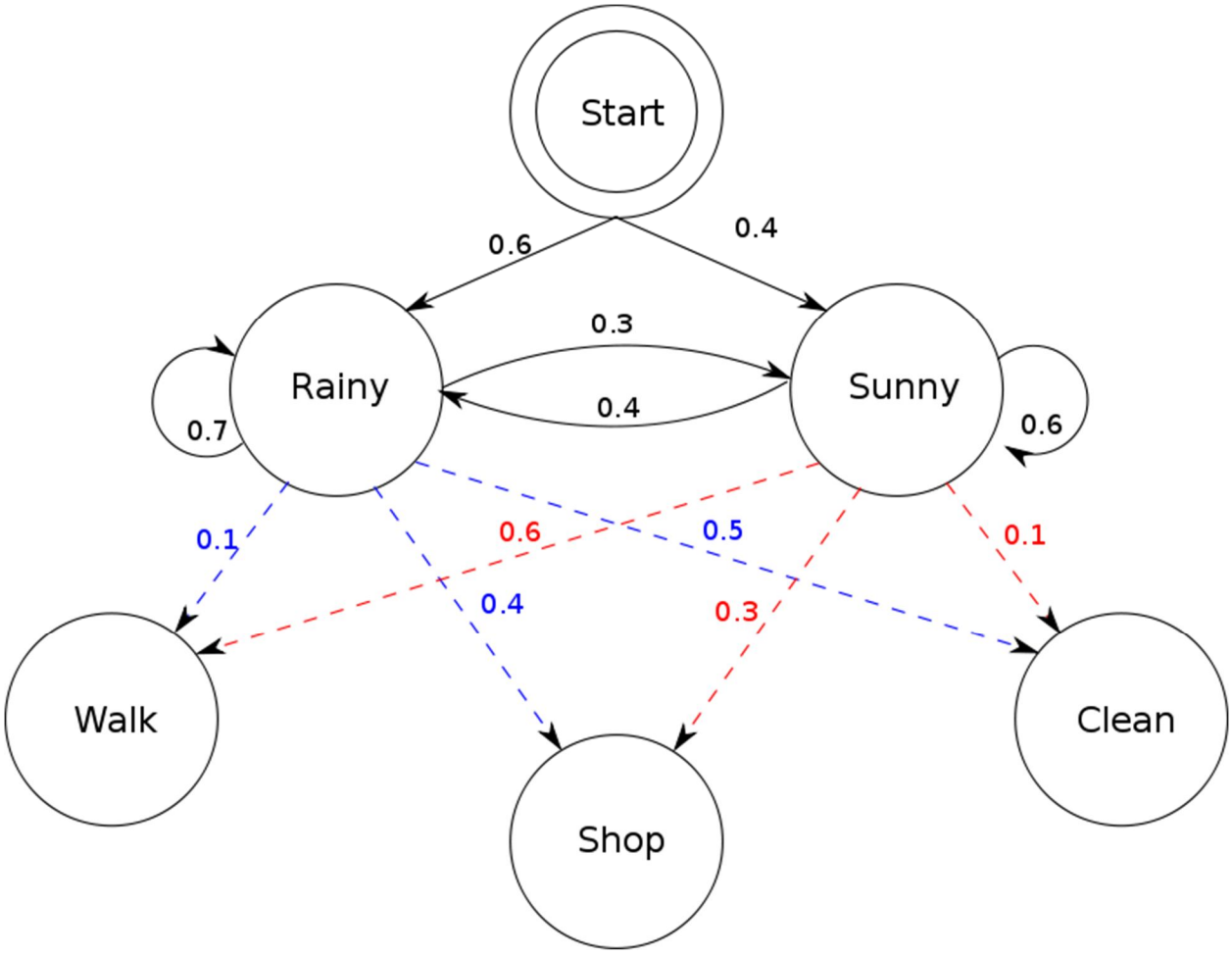
Class Test 03 Set A
CSE 401 – Mathematics for Computer Science
Department of Computer Science and Engineering
University of Asia Pacific
Total Marks: 20 Time: 30 Minutes

Q1. Consider the following Hidden Markov Model Diagram—




Now, again consider the following map—

Day 1 Hidden State: Rainy if the last digit of your ID is odd. Sunny if the last digit of your ID is even.

Day 1 Observable state: Walk if the last digit of your id MOD 3 is 0, Shop if the last digit of your id MOD 3 is 1, Clean if the last digit of your id MOD 3 is 2.

Day 2 Hidden State: Rainy if the second last digit of your ID is odd. Sunny if the second last digit of your ID is even.

Day 2 Observable state: Walk if the second last digit of your id MOD 3 is 0, Shop if the second last digit of your id MOD 3 is 1, Clean if the second last digit of your id MOD 3 is 2.

Day 3 Hidden State: Rainy if the third last digit of your ID is odd. Sunny if the third last digit of your ID is even.

Day 3 Observable state: Walk if the third last digit of your id MOD 3 is 0, Shop if the third last digit of your id MOD 3 is 1, Clean if the last digit of your id MOD 3 is 2.

Determine the probability of occurring Day1 > Day 2> Day 3 as the above states.