CS314 Operating System
Spring 2024
Exercise Question on April 23-B, 2024

Prove that the following condition is not "a necessary and sufficient condition (for "feasibility test")" for RMS real-time scheduling.

$$\frac{C_1}{T_1} + \frac{C_2}{T_2} + \cdots\cdots + \frac{C_n}{T_n} \leq n(2^{\frac{1}{n}} - 1) \qquad (1)$$

where:

- C_i is the execution time of task i
- T_i is the task's time period for task i
- n is the number of tasks

Note 1: all the tasks are periodic tasks (tasks that repeat its pattern).

Note 2: Use APPENDIX (at the end of this exam) for formula (1).

APPENDIX:

N	$N(2^{(1/N)}-1)$
1	1.000
2	0.828
3	0.779
4	0.756
5	0.743
6	0.734
∞	0.693