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 followiig Crypt Arithmetic Problem. **[8]**

```
   B  A  S  E
+  B  A  L  L
-------------
   G  A  M  E  S
```

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]**

i) All birds fly

ii) Some boys play cricket

iii) A first cousin is a child of a parent's sibling

iv) 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]**

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