Advanced Operating Systems Design – Spring 2022
Quiz (02/03/2022) due by 02/05/2022 at 11:59pm

Student Name: _____ (First Last)
Student R#:   _____
Score: _____ (Total: 3%)

Question 1: (1%) Critical Regions
Strict Alternation (shown below) is a solution for avoiding race conditions. What are the issues of this solution?

```
while (TRUE) {                              while (TRUE) {
    while (turn != 0)      /* loop */ ;         while (turn != 1)       /* loop */ ;
    critical_region( );                         critical_region( );
    turn = 1;                                   turn = 0;
    noncritical_region( );                      noncritical_region( );
}                                           }

              (a)                                         (b)
```

Question 2: (1%) Processes
In Operating Systems, what are processes?
What are the different states of a process? (Please explain these states)

Question 3: (1%) CPU Utilization
On a single CPU system, we have 2 processes running concurrently, with the same I/0 percentage = 60%.
What are the CPU Utilizations in the average case, best case, worst case?