Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – II • EXAMINATION – SUMMER • 2014

Subject code: 1710410 **Date: 25-06-2014**

Subject Name: Introduction to Artificial Intelligence

Time: 02:30 pm - 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 is Hill-climbing search? What are the variants of Hill-climbing? What are the problems faced by hill-climbing search?	**07**
	(b)	Explain the Breadth-first search technique with an appropriate example.	**07**
Q.2	**(a)**	List and explain the advantages of Best-first-search. What is Recursive best-first Search? Explain.	**07**
	(b)	Show the partial state space for Travelling salesman problem using breadth first search and depth first search.	**07**
		OR	
	(b)	Explain how AND-OR graph differs from OR graph? Explain the same with an appropriate example.	**07**
Q.3	**(a)**	Solve given crypt arithmetic problem using constraint satisfaction. S E N D +M O R E ---------- FUNDS	**07**
	(b)	Assume the following facts. 1. Khushi only likes easy courses. 2. Engineering courses are hard. 3. All the courses of MBA are easy. 4. HRM is a course associated with MBA. Use resolution to answer the question ñWhat course would Khushi like?ò	**07**
		OR	
Q.3	**(a)**	Explain the architecture of Neural network. Also explain the application areas of Neural network.	**07**
	(b)	What is an Expert System? Explain its architecture and characteristic.	**07**
Q.4	**(a)**	What is defuzzification? Explain any three defuzzification methods with suitable example.	**07**
	(b)	Make a state space representation of the following problems: (1) Monkey Banana problem (2) Traveling Salesman Problem	**07**
		OR	
Q.4	**(a)**	Explain briefly simulated annealing search.	**07**
	(b)	What is a game? Explain the minmax algorithm in detail.	**07**
Q.5	**(a)**	List the differences for the following: (a) Linearly separable and non-separable problems (b) Supervised and unsupervised learning (c) Feed forward and feedback networks	**07**
	(b)	Explain the working mechanism of alpha beta pruning algorithm along with its procedure.	**07**
		OR	
Q.5	**(a)**	Explain A* search algorithm.	**07**
	(b)	Explain Back propagation Training Algorithm.	**07**

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