Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY
BE SEM-VIII Examination May 2012
Subject code: 180703
Subject Name: Artificial Intelligence (Department Elective- II)

Date: 08/05/2012 **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)**	Explain the State Space with the use of Water Jug Problem.	**07**
	(b)	Differentiate the DFS and BFS with merits and demerits.	**07**
Q.2	**(a)**	Solve the following Cryptarithmetic Problem. S E N D + M O R E M O N E Y	**07**
	(b)	What is Hill Climbing? Explain Simple Hill Climbing and Steepest-Ascent Hill Climbing.	**07**
		OR	
	(b)	Assume the following facts : • Steve only likes easy courses. • Science courses are hard. • All the courses in the basketweaving department are easy. • BK301 is a basketweaving course. Use Resolution to answer the question, "What Course would Steve like?"	**07**
Q.3	**(a)**	Explain the Forward and Backward Reasoning.	**07**
	(b)	What are the Applications, Features and Limitations of Prolog?	**07**
		OR	
Q.3	**(a)**	Demonstrate the use of Cut and Fail Predicates in Prolog with example.	**07**
	(b)	What are the Problem Characteristics of Artificial Intelligence?	**07**
Q.4	**(a)**	Describe the various steps of Natural language Processing.	**07**
	(b)	Explain the algorithm for Backpropagation in Neural Networks.	**07**
		OR	
Q.4	**(a)**	Explain the Alpha-Beta Cutoffs Procedure in Game Playing.	**07**
	(b)	Describe the Expert System Development Procedure.	**07**
Q.5	**(a)**	Construct the partitioned semantic net representations for the following: • Every batter hit a ball. • All the batters like the pitcher.	**07**
	(b)	Explain the Bayesian Networks.	**07**
		OR	
Q.5	**(a)**	Describe briefly the applications of Neural Networks.	**07**
	(b)	Explain the Nonmonotonic reasoning.	**07**