1. (a) Explain why tasks are assumed to be independent in the Rate Monotonic Scheduling Algorithm (RMA). [3]

(b) Consider the following task set, where each task is represented as (execution time; period): T1 = (10; 50); T2 = (20; 75); T3 = (10; 100)

(i) Calculate the utilization of the task set, assuming all tasks are released at t = 0. [5]

(ii) Derive the set of conditions to determine whether the task set is RMA-schedulable. [7]

(c) Given the following task set: T1 = (10; 40); T2 = (20; 75); T3 = (35; 100); T4 = (15,150), determine whether there is any task that misses its deadline. Justify your answer and develop a schedule to illustrate this. [10]