CSCE 311 Spring 2020

Process Scheduling

Name: Key Due: 2/11/20

1. Assume that the following processes arrive at the times shown in the table below and with the indicated CPU burst.

Process	Arrival Time	CPU Burst
P_1	3	15
P_2	5	16
P_3	0	18
P_4	7	14

a) Assuming FCFS process scheduling, draw the Gant chart showing the order in which the processes execute.

P3 | P1 | P2 | P4

0 18 33 49 63

b) Assuming non-preemptive SJF scheduling, draw the Gant chart showing the order in which the processes execute.

P3 | P4 | P1 | P2

0 18 32 47 63

c) Assuming SJR (preemptive SJF) scheduling, draw the Gant chart showing the order in which the processes execute.

P3 | P4 | P1 | P2

0 18 32 47 63

d) Assuming RR scheduling with quantum = 4, draw the Gant chart showing the order in which the processes execute.

P3 P1 P3 P2 P4 P1 P3 P2 P4 P1 P3 P2 P4 P1 P3 P2 P4

0 4 8 12 16 20 24 28 32 36 40 44 48 52 55 58 61 63

e) Assuming process priority P1:0, P2:3, P3:2, P4:1, draw the Gant chart to show the priority scheduling for these processes. (smaller number == higher priority)

P3 | P1 | P4 | P3 | P2

0 3 18 32 47 63

2. What is the average waiting time for each of the scheduling algorithms in question 1?

	P1			P2			P3			P4			Ave Wait
	te	ta	tb	te	ta	tb	te	ta	tb	te	ta	tb	
a) FCFS	33	3	15	49	5	16	18	0	18	63	7	14	21.25
b) SJF	47	3	15	63	5	16	18	0	18	32	7	14	20.5
c) SJR	47	3	15	63	5	16	18	0	18	32	7	14	20.5
d) RR	55	3	15	61	5	16	57	0	18	63	7	14	39.5
e) Priority	18	3	15	63	5	16	47	0	18	32	7	14	20.5