

Total No. of Questions : 8]

SEAT No. :

P-7547

[Total No. of Pages : 3

[6180]-55

T.E. (Computer Engineering)
ARTIFICIAL INTELLIGENCE

(2019 Pattern) (Semester - II) (310253)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates :

- 1) Answer four questions 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) Assume suitable data if necessary.

Q1) a) List All problem solving strategies. What is backtracking, explain with n queen problem. [8]

b) Write Minimax Search Algorithm for two players. How use of alpha and beta cut-offs will improve performance? [9]

OR

Q2) a) Define Game theory, Differentiate between stochastic and partial games with examples. [9]

b) Define is Constraint satisfaction problem, State the types of consistencies. Solve the following Crypt Arithmetic Problem. [8]

$$\begin{array}{rcccc} & B & A & S & E \\ + & B & A & L & L \\ \hline G & A & M & E & S \end{array}$$

Q3) a) What is an Agent. Name any 5 agents around you Explain Knowledge based agent with Wumpus World. List and explain in short the various steps of knowledge engineering process [9]

Consider the following axioms: If a triangle is equilateral then it is isosceles.

b) If a triangle is isosceles, then its two sides AB and AC are equal. If AB and AC are equal, then angle B and C are equal. ABC is an equilateral triangle. Represent these facts in predicate logic. [9]

OR

P.T.O.

- Q4) a)** Write the following sentences in FOL (using types of quantifiers) [9]
- All birds fly
 - Some boys play cricket
 - A first cousin is a child of a parent's sibling
 - You can fool all the people some of the time and some of the people all the time, but you cannot fool all the people all the time
- b) What is Knowledge Representation using propositional Logic? Compare propositional and predicate Logic. [9]

- Q5) a)** Explain Forward Chaining and Backward Chaining. With its Properties, advantages and Disadvantages. [9]

Explain :

- b) i) Unification in FOL [8]
- ii) Reasoning with Default information

OR

- Q6) a)** Explain FOL inference for following Quantifiers [8]

- Universal Generalization
- Universal Instantiation
- Existential Instantiation
- Existential introduction

- b) What is Ontological Engineering, in details with its categories object and Model. [9]

- Q7) a)** Explain with an example Goal Stack Planning (STRIPS algorithm). [5]

- b) Explain with example, how planning is different from problem solving. [5]
- c) Explain AI components and AI architecture. [8]

OR

- Q8) a) Explain Planning in non deterministic domain. [5]
- b) Explain [5]
- i) Importance of planning.
 - ii) Algorithm for classical planning .
- c) What is AI Explain. Scope of AI in all walks of Life also explain Future opportunities with AI. [8]

