

2nd REAL TIME SYSTEM ASSIGNMENTS FOR 5th Semester, CSE (Honours)-2018

Q.1. Check whether the following periodic task set are schedulable under RMA on a uni-processor:

T1= (e1=20ms, p1=100ms)

T2= (e2=30ms, p2=150ms)

T3= (e3=90ms, p3=200ms)

Assume that context switching overhead does not exceed 1ms and is taken into account in scheduling.

(Refer Section 2.9.3 and Example 2.13 of R.mall Book)

Q.2. Consider the following set of periodic tasks:

T1= (e1=10ms, p1=50ms)

T2= (e2=25ms, p2=150ms)

T3= (e3=50ms, p3=200ms)

Assume that the self-suspension times of T1, T2, and T3 are 3ms, 3ms, and 5ms respectively. Determine whether the tasks would meet their respective deadlines, under RMA or not.

(Refer Section 2.9.4 and Example 2.14 of R.mall Book)

Q.3. Give difference between RMA and EDF Scheduling algorithm and Discuss the disadvantages of RMA scheduling algorithm.

Q.4. Discuss about Priority Inversion in real time task resource sharing.

Q.5. Discuss about Priority Inheritance Protocol and its disadvantage.

Q.6. What do you mean by Highest Locker Protocol and Priority Ceiling Protocol, discuss in details.

Q.7. What are Byzantine clocks? Write a pseudo code for achieving clock synchronization involving a small number of Byzantine clocks and few good clocks?

Q.8. Write short note on POSIX.

Q.9. Discuss briefly about the commercially available Real Time Operating System like Vxworks, VRTX, RT Linux, Lynx and Windows CE.

N: B-

1. Theory related to some of the questions, I have not discussed in class. Still, I would say, prepare all the questions of this assignment.
2. **All the questions in 1st internal examination will be from this assignment only. However, the order and no. of questions in internal exam may vary. All students are need to submit this assignment within one week after the 1st internal examination. After the deadline no submission will be entertained.**

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