Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – II • EXAMINATION – WINTER • 2013

Subject code: 1710410 **Date: 04-01-2014**

Subject Name: Introduction to Artificial Intelligence

Time: 10.30 am – 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.**

Q.1	**(a)**	What is Artificial Intelligence? What can AI systems do ? What can AI systems NOT do yet?	**07**
	(b)	Solve 'water jug problem' using Production Rule System.	**07**
Q.2	**(a)**	Explain and solve the below cryptarithmetic problem.	**07**

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	(b)	What is Hill-climbing search? What are the variants of Hill-climbing? What are the problems faced by hill-climbing search?	**07**
		OR	
	(b)	Explain and Differentiate Uninformed Search and Informed Search strategies	**07**
Q.3	**(a)**	Explain in brief Breadth-first search with any of suitable example.	**07**
	(b)	Explain Production system and its different categories with example.	**07**
		OR	
Q.3	**(a)**	Explain Best-first-search with its advantages. What is Recursive best-first search?	**07**
	(b)	Explain briefly simulated annealing search	**07**
Q.4	**(a)**	Define a game. Explain briefly the minmax algorithm	**07**
	(b)	Explain A* search algorithm.	**07**
		OR	
Q.4	**(a)**	Explain alpha beta pruning algorithm with its procedure.	**07**
	(b)	Make a state space representation of the following problems (1) Monkey Banana problem (2) Traveling Salesman Problem	**07**
Q.5	**(a)**	Differentiate (1) Feed forward and feedback networks (2) Linearly separable and non-separable problems (3) Supervised and unsupervised learning	**07**
	(b)	Explain architecture and characteristics of Expert System	**07**
		OR	
Q.5	**(a)**	What is fuzzy set? Explain membership function and defuzzification methods	**07**
	(b)	Explain Back propagation Training Algorithm	**07**

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