BRAC University, Dhaka
Department of Computer Science and Engineering

CSE321: Operating Systems, Spring 2024, Quiz - 2

Marks: 15 **Time: 20 Min**

Name:	ID:	Section:

1. Determine if the following sentences are true or false. For any false sentence, write its correct form. 5*1 = 5

   i. Benefits of threads can be availed in a single processor single core system. (F)
   Threads are beneficial in multi-processor/multi-core systems.

   ii. Starvation is a problem in RR. (F)
   Starvation is a problem in priority scheduling

   iii. SJF is essentially a priority scheduling. (T)

   iv. One-to-one multithread model can create blockings. (F)
   Many-to-one model can create blockings.

   v. Processes can be interrupted in FCFS. (F)
   FCFS does not allow any interruptions.

2. Fill in the blanks 4*1 = 4

   i. Two external priority factors are __importance_ & _____ funds _____

   ii. Starvation can be solved by _____aging_____

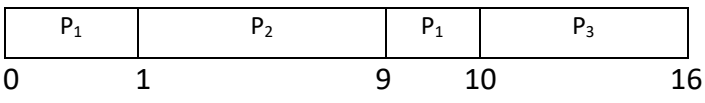
   iii. To apply the same operation in a very large data set, the parallelism that could be used is _____data parallelism _____

   iv. Speedup depends on _number of cores___ & __number of serial/parallel operations____

3. Briefly answer the following questions. 3 + 3 = 6

   i. For the following process table, draw the Gantt chart and calculate the average waiting time considering a preemptive priority scheduling

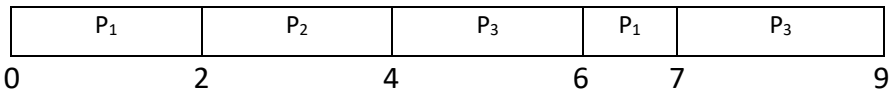
Process	Arrival Time	Burst Time	Priority
P_1	0	2	2
P_2	1	8	1
P_3	2	6	3



Average waiting time: ((9 – 1) + 0 + (10 - 2)) / 3 = 16 /3 = 5.33

ii. For the following process table, draw the Gantt chart and calculate the average waiting time considering a RR scheduling with q = 2

Process	Arrival Time	Burst Time
P_1	0	3
P_2	1	2
P_3	2	4



0 2 4 6 7 9

Average waiting time: ((6 – 2) + (2 - 1) + (4 - 2) + (7 - 6)) / 3 = 8 /3 = 2.67