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B. Tech. 3<sup>rd</sup> Semester, (CSE-AI&MLE) (G-Scheme)

Examination, December-2023

ARTIFICIAL INTELLIGENCE

Paper-PCC-CSE-304-G

Time allowed : 3 hours] [Maximum marks : 75

Note : Q. No. 1 is compulsory. Attempt five questions in total by selecting one from each Unit.

1. (a) What do you mean by term Heuristics. (2.5)
- (b) Existential Quantifier Vs Universal Quantifier in Predicate Logic. (2.5)
- (c) Discuss Limitations of propositional logic. (2.5)
- (d) What do you mean by term Alpha-Beta cut off in Game Playing. (2.5)
- (e) What is Knowledge Base? How it is different from Database? (2.5)

Unit-I

2. (a) Differentiate between Blind Search Techniques and Heuristic Search. (7)
- (b) Explain the term Genetic Algorithms with example. Also, write it's advantages. (8)
3. Explain A\* algorithm with the help of example. How is A\* algorithm different from AO\*? Give the drawbacks of these algorithms. (15)

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**Unit-II**

4. (a) Differentiate between Semantic Net and Partitioned Net. (10)  
(b) Represent the given sentence with semantic Network. "John gives a book to Marry." (5)
5. What do you mean by First Order Predicate Logics. Write various steps required to convert a fact into CNF (Clause Normal Form). (15)

**Unit-III**

6. (a) Differentiate between Statistical Reasoning and Symbolic Reasoning. (7)  
(b) Explain Dempster-Shafer Theory with example. (8)
7. (a) Explain Partial Order Planning algorithm with an example. (8)  
(b) What do you mean by Planning in AI? How plans are represented in AI. (7)

**Unit-IV**

8. Explain architecture of Rule base Expert System. Write application of Expert Systems in various domains. (15)
9. Explain the term ANN (Artificial Neural Network).
  - (a) Also, Explain it's architecture. (7)
  - (b) Explain Current Trends in AI. (8)