1. No. if the access is read for both threads, then concurrency error will not occur.
2. `b)`, `c)` and `d)` are true

**Correct solution**

`c)` and `d)` are true

**Notes**

Question What does it mean when mutex is held by this thread?

Question What I do know is that `pthread_cond_wait` puts thread to sleep. My question here is, how come the mutex is not held when thread is in a blocked state/sleep?

3. a) Only `b)` causes starvation.

   b) Conditional variable is a queue that allows threads to be put themselves on to sleep (in blocked state) when thread it is not desired using `pthread_cond_wait` function.

   Since there are no threads inside `cv1`, there is nothing to awake using `pthread_cond_signal`.

   So, nothing will occur.

   c) System call is a subset of interrupt caused by user application to switch from user mode to kernel mode to perform previleged operations for the application.

   Interrupt is a signal sent by hardware (e.g keyboard, mouse, hard drive) or software.

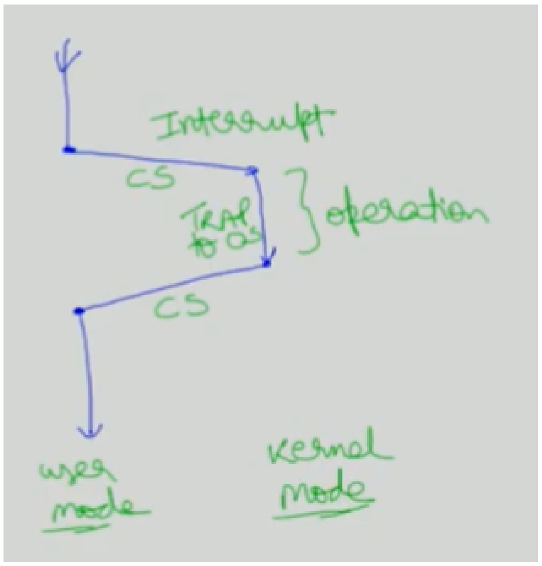
   It tells the cpu to stop its activities and execute appropriate part of the operating system.

   **Notes**

   - I need to review how interrupt works. I had to look up the information.

   Question How does interrupt work?

   - **Interrupt**



d) No. This statment is false.

User level threads are generated in user-mode without kenerel being aware about it.

**Notes**

Question What is the difference between user-level thread and kernel-level thread?

Question Why is thread that is generated at user level using procedure call faster than kernel level thread?

Question What is procedure call? How does it work?

e) System calls do not generate processes. `fork()` does.

With this reason the program `run_stuff` generates only 1 additional process.

**Notes**

Question What is a process? And how does process work?

Question How come system call doesn't generate process? And how come fork() generates process?

- **Process**
  - Is a running program
  - Has 3 states
    1. **Running:**
       - means a processs is running on a processor
       - means instructions are being executed
    2. **Ready:**

   * means a process is ready to run
   * means OS has chosen not to run the program at the given moment

3. **Blocked:**
   * means a process has performed some kind of operation that makes it not ready to run until some event takes place