**CS2106 Operating Systems**

**Lab 5 – Semaphores**

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| --- | --- |
| Name 1: | Student Number 1: |
| Name 2: | Student Number 2: |
| Name 3: | Student Number 3: |

**Question 1 (1 mark)**

This program does not run correctly.

**Question 2. (3 marks)**

This program may not operate correctly in a multithreaded because multiple threads are able to run the enqueue and dequeue functions, the count, front, and back variables to be inaccurate. The value of count can be less than QLEN even when the buffer is full due to race conditions on the variable. Therefore, allowing multiple threads to overwrite the values inside the buffer. Race conditions on the len array also causes some buffer to not copy fully.

**Question 3. (4 marks)**

My code is shown below:

**Question 4. (1 mark)**

The answer is not correct.

**Question 5. (3 marks)**

The problem in Q4 is…

The sem\_wait and sem\_post calls fixed the problem because…

**Question 6. (4 marks)**

Changes to my web server are shown below with explanation:

**Question 7.** **(1 mark)**

This is what’s happening in testbarrier.cpp:

**Question 8. (3 marks)**

This is how reachBarrier works:

TOTAL: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ / 20