

**MCA (Rep) Sem.-2 Examination
Artificial Intelligence**

Time : 3-00 Hours]

January-2025

[Max. Marks : 50

Instructions:

- Write both the Sections in the separate answer book.
- Both Sections having equal weightage.
- Draw Diagrams wherever necessary.
- Make Assumptions wherever necessary.

Section - I

- Q.1) Attempt the following (any five): [25]
- a. Explain the Steepest Ascent Hill Climbing method.
 - b. Explain magic square AI technique to solve the tic – tac – toe problem. Also write its advantages and disadvantages
 - c. Write the difference between BFS and DFS with example.
 - d. Explain Multi – layered Perceptron and back propagation algorithm.
 - e. Write short note on Turing test.
 - f. Explain any five environment types for an intelligent agent.

Section – II

- Q.2) Attempt the following (any two): [10]
- a. Explain the difference between Biological and Artificial neuron with the help of labelled diagram.
 - b. Explain the difference between Procedural and Declarative knowledge.
 - c. Take any two – problem characteristic of your choice and give its answer along with reasons for: 8 queen and 3 water jug problem.
- Q.3) Do the semantic network representation for the following statements (any five): [10]
- a. Sai went to the Narendra Modi stadium to watch cricket.
 - b. Sam watches Doraemon on TV at her home.
 - c. Simi lives in a green multi – stored apartment near the sea.
 - d. Simon went to an Italian restaurant and ordered pizza.
 - e. Jenny gave an AI book written by Kevin knight to Sam.
 - f. I own a brown letter bag and a red water bottle.
 - g. Tom sat on mat and tom is cat.

- Q.4) Write the predicate logic for the following sentences (any five): [05]
- a. Anita likes to watch all kinds of cartoon.
 - b. One who knows swimming does not know cooking.
 - c. Nobody likes to pay taxes.
 - d. Everyone is loyal to someone.
 - e. Not everyone knows drawing.
 - f. Sita and Gita are childhood best friends.