**CS2106 Operating Systems**

**2017/18 Semester II**

**Term Assignment Answer Book**

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| STUDENT NUMBER 1: | STUDENT NAME 1: |
| STUDENT NUMBER 2: | STUDENT NAME 2: |
| STUDENT NUMBER 3: | STUDENT NAME 3: |

**Question 1** (15 marks)

My code and explanation for the LINUX scheduler is shown below:

Here is a screenshot showing the output of my LINUX scheduler.

**Question 2** (5 marks)

One advantage of using array of queues:

One disadvantage of using array of queues:

**Question 3** (5 marks)

My pseudocode for “renice” is shown below:

Look for the process under the process table and offset the value of prio with adjust, while keeping the value within 0 to 139. The LinuxScheduler will insert the process under the new priority’s queue after it finishes the current quantum cycle.

**Question 4.** (20 marks)

My code and explanation for the RMS scheduler is shown below:

Here is my screenshot of my RMS scheduler running:

**Question 5.** (5 marks)

CPU Utilization using the formula is:

CPU Utilization by counting cycles is:

They are/are not the same (choose one). This is why:

**Question 6.** (10 marks)

My modifications to turn this into an EDF scheduler are:

Sketch modifications and write down pseudocode for how to modify the RMS scheduler you have built into an EDF scheduler. You do not have to build the EDF scheduler, only explain in as much detail as possible how you can convert your RMS scheduler into an EDF scheduler.

**Question 7.** (2 marks)

This is the output of my RMS scheduler with missed deadlines:

**Question 8.** (8 marks)

CPU utilization (using the utilization formula) is:

Here is my Criticial Instance Analysis (CIA) of the 3 processes:

Based on CPU utilization and CIA we have missed deadlines because:

TOTAL: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ / 70