Seat No.: _____   **www.FirstRanker.com**   Enrolment No. **www.FirstRanker.com**

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–VIII (OLD) EXAMINATION – WINTER 2018

Subject Code: 180703   **Date: 26/11/2018**
Subject Name: Artificial Intelligence
Time: 02:30 PM TO 05:00 PM   **Total Marks: 70**
Instructions:
1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q.1	**(a)**	What are the Problem Characteristics of Artificial Intelligence?	**07**
	(b)	Differentiate the DFS and BFS with merits and demerits.	**07**
Q.2	**(a)**	What is Hill Climbing? Explain Simple Hill Climbing and Steepest Ascent Hill Climbing.	**07**
	(b)	Explain A* algorithm.	**07**
		OR	
	(b)	Explain the State Space with the use of 8 Puzzle Problem	**07**
Q.3	**(a)**	Explain the Forward and Backward Reasoning.	**07**
	(b)	Explain the different issues in Knowledge representation	**07**
		OR	
Q.3	**(a)**	What is Natural Language Processing? Explain each step of NLP.	**07**
	(b)	Explain Inference Rules in Propositional Calculus	**07**
Q.4	**(a)**	Explain the algorithm of predicate logic resolution	**07**
	(b)	Explain CUT, FAIL & REPEAT predicates in PROLOG.	**07**
		OR	
Q.4	**(a)**	Explain the properties that a good knowledge representation system should possess.	**07**
	(b)	Explain Semantic Net & Frame with suitable example	**07**
Q.5	**(a)**	What is an expert system? Explain Architecture of an Expert system.	**07**
	(b)	Write a short note on: Hopfield Networks	**07**
		OR	
Q.5	**(a)**	Write a prolog program to count vowels in a list of characters.	**07**
	(b)	Write a Prolog program to solve Tower of Hanoi Problem.	**07**

****