Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

MCA (Sem.-5) ARTIFICIAL INTELLIGENCE Subject Code : MCA-501 M.Code : 74381 Date of Examination : 12-12-22

Time: 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

- 1. SECTIONS-A, B, C & D contains TWO questions each carrying TEN marks each and students has to attempt any ONE question from each SECTION.
- 2. SECTION-E is COMPULSORY consisting of TEN questions carrying TWENTY marks in all.

SECTION-A

- 1. What was the objective of Turing test? Identify and explain various application areas of the underlying concept of Turing test.
- 2. What is the role of production system in problem state space? List and explain its characteristics with examples.

SECTION-B

- 3. What do you mean by Informed Search Technique? List and explain various informed search techniques with suitable examples.
- 4. Apply min-max algorithm with alpha-beta pruning on following game tree and identify the pruned branches.



SECTION-C

- 5. During knowledge representation, what are the ways to identify appropriate structure to represent relevant parts of the dataset? Discuss various knowledge representation issues using suitable examples.
- 6. Express the following statements in predicate logic. Consider appropriate predicates.
 - a) Some student in this class has visited Mumbai but has not visited Kerala.
 - b) All students in this class have learnt at least one programming language.
 - c) A student in this class has taken every course offered by one of the departments in this college.
 - d) Every Student in this class plays some sport.

SECTION-D

- 7. Create a Frame representation of a guest room in a hotel. Consider objects such as chair, table, bed etc. and attributes such as location, height, color etc. Mention all attributes and different relationship among objects.
- 8. Write short notes on: a) Formal Grammar b) Baye's Rule.

SECTION-E

- 9. a) List the advantages of Depth first search and Breadth first search techniques.
 - b) What is the role of artificial intelligence in robotics?
 - c) Give an example of conceptual dependency structure.
 - d) List various problem characteristics of tic-tac-toe problem.
 - e) Define the state space of Water-Jug problem.
 - f) What do you mean by perfect decision game?
 - g) What is first-order predicate logic?
 - h) List some applications of fuzzy logic.
 - i) What are belief networks?
 - j) What is clausal form representation in predicate logic?

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.