

K-1008

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[Roll No.]

MCA-E6

**MCA IVth Semester
Examination Dec., 2023**

ARTIFICIAL INTELLIGENCE

Time : 2 Hours]

[Max. Marks : 70

Note :- This paper is of Seventy (70) marks divided into two (02) Sections 'A' and 'B'. Attempt the questions contained in these Sections according to the detailed instructions given there in. Candidates should limit their answers to the questions on the given answer sheet. No additional (B) answer sheet will be issued.

Section-A

(Long Answer Type Questions) 2×19=38

Note :- Section 'A' contains Five (05) Long-answer type questions of Nineteen (19) marks each. Learners are required to answer any two (02) questions only.

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(1)

P.T.O.

1. Explain the following search techniques with their advantages and disadvantages :
 - (i) breadth
 - (ii) BFS
 - (iii) DFS
2. How the performance of a learning algorithm is assessed ? Draw a learning curve for the decision tree algorithm.
3. Discuss the heuristic function. Explain how the heuristic function help during search procedure. Discuss with suitable example.
4. Discuss the following in detail :
 - (i) LISP
 - (ii) PROLOG
 - (iii) Fuzzy Set
 - (iv) Rule Based Learning
5. Using a neat diagram explain architecture, characteristic features and roles of expert system.

Section–B

(Short Answer Type Questions) 4×8=32

Note :- Section ‘B’ contains Eight (08) Short-answer type questions of Eight (08) marks each. Learners are required to answer any *four* (04) questions only.

1. What do you mean by state space problem ? Discuss water jug problem in detail.
2. What do you mean by reinforcement learning ?
3. What do you mean by supervised and unsupervised learning ? What are the characteristics and difference between them ?
4. Discuss about the role of reasoning in artificial intelligence. How predicate logic is used to represent knowledge in AI systems ?
5. Briefly discuss about deep learning and deep reinforcement learning.
6. What is Markov process ? Explain it through suitable example.
7. What do you mean by overfitting ? How an overfitting can be avoided ?
8. Explain unification algorithm in detail with suitable example.
