

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VIII(NEW) EXAMINATION – SUMMER 2019****Subject Code:2180703****Date:15/05/2019****Subject Name:Artificial Intelligence****Time:10:30 AM TO 01:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

		MARKS
<b>Q.1</b>	(a) What is Soft Computing?	<b>03</b>
	(b) Describe Depth First Search.	<b>04</b>
	(c) For the Water Jug problem, describe state space representation, actions, start and end state.	<b>07</b>
<b>Q.2</b>	(a) Discuss limitation of hill-climbing method.	<b>03</b>
	(b) What is heuristic function? Discuss with an example.	<b>04</b>
	(c) Discuss A* algorithm. Also give one example to explain it.	<b>07</b>
	<b>OR</b>	
	(c) Discuss Simulated Annealing search method. How is it different than greedy method?	<b>07</b>
<b>Q.3</b>	(a) Discuss Fail in prolog.	<b>03</b>
	(b) Differentiate with example representation of “Instance” and “Isa” relationships.	<b>04</b>
	(c) Explain with example how choosing the granularity of representation and finding the right structure are crucial issues in knowledge representation?	<b>07</b>
	<b>OR</b>	
<b>Q.3</b>	(a) Define epoch with respect to ANN.	<b>03</b>
	(b) Write a PROLOG program to count total occurrence of a character in a given list of characters.	<b>04</b>
	(c) What is wrong with the following arguments?	<b>07</b>
	<ul style="list-style-type: none"><li>• Men are widely distributed over the earth</li><li>• Socrates is a man.</li><li>• Therefore, Socrates is widely distributed over the earth.</li></ul>	
	How should the facts represented by these sentences be represented in logic so that this problem does not arise?	
<b>Q.4</b>	(a) Discus perceptron.	<b>03</b>
	(b) Explain Hopfield Network.	<b>04</b>
	(c) Differentiate Fuzzy logic and Crisp logic. Also describe set operations on fuzzy and crisp logic.	<b>07</b>
	<b>OR</b>	
<b>Q.4</b>	(a) Discuss non-monotonic reasoning.	<b>03</b>
	(b) Discuss various defuzzification methods.	<b>04</b>
	(c) Discuss Nonlinear Planning using Constraint Posting with example.	<b>07</b>
<b>Q.5</b>	(a) Write a prolog program to check whether or not given number is positive.	<b>03</b>
	(b) Discuss Bayesian network and its application.	<b>04</b>
	(c) Discuss min-max search method with an example.	<b>07</b>

**OR**

- Q.5**
- |     |   |           |
|-----|---|-----------|
| (a) | Discuss Iterative deepening search method.                  | <b>03</b> |
| (b) | Explain various steps of Natural Language Processing        | <b>04</b> |
| (c) | Define: Frames. Draw Semantic Net for following statements. | <b>07</b> |
|     | a) Every kid likes candy.                                   |           |
|     | b) Every school going kid likes candy.                      |           |

\*\*\*\*\*

[www.FirstRanker.com](http://www.FirstRanker.com)