

[6403]-45

T.E. (Computer Engineering)
ARTIFICIAL INTELLIGENCE
(2019 Pattern) (Semester - VI) (310253)

*Time : 2½ Hours]**[Max. Marks : 70**Instructions to the candidates:*

- 1) Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right side indicate full marks.
- 4) Assume Suitable data if necessary.

Q1) a) Explain Alpha-Beta tree search and cut off procedure with example. [9]
 b) Explain in details the concept of backtracking and constraint propagation to solve n-queens problem. [8]

OR

Q2) a) What is constraint satisfaction problem? Explain with example. [5]
 b) Compare and contrast the stochastic games and partial observable games. [4]
 c) How AI technique is used to solve tic-tac-toe problem. [8]

Q3) a) Explain Wumpus world environment with PEAS description. [9]
 b) What is knowledge representation in propositional logic? Compare and contrast PL and FOL. [8]

OR

Q4) a) Explain different inference rules in FOL with suitable example. [9]
 b) What is an agent? Explain knowledge based agent with architecture diagram, also state the significance of inference engine. [8]

Q5) a) Illustrate with an example the use of the unification algorithm to prove the concept of resolution. [9]
 b) Define and explain the forward changing with example, analyze the differences between forward and backward changing. [9]

OR

Q6) a) Describe Ontological Engineering w.r.t. Categories, Objects and Model. [9]

b) Define First order Logic, Explain FOL inference for following classifiers. [9]

- i) Universal Generalization
- ii) Universal Instantiation
- iii) Existential Instantiation
- iv) Existential Introduction

Q7) a) Explain the algorithm for classical planning with an example. [6]

b) Analyze various planning approaches in AI. [6]

c) Explain the Hierarchical planning with relevant example. [6]

OR

Q8) a) Explain with example how planning is different than problem solving. [6]

b) Explain types of planning in details. [6]

c) Explain AI components and AI Architecture. [6]

