ESE 3025 Real-Time OS

Test #1

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Consider a real-time system with three tasks, labelled S1, S2, and S3. The tasks have task periods (denoted by Ti) and average execution times (denoted by Ci) as indicated in the following table. Note that the priorities have not been decided yet, and depend on the task-allocation policy.

|  |  |  |  |
| --- | --- | --- | --- |
| task | Ti | Ci | priority |
| S1 | 3 ms | 1 ms |  |
| S2 | 8 ms | 3 ms |  |
| S3 | 4 ms | 1 ms |  |

1. (10 points) Using a rate-monotonic (RM) policy, enter the priorities of the tasks in the above table (the least important task should receive a priority of 1). Next to the table, write down why you chose these priorities. Now, using the chart below, provide the timing diagram for the real-time process.





