

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

OR

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