait() for too long

Correct:

A – Grabbing a new lock when the thread already has one can cause a lock. One lock may get unlocked with the other being missed/ignored

C – If two threads call join on each other, then both threads will wait for the other to finish forever

E – Out of order locking can cause a lock. It is preferred to acquire in order.

Incorrect:

B – Sharing a mutex between threads is preferred. A mutex working with a conditional variable will allow the threads to be notified to either finish or do some other kind of processing.

D – A leak will occur if the program finishes with an active thread. Not a deadlock

F – A thread can wait for as long as it wants.