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Total No. of Pages : 02

Total No. of Questions : 07

BCA (Sem.-6) ARTIFICIAL INTELLIGENCE Subject Code : UGCA-1945 M.Code : 91689 Date of Examination : 03-01-2023

Time: 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

- 1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
- 2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Write briefly :

- a. Differentiate between general artificial intelligence and narrow artificial intelligence. Describe the Turing test for artificial intelligence and justify its validity from a modern standpoint.
- b. What is a production rule? Give an example and define two basic parts of the production rule.
- c. What is fuzzy logic? Define main operations of fuzzy sets. Provide examples.
- d. Design the class-frame for the object Student, determine its attributes and define several instances for this class.
- e. Write down the steps of depth first search. Illustrate with example.
- f. What do you mean by heuristic? What is the role of heuristic techniques in artificial intelligence?
- g. Discuss the issues in recognizing and understanding speech.
- h. What is the use of conceptual dependency in artificial intelligence?
- i. List and describe the five major players in the expert system development team. What is the role of the knowledge engineer?
- j. What is a production system model? List and define the five basic components of an expert system.

SECTION-B

- 2. What is Artificial Intelligence? Discuss the reasons behind increasing relevance of artificial intelligence. Discuss the advantages and limitations of artificial intelligence.
- 3. What is uncertainty? When can knowledge be inexact and data incomplete or inconsistent? Give an example of inexact knowledge. Explain Bayesian reasoning in detail.
- 4. Discuss the working of a genetic algorithm. What is the significance of fitness function? What are the uses of genetic algorithm?
- 5. Differentiate between greedy best first search and A* search. What is memory bounded search?
- 6. What is a pattern? How does pattern recognition work? Discuss the components of a pattern recognition system. Also, list the application areas of pattern recognition.
- 7. What are horn clauses? Consider the following facts; construct a step-by-step proof by resolution of the statement "*Mary is happy*".
 - a. Everyone who loves someone who loves them back is happy.
 - b. Mary loves everyone.
 - c. There is someone who loves Mary.

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