Quiz 2 (75 minutes)

1. Use Naive Bayes' algorithm to classify Red, Domestic, SUV. Write down the steps. (5)

Example No.	Color	Type	Origin	Stolen?
1	Red	Sports	Domestic	Yes
2	Red	Sports	Domestic	No
3	Red	Sports	Domestic	Yes
4	Yellow	Sports	Domestic	No
5	Yellow	Sports	Imported	Yes
6	Yellow	SUV	Imported	No
7	Yellow	SUV	Imported	Yes
8	Yellow	SUV	Domestic	No
9	Red	SUV	Imported	No
10	Red	Sports	Imported	Yes

2. What is Markov assumption? (3)
3. What kind of challenges arise with higher higher order Markov chains? Explain in the context of gene finding. (5)
4. Explain the time complexity analysis for the Viterbi algorithm. (5)
5. Write down the steps of Neighbor Joining algorithm for constructing phylogenetic trees. (7)
6. Discuss an algorithm for gene finding in prokaryotes. (5)
7. Construct the maximum parsimony tree for the below taxa. (5)
    a. ACT
    b. ACA
    c. GTT
    d. GTA