Multithreading Exam Question

Multithreading Exam Question

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

How can a deadlock occur when creating threads?

a.) Nesting Locks
b.) Sharing a mutex
c.) Two threads calling join() on each other.
d.) Parent script finishing before thread does
e.) Acquire locks out of order
f.) 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.