

**III B. Tech I Semester Supplementary Examinations, July – 2023**  
**ARTIFICIAL INTELLIGENCE**  
 (Common to CSE, IT)

Time: 3 hours

Max. Marks: 70

Answer any **FIVE** Questions **ONE** Question from **Each unit**  
 All Questions Carry Equal Marks  
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UNIT-I

1. a) Elucidate the real time application areas of Artificial Intelligence. [7M]  
 b) Briefly explain the history of Artificial Intelligence. [7M]  
 (OR)
2. a) Discuss the various strategies of Tic-Tac-Toe Game playing. [7M]  
 b) Explain the current trends in Artificial Intelligence [7M]

UNIT-II

3. a) Illustrate the heuristic search technique for hill-climbing problem with neat sketches. [7M]  
 b) Discuss the forward state space search with an example. [7M]  
 (OR)
4. a) Briefly discuss the A\* algorithm with an example. [7M]  
 b) Give detailed description on Problem Reduction & Game Playing. [7M]

UNIT-III

5. a) Describe the rules and interpretations of natural deduction method. [7M]  
 b) State and prove the Deduction Theorem. [7M]  
 (OR)
6. a) Illustrate the predicate logic representation with reference to suitable example? [7M]  
 b) Explain the Semantic Tableaux System in propositional logic. [7M]

UNIT-IV

7. a) Explain the knowledge representation using frames [7M]  
 b) Clearly explain the extended semantic network for knowledge representation using an example. [7M]  
 (OR)
8. a) Elucidate the generation of conceptual dependency representations using an example. [7M]  
 b) Explain the step by step representations of script structure. [7M]

UNIT-V

9. a) What is expert system and explain the phases in building an expert system. [7M]  
 b) Explain the advantages of expert system over traditional system in all aspects. [7M]  
 (OR)
10. a) Explain the logic based truth maintenance system with an example? [7M]  
 b) Explain the applications of expert systems. [7M]

