

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER–VIII • EXAMINATION – SUMMER 2013****Subject Code: 180703****Date: 09/05/2013****Subject Name: Artificial Intelligence (Department Elective – II)****Time: 10:30 am TO 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 8 Puzzle Problem. 07
 (b) Discuss the AI Problem Characteristics in detail. 07
- Q.2 (a) Solve the following Cryptarithmic Problem. 07

$$\begin{array}{r} \text{B E S T} \\ + \text{M A D E} \\ \hline \text{M A S E R} \end{array}$$

 (b) What is local maximum, Plateau and Ridge? 07
 OR
 (b) Assume the following facts : 07
- John likes all kinds of food.
 - Apples are food.
 - Chicken is food.
 - Anything anyone eats and isn't killed by is food.
 - Bill eats peanuts and is still alive.
 - Sue eats everything Bill eats.
- Translate these sentences into formulas in Predicate logic
 - Prove that John likes peanuts using backward chaining.
- Q.3 (a) Explain the Best-First-Search Procedure with example. 07
 (b) What is Red Cut and Green Cut in Prolog? 07
 OR
- Q.3 (a) Demonstrate the use of Repeat Predicate in Prolog with example. 07
 (b) Explain the Minimax Procedure with example. 07
- Q.4 (a) Explain Probability and Bayes Theorem. 07
 (b) Write a prolog program to solve Tower of Hanoi Problem. 07
 OR
- Q.4 (a) What is Non-monotonic Reasoning. 07
 Q.4 (b) Describe the Expert System Development Procedure. 07
- Q.5 (a) Explain semantic net and frames with proper example. 07
 (b) Explain the Bayesian Networks. 07
 OR
- Q.5 (a) Describe briefly the applications of Neural Networks. 07
 (b) Explain Semantic and Syntactic analysis in NLP. 07
