

Code No.: (R22CS503PC)

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H.T.No.

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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 Proportional 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]
