

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VIII (OLD) EXAMINATION – WINTER 2018

Subject Code: 180703

Date: 26/11/2018

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) What are the Problem Characteristics of Artificial Intelligence? **07**
(b) Differentiate the DFS and BFS with merits and demerits. **07**
- Q.2** (a) What is Hill Climbing? Explain Simple Hill Climbing and Steepest Ascent Hill Climbing. **07**
(b) Explain A* algorithm. **07**
- OR**
- (b) Explain the State Space with the use of 8 Puzzle Problem **07**
- Q.3** (a) Explain the Forward and Backward Reasoning. **07**
(b) Explain the different issues in Knowledge representation **07**
- OR**
- Q.3** (a) What is Natural Language Processing? Explain each step of NLP. **07**
(b) Explain Inference Rules in Propositional Calculus **07**
- Q.4** (a) Explain the algorithm of predicate logic resolution **07**
(b) Explain CUT, FAIL & REPEAT predicates in PROLOG. **07**
- OR**
- Q.4** (a) Explain the properties that a good knowledge representation system should possess. **07**
(b) Explain Semantic Net & Frame with suitable example **07**
- Q.5** (a) What is an expert system? Explain Architecture of an Expert system. **07**
(b) Write a short note on: Hopfield Networks **07**
- OR**
- Q.5** (a) Write a prolog program to count vowels in a list of characters. **07**
(b) Write a Prolog program to solve Tower of Hanoi Problem. **07**
