Student Name:

CSCI U511 – Operating Systems

Homework-5, Weight: 30 points

Due on Wednesday, Nov 1, 2023 at the beginning of the class
Note: You need to include your calculation and details to receive full credit!

Problem numbers refer to Operating Systems: Principles & Practice (OSPP), second edition. Please remember to put your name on your answer sheet.

Q1. Chapter 7, Exercise Problem 4

Given the following mix of tasks, task lengths, and arrival times, compute the completion for each task for the FIFO, RR, and SJF algorithms. Assume a time slice of 10 milliseconds and that all times are in milliseconds.

Task	Length	Arrival Time	Completion Time
0	85	0	
1	30	10	
2	35	15	
3	20	80	
4	50	85	

Q2. Chapter 7, Exercise Problem 8

If a queueing system with one server has a workload of 1000 tasks arriving per second, and the average number of tasks waiting or getting service is 5, what is the average response time per task?

Q3. Chapter 7, Exercise Problem 14

For each of the following processor scheduling policies, describe the set of workloads under which that policy is optimal in terms of minimizing average response time (does the same thing as shortest job first) and the set of workloads under which the policy is pessimal (does the same thing as longest job first). If there are no workloads under which a policy is optimal or pessimal, indicate that.

     (a) FIFO

     (b) Round Robin

     (c) Multilevel feedback queues