

Roll No.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Total No. of Pages : 02

Total No. of Questions : 09

MCA (Sem.-3)

ARTIFICIAL INTELLIGENCE & SOFT COMPUTING

Subject Code : PGCA1926

M.Code : 90799

Date of Examination : 02-12-2024

Time : 3 Hrs.

Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION - B & C. have FOUR questions each.
3. Attempt any FIVE questions from SECTION-B & C carrying TEN marks each.
4. Select atleast TWO questions from SECTION-B & C.

SECTION-A

I. Write short notes on :

- a. Write a brief note on backward chaining.
- b. List the differences between propositional logic and first order predicate logic.
- c. Write down the steps of A* search.
- d. What is pragmatic analysis in natural language processing?
- e. Differentiate between hard computing and soft computing.
- f. What is associative memory?
- g. Define minmax composition in fuzzy sets with the help of example.
- h. What is the significance of fitness function in genetic algorithm?
- i. Discuss some examples of activation functions used in neural networks.
- j. What are the various levels of artificial intelligence?

SECTION - B

2. Define artificial intelligence. Discuss the history of artificial intelligence. Explain how 8-queens can be formulated and solved as an artificial intelligence problem?
3. Discuss the salient features of propositional logic. Consider the following facts and construct a step-by-step proof by resolution of the statement "*John likes peanuts*".
 - a. John likes all kinds of food.
 - b. Apple and vegetable are foods.
 - c. Anything anyone eats and is not killed by is food.
 - d. Anil eats peanuts and is still alive.
 - e. Harry eats everything that Anil eats.
4. List the features of hill climbing algorithm. Write a brief note on simulated annealing.
5. What are the components of natural language processing? Explain the steps in the process of natural language processing.

SECTION-C

6. What are the requirements of soft computing? Discuss the major application areas of soft computing.
7. Write a detailed note on the architecture of backpropagation neural network. Explain the process of backpropagation learning.
8. Write short notes on :
 - a. Fuzzy decision making
 - b. Fuzzy classification.
9. Write down the steps of genetic algorithm. Discuss the operators in genetic algorithm.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.