Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME SEMESTER II EXAMINATION – SUMMER 2017

Subject Code: 2720510 **Date: 31/05/2017**

Subject Name: Introduction to 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)**	Solve the following constraint satisfaction problem. E A T + T H A T A P P L E	**07**
	(b)	Why does the search in game-playing programs always proceed forward from the current position rather than backward from the goal state?	**07**
Q.2	**(a)**	Define the logic behind – Hill climbing, Best-First Search, BFS and DFS.	**07**
	(b)	What are the various resolution strategies?	**07**
		OR	
	(b)	Discuss the major areas of artificial intelligence used in Communication System with example.	**07**
Q.3	**(a)**	Define State space search. Solve the tower of hanoi problem using state space search.	**07**
	(b)	Explain the roles of a knowledge engineer, domain expert and an end user in an expert system.	**07**
		OR	
Q.3	**(a)**	What is the difference between neural network and fuzzy network?	**07**
	(b)	Describe the frame structure for news collection system.	**07**
Q.4	**(a)**	Explain the concept of learning by induction with example.	**07**
	(b)	What are the different types of learning rules? Explain in brief.	**07**
		OR	
Q.4	**(a)**	Solve the 8-puzzle problem using heuristic of your own choice.	**07**
	(b)	What are the merits and demerits of Back Propagation Algorithm? Also discuss the applications of Back Propagation Algorithm.	**07**
Q.5	**(a)**	What is min-max procedure in game playing? Explain the search efficiency of Alpha-Beta procedure using proper example.	**07**
	(b)	Discuss the trend analysis and seasonal effects in Statistical methods.	**07**
		OR	
Q.5	**(a)**	Explain the defuzzification methods using sample example.	**07**
	(b)	Write a prolog program for following: - To append a list - To reverse a list	**07**

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