

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VIII (Old) EXAMINATION – WINTER 2019****Subject Code: 180703****Date: 27/11/2019****Subject Name: 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) Explain the “Turing test”. Discuss its importance in intelligence machine **07**
(b) Explain & Solve Water-Jug Problem **07**
- Q.2** (a) Explain State Space Search using 8 Puzzle problem **07**
(b) Explain the Forward and Backward Reasoning **07**
- OR**
- (b) Explain any problem solved using Depth First Search technique **07**
- Q.3** (a) Discuss A* algorithm. Give one example where it is suitable to apply. **07**
(b) Explain Min-Max Search with example. **07**
- OR**
- Q.3** (a) Solve The following Crypt arithmetic problem **07**
C R O S S
+ R O A D S

D E N G E R
(b) Explain Proposition Calculus. **07**
- Q.4** (a) Write Prolog Program to solve Tower of Hanoi Problem **07**
(b) What is Hill Climbing? Explain Simple Hill Climbing and Steepest- Ascent Hill Climbing **07**
- OR**
- Q.4** (a) Write a prolog program to find sum of all the numbers of a list. **07**
(b) Explain non-monotonic reasoning in detail **07**
- Q.5** (a) Explain steps of Natural Language Processing. **07**
(b) What is an expert system? Explain Architecture of an Expert system **07**
- OR**
- Q.5** (a) Explain Semantic Net and Frame with example **07**
(b) Explain Artificial Neural Network. **07**
