1. Show a diagram depicting the operation of foreground/background systems. Label all important components.

2. Name and describe two common design philosophies for real-time operating system design.

3. Show a diagram depicting the execution profile of a non-preemptive kernel execution. Label all important components.

4. Give an example C function that is non-reentrant.

5. Name and describe two types of semaphores.

6. Give the pseudocode for a test-and-set operation.