



Uva Wellassa University of Sri Lanka
Faculty of Science and Technology
Department of Computer Science and Technology
200 level 2nd Semester Examination – Dec.-2017/Jan.-2018
CST262-2 Operating System Concepts and Design

Part B

Number of questions: Three(03)
Mark allocation: 60

1. Consider the following set of processes with the length of CPU burst time given in milliseconds.

Process	Arrival Time	Burst Time
P1	0	6
P2	1	4
P3	3	5
P4	5	3

- Draw the Gantt chart to illustrate the execution of these processes using Shortest Job First (SJF) preemptive and SJF non-preemptive algorithms separately. (6 mark)
- Calculate the average turnaround time for both algorithms. (4 mark)
- Find the average waiting time for both algorithms. (4 mark)
- Which algorithm is most effective for the above scenario? (1 mark)

2. Briefly explain the following terms in operating systems.

- a. Kernel
- b. System Calls
- c. Threads
- d. Deadlock

(20 mark)

3.

- a. Briefly explain the critical section in operating systems. (2 mark)
- b. Differentiate Preemptive and Non-preemptive CPU scheduling. (6 mark)
- c. Discuss the three (03) requirements that needs to be consider when providing a solution to the critical section problem. (9 mark)
- d. Compare and contrast paging and segmentation memory management schemes. (8 mark)

