

Code No.: DS602PC

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CMR ENGINEERING COLLEGE : HYDERABAD
UGC AUTONOMOUS
III-B.TECH-II-Semester End Examinations (Regular) - June- 2024
ARTIFICIAL INTELLIGENCE
(CSD)

[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 are the main steps involved in solving a problem using AI techniques? [2M]
- b) What are the characteristics of the problem? [2M]
- c) Provide examples of how propositional calculus can be applied to solve logical problems. [2M]
- d) What is propositional logic? [2M]
- e) Define expert systems. [2M]
- f) What is a truth maintenance system (TMS)? [2M]
- g) Define deductive learning. [2M]
- h) What is machine learning? [2M]
- i) What is natural language processing? [2M]
- j) List different phases of sentence analysis in NLP. [2M]

PART-B

(50 Marks)

2. What is a bounded look-ahead strategy? How is it implemented in AI problem-solving? [10M]
- OR**
3. Describe the A* search algorithm and its significance. [10M]
4. Compare semantic networks and frames as techniques for knowledge representation. What are the strengths and weaknesses of each? [10M]
- OR**
5. What are extended semantic networks? How do they improve upon traditional semantic networks? [10M]
6. Describe the Dempster-Shafer theory of evidence and how it differs from traditional probability theory. [10M]
- OR**
7. Explain certainty factor theory and its role in managing uncertainty in expert systems. [10M]
8. What is clustering in the context of machine learning? Explain its importance and applications. [10M]
- OR**
9. What are the key design issues to consider when developing an artificial neural network? [10M]
10. Define grammars and parsers in the context of NLP. How do they contribute to sentence analysis? [10M]
- OR**
11. Explain universal networking knowledge with neat diagram. [10M]
