

1. All questions are compulsory.
2. All questions carry equal marks.
3. Draw neat, labelled diagrams wherever necessary.

[15 Marks]

Q.1 Attempt the following (Any Three)

- a. What is AI? What are the problems associated with AI?
- b. What is Agent? Explain Types of Agents.
- c. What is Structure of an Intelligent Agent?
- d. Write a short note on foundations of AI.
- e. Give PEAS description of task environment for Medical Diagnosis System.
- f. Explain properties of Task environment.

[15 Marks]

Q.2 Attempt the following (Any Three)

- a. Explain uniform cost search.
- b. Write short note on Min-Max search strategy.
- c. Write a short note on A* search. Also explain conditions for optimality of A*.
- d. Explain Map Coloring strategy.
- e. Explain Depth First Search with Example.
- f. Explain N-Queens problem with 4 Queens example.

[15 Marks]

Q.3 Attempt the following (Any Three)

- a. Explain Propositional Logic.
- b. Explain First Order Predicate Logic.
- c. Write note on syntax and semantics.
- d. Explain the concept of Resolution.
- e. Compare Forward chaining and Backward chaining.
- f. State and explain example of forward chaining algorithm.

[15 Marks]

Q.4 Attempt the following (Any Three)

- a. Explain condition Probability and Joint Probability.
- b. Write note on Bayesian Network.
- c. What is Belief Network?
- d. Write short note on Uncertainty?
- e. Explain Bayes' Theorem.
- f. Explain Sequential Decision problem.

[15 Marks]

Q.5 Attempt the following (Any Three)

- a. Explain Types of Learning.
- b. What do you mean by Deep Learning?
- c. Explain the concept of Support Vector Machine.
- d. Explain Decision Tree with Example.
- e. Explain Artificial Neural Network.
- f. Explain theory of Learning.