

Roll No.

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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 : 01-06-2023

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. Express the "Shalu gave Mary a box of candy" sentences as predicate logic structure.
- b. Define a Clause
- c. Differentiate between Data, Belief, and Hypothesis.
- d. What is tautology?
- e. Mention any one application of heuristic search.
- f. Explain, by giving a suitable example, the use of property inheritance.
- g. Use Truth Table to prove that $\sim(P \vee Q)$ is equivalent to $\sim P \wedge \sim Q$
- h. What is back tracking?
- i. What is fuzzy logic?
- j. State what is predicate logic with example.

SECTION-B

2. What are the characteristics of a AI problem. Discuss with the help of travelling salesman problem.
3. What are the various characteristics of production system?
4. What are the various heuristic techniques. Explain how they are different from the solution guaranteed techniques.
5. Express the following facts in clause form :
 - a) Blondes have more fun
 - b) All men are created equal
 - c) You always hurt the one you love
 - d) For a spacecraft to fail, every copy of one of its system must malfunction.
6. Explain the A* algorithm. Under what situations it can be used?
7. Derive a parse tree for the sentence "Bill Loves the Frog" where the following rules are used :

S-> NP VP

NP-> N

NP-> DET N

VP-> V NP

DET-> the

V-> loves

N-> bill | frog

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.