

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

MCA (Sem.-3)

ARTIFICIAL INETELLIGENCE & SOFT COMPUTING

Subject Code :PGCA1926

M.Code :90799

Date of Examination : 04-12-2025

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 EIGHT marks each.
4. Select atleast TWO questions from SECTION-B & C.

SECTION-A

1. Answer briefly :

- Give one example each of depth-first search and breadth-first search.
- Define 'soft computing'. Give example of 'soft' and 'hard' computing.
- What is horn clause and its types in AI?
- Define machine models for natural language processing.
- What is tokenization and parsing? Why it is used in NLP?
- Give major areas of soft computing applications.
- Differentiate between feed-backward and back-propagating network.
- Define backtracking searching technique.
- What is learning and how a machine learns?
- What are fuzzy singleton rules?

SECTION - B

2. What is the difference between simple multiplication operation and convolution operation in a neural network learning for feature extraction.
3. A fuzzy set $Z=0.5/a+0.5/b+0.5/c$. Compute the normalized value of fuzziness of the set Z and discuss what your answer will prove?
4. Give historical timeline development of GA. Also, discuss various encoding methods used with GA.
5. What is first order logic? Where and why, it is used in AI algorithm development for inference generation?

SECTION - C

6. *"Data preprocessing by enumeration of feature labeling is must in supervised learning"*. Justify this statement in context to any suitable example of machine learning algorithm.
7. What are the different bitwise operators used in GA? Discuss mutation and crossover operators with examples of each.
8. How neural network models are trained to make them intelligent? What are major components used in model training? How the trained models are validated to verify their reliability?
9. Write short notes on 'Water-jug' and 'question-answering'.

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.