

**CMR ENGINEERING COLLEGE: : HYDERABAD**  
**UGC AUTONOMOUS**

**III-B.TECH-I-Semester End Examinations (Regular) - December- 2025**

**ARTIFICIAL INTELLIGENCE**  
**(COMMON FOR CSE, IT, CSD)**

**[Time: 3 Hours]**

**[Max. Marks: 60]**

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

Part A is compulsory which carries 10 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.

**PART-A**

**(10 Marks)**

1. a) Define an intelligent agent in AI. [1M]
- b) Define a Heuristic Function ( $h(n)$ ). [1M]
- c) Mention one way to improve CSP efficiency. [1M]
- d) What is the role of Wumpus world in AI? [1M]
- e) How FOL is differ from Propositional Logic? [1M]
- f) What type of reasoning is used in Backward Chaining? [1M]
- g) What are events in Knowledge Representation? [1M]
- h) Define Mental Events in AI. [1M]
- i) Define Dempster-Shafer Theory. [1M]
- j) What is Uncertainty in AI? [1M]

**PART-B**

**(50 Marks)**

- 2.a) Differentiate Informed & Uninformed search. Give examples. [5M]
- b) What is A\* search? Explain with example? [5M]

**OR**

3. Explain Hill-Climbing Search and its types with examples. [10M]

4. Demonstrate the structure of problems in CSP. [10M]

**OR**

5. What is Propositional Logic? How knowledge is represented by using propositional logic. [10M]

6. Describe Reasoning Systems for Categories and Objects in knowledge representation. [10M]

**OR**

- 7.a) Explain Unification and Lifting in Inference in First Order Logic. [5M]
- b) Explain Backward Chaining in First Order Logic. [5M]

8. Discuss Reasoning with Default Information for Knowledge Representation. [10M]

**OR**

9. Explain Planning Graphs and its applications. [10M]

- 10.a) Explain the Bayes' Rule and its Uses. [5M]
- b) How does uncertainty arise in Artificial Intelligence? [5M]

**OR**

11. Explain Inference using Full Joint Distributions in Uncertain Knowledge and Learning Uncertainty. [10M]

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