ANSWERS

Name: Number: — — . . 4.

Operating Systems Quiz 1   9.11.2016   Dr. Ediz ŞAYKOL

Q1)

RR (q=3) and FCFS are used as multi-level queue, such that at a decision point (karar verme noktasında),
  if the remaining time of the process is $\geq$ 5,
    then RR(q=3) is used;
  else if the remaining time of the process $\leq$ 5,
    then FCFS is used for that process.
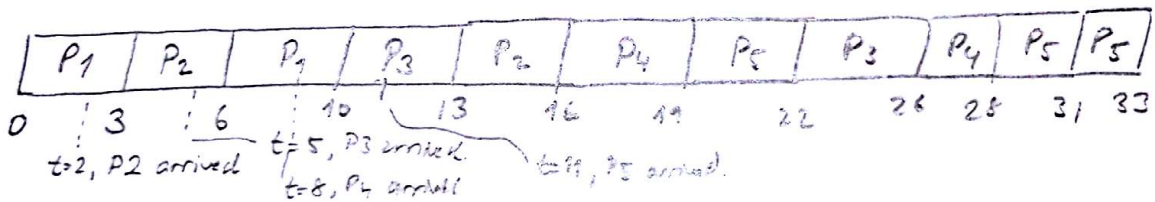
(a) Draw Gantt chart for this multi-level queue and
(b) compute the waiting time of each process.

Process	CPU Burst Time	Arrival Time
P1	7	0
P2	6	2
P3	A	5
P4	5	8
P5	8	11

(A: Last digit of your student number + 3)

ASSUME $A = 4 + 3 = 7$, (will be different for each student)

At time = 0,
only P1, remaining time = 7, RR(q=3) is used,

P1	P2	P1	P3	P2	P4	P5	P3	P4	P5	P5

0   3   6   10   13   16   19   22   26   28   31   33

t=2, P2 arrived   t=5, P3 arrived   t=11, P5 arrived.
                   t=8, P4 arrival

At time = 3, ... | P1 | P2 |
  P2 is infront of P1, remaining time = 6, RR (q=3) is used,

At time = 6, ... | P2 | P3 | P1 |
  P1 is in front of the queue, remaining time = 7−3 = 4, 4 < 5, FCFS is used.

At time = 10, ... | P4 | P2 | P3 |
  P3 is infront of the queue, remaining time = 7, RR(q=3) is used.

At time = 13, ... | P3 | P5 | P4 | P2 |
  P2 is infront, remaining time = 6−3 = 3, 3 < 5, FCFS is used.

At time = 16, P4 is in front, remaining time = 5, RR(q=3) is used.
At time = 19, P5 is infront, remaining time = 8, RR (q=3) is used.
At time = 22, P3 is infront, remaining time = 7−3 = 4, 4 < 5, FCFS is used.
At time = 26, P4 is infront, remaining time = 2, FCFS is used.
At time = 28, P5 is infront, remaining time = 5, RR(q=3) is used.