

CMR ENGINEERING COLLEGE: : HYDERABAD

UGC AUTONOMOUS

II-B.TECH-II-Semester End Examinations (Supply) -June- 2025

ARTIFICIAL INTELLIGENCE

(CSM)

[Time: 3 Hours]

[Max. Marks: 70]

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 20 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART-A**(20 Marks)**

1. a) What is the difference between Artificial Intelligence (AI) and Machine learning (ML)? [2M]
- b) What is backtracking in constraint satisfaction problems? [2M]
- c) Define stochastic search. [2M]
- d) What is backward chaining in the context of AI? [2M]
- e) What are two main causes of uncertainty? [2M]
- f) What are the 4 knowledge representations in AI? [2M]
- g) What type of learning involves memorizing facts and information? [2M]
- h) What is a decision tree in ML? [2M]
- i) Define an expert system shell. [2M]
- j) What are the two limitations of expert systems? [2M]

PART-B**(50 Marks)**

2. Discuss the different types of agents and their characteristics. [10M]

OR

3. Explain the depth-first search with an iterative deepening strategy, including its advantages and disadvantages. [10M]

4. Analyze how propositional and first-order logic contribute to knowledge representation and reasoning in AI. [10M]

OR

5. Discuss how Baye's Theorem is used to support decision-making processes in uncertain environments. [10M]

6. Explain non-monotonic reasoning with an example. [10M]

OR

7. Analyze the role of basic probability and Baye's Rule in reasoning. [10M]

8. Analyze Winston's Learning Program. [10M]

OR

9. Describe the structure and functioning of decision trees. [10M]

10. Elaborate the challenges associated with knowledge acquisition in the creation of expert systems. [10M]

OR

11. Discuss the components of an expert system, emphasizing the role of representing and using domain knowledge. [10M]
