

CSE 4502 (SWE): Operating Systems Lab
Islamic University of Technology (IUT)
Department of CSE
Time: 1 Hour 20 Mins
Date: Monday, 21 November 2022
Total Marks: 50

1. Consider a situation in which the master has **four (4)** tasks to complete. Each task's instructions are recorded in separate files. The master wishes to distribute such duties to the **four (4)** slaves to finish them quickly. 50

Task1 is checking whether a word is a palindrome or not.

Task2 is checks the strength of the given password. A given password is strong enough if it contains at least a small letter, a capital letter, and a numerical digit and has a length of more than 8.

Task3 is generates prime numbers in between the given range. For example, in the case of 4 and 8, the output should be 5, 7.

Task4 is checking whether the given number is a prime number or not.

The Master process will first create **four (4)** different files (**task1.txt, task2.txt, task3.txt, and task4.txt**). The master process will then create **four (4)** child processes. The master needs to send the file name to the child process. Each child process will then open that specific file and will write the task details in it. For example, **palindrome_checking** for **task1**, **password_strength_checking** for **task2**, **prime_number_generation** for **task3** and finally **prime_number_checking** for **task4**. The master process will wait for the child process to finish.

Now the master process will create **four (4)** separate threads, each completing the **four (4)** different tasks. The threads will read the tasks from the files. For example, **thread1** one will read the content from **task1.txt** and complete the task written in that file.