**Q0**) What are the possible state transitions of a process?

**Q1**) What are the differences between a thread and a process?

**Q2**) What is a race condition?

**Q3**) Five jobs are waiting to be run. Their expected run times are 9, 6, 3, 5, and *X*. In what order should they be run to minimize average response time? Given X = 10 and X = 1

**Q4**) Five batch jobs *A* through *E*, arrive at a computer center at almost the same time. They have estimated running times of 10, 6, 2, 4, and 8 minutes. Their (externally determined) priorities are 3, 5, 2, 1, and 4, respectively, with 5 being the highest priority. For each of the following scheduling algorithms, determine the mean process turnaround time.

(a) Round robin (RR=4).

(b) Priority scheduling.

(c) First-come, first-served (run in order 10, 6, 2, 4, 8).

(d) Shortest job first.

For (a), assume that the system is multiprogrammed, and that each job gets its fair share of the CPU. For (b) through (d) assume that only one job at a time runs, until it finishes. All jobs are completely CPU bound.

**Q5)** What is the difference between preemption and non-preemption in the context of process scheduling.