Code No: R2021431 **R20** SET - 1

II B. Tech I Semester Supplementary Examinations, July-2023
INTRODUCTION TO ARTIFICIAL INTELLIGENCE
CSE (Introduction to Artificial Intelligence)

Time: 3 hours Max. Marks: 70

Answer any **FIVE** Questions, each Question from each unit
All Questions carry **Equal** Marks
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UNIT-I

1 a) Describe the evolutionary stages of AI from gestation to intelligent agents in detail. [7M]
b) What is a rational agent? How to incorporate the good behavior with omniscience, learning and autonomy? Explain with its dependent components. [7M]

Or

2 a) Explain the state of art applications of AI. Discuss AI applications in Supermarkets, Web search Engines, Internet routing algorithms in detail. [7M]
b) Elaborate the structure of agent programs. Explain the table-driven approaches, simple reflex and model based reflex agents in detail. [7M]

UNIT-II

3 a) How to use infrastructure for search algorithms? Explain the criterion measures used for measuring problem solving performance. [7M]
b) Present the genetic algorithm used for search. Illustrate with 8-queen's problem. [7M]

Or

4 a) What is heuristic search strategy? Explain the minimization of the total estimated solution cost with A* search and optimality of A*. [7M]
b) Prove that breadth first search is special case of uniform search and depth first search is a special case of best fit tree search strategies. [7M]

UNIT-III

5 a) Illustrate the responsibilities of knowledge based agents through typical Wumpus problem. [7M]
b) How to incorporate knowledge about beliefs and about deductions using mental events and mental objects? Explain in detail [7M]

Or

6 a) Write about simple and powerful logic used in AI. Explain its syntax and semantics with suitable examples. [7M]
b) How do semantic networks and description logics are different in reasoning systems for categories. [7M]

UNIT-IV

7 a) What is Bayesian network? Explain the methods for constructing them and discuss the role of compactness and ordering of nodes. [7M]
b) Write about the probabilities and language of propositions in probability assertions in detail with examples. [7M]

Or
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8 a) Write about probabilistic inference and inference using full joint distributions with suitable example. [7M]

b) What is independence and absolute independence? Give the examples of factoring a large joint distribution into smaller distributions using them. [7M]

UNIT-V

9 (i)Can machines act and think with intelligence? (ii)Perform SWOT analysis and elaborate on strengths and weaknesses. [7+7M]

Or

10 (i)Describe the architecture of agents and agent components. (ii)Explain the process of moving towards right directions. Give some examples. [7+7M]