1. a) Define Artificial Intelligence? Write application of Artificial Intelligence. [5]

b) Define intelligent agent. Explain different types of intelligent agent. [10]

1. a) Define pruning. Explain α-β pruning with example. [7]

b) Differentiate between Universal quantification and Existential quantification. Write FOL for the following.[8]

i) **Clinton is not tall.**

ii) **You can fool all of the people some of the time..**

iii) **All purple mushrooms are poisonous.**

**iv) There are exactly two purple mushrooms.**

1. a)Explain Nearest Neighbor Method for classification. [5]

b) What is over fitting? How can it be avoided? [5]

c) Define Perceptron. Draw a clean diagram of Multi-layer-Network. [5]

1. a)Explain Back Propagation Algorithm with suitable example. [10]

b)Explain Bayesian Network in brief. [5]

1. a) Write the procedure of genetic algorithm in detail. [8]

b) Explain different Expert system tools. [7]

1. a) Write Importance of Ant colony paradigm.[5]

b) What are the characteristics of ant colony system which do not find in real ants? [5]

C) Explain Ant Colony Systems. [5]

1. Write Short note. (Any two) [5+5]
2. Learning
3. Mutation.
4. Importance of Knowledge