Roll No. | | | | | | | | | | | | 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.