



C20-CAI-302

**7317**

**BOARD DIPLOMA EXAMINATION, (C-20)**

**OCTOBER/NOVEMBER—2023**

**DCAI – THIRD SEMESTER EXAMINATION**

**ARTIFICIAL INTELLIGENCE**

*Time : 3 Hours ]*

*[ Total Marks : 80*

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**PART—A**

3×10=30

- Instructions :** (1) Answer **all** questions.  
(2) Each question carries **three** marks.  
(3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. List any three key features of Prolog.
2. State the importance of dynamic databases in Prolog.
3. What is Artificial Intelligence?
4. List any three problem characteristics in AI.
5. Define logic programming in AI.
6. List any three differences between forward and backward reasoning.
7. State the importance of game playing in Artificial Intelligence.
8. State the purpose of expected value in game theory.
9. Define fuzzy logic.
10. State the importance of fuzzy Bayesian networks.

- Instructions :** (1) Answer **all** questions.  
(2) Each question carries **eight** marks.  
(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

**11.** (a) Explain recursion in Prolog with example program.

**(OR)**

(b) Explain backtracking in Prolog with example.

**12.** (a) Explain the production systems in AI in detail.

**(OR)**

(b) Explain DFS algorithm in detail.

**13.** (a) List and explain the types of knowledge in AI.

**(OR)**

(b) Explain computable functions and predicates with suitable examples.

**14.** (a) List and explain components of search problems.

**(OR)**

(b) Explain games that include an element of chance with suitable examples.

**15.** (a) Explain fuzzy sets with suitable examples.

**(OR)**

(b) List and explain types of neuro-fuzzy systems in detail.

**PART—C**

10×1=10

- Instructions :** (1) Answer the following question.  
(2) The question carries **ten** marks.  
(3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

**16.** How does knowledge representation contribute to AI?

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