Choose only one answer from the following

1. If you want to write a program to multiply two matrices in a parallel way. Which method will be faster?
   a. threads    b. processes  c. multiprogramming (e.g. pipes)  d. just serial program

2. Shortest job first is more suitable for:
   a. Real-time system   b. Batch system    c. Interactive system    d. In all of them

3. Which of the following is NOT an advantage of using threads
   a. Makes programming model simpler when many things in an application are going on at once.
   b. They are easier to create than processes
   c. Threads of a program have separate address spaces hence increase protection.

Answer the following questions:

1. Describe the two general roles of an operating system, and elaborate why these roles are important.

2. Why don’t we have a finished/killed state for a process?

3. What is the relationship between race condition and critical region?

4. Is an interactive system a real-time system? How about the other way around?

5. We have seen 3 states for a process (running, blocked, and ready). When drawing the state diagram we found 4 transitions only instead of 6. Why are these two transitions omitted?