

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER- VIII(OLD) • EXAMINATION – WINTER 2017

Subject Code: 180703

Date: 10-11-2017

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) Differentiate Natural & Artificial Intelligence. Explain types of problems which requires AI techniques to be solved. **07**
(b) Explain Inference Rules in Propositional Calculus. **07**
- Q.2** (a) Solve Water-Jug Problem using Production Rule System. **07**
(b) Explain State Space Search using 8 Puzzle problem. **07**
- OR**
- (b) Explain any problem solved using Depth First Search technique. **07**
- Q.3** (a) Explain A* Algorithm. **07**
(b) Explain Min-Max Search with example. **07**
- OR**
- Q.3** (a) Explain Simulated Annealing search with suitable example. **07**
(b) Represent following statements in Predicate Logic. **07**
1. Raju only likes to see Hindi movies.
 2. It is safe to assume a movie is American unless explicitly told otherwise.
 3. The playhouse rarely shows foreign films.
 4. People do not do things that will cause them to be in situations they do not like.
 5. Rama does not go to the playhouse very often.
- Q.4** (a) Write Prolog Program to solve Tower of Hanoi Problem. **07**
(b) Explain Probability & Bay's Theorem. **07**
- OR**
- Q.4** (a) Explain the steps of Natural Language Processing in detail. **07**
(b) What is use of Cut & Fail Predicates in Prolog with example. **07**
- Q.5** (a) What is Expert System? Explain it's Architecture, features & applications in brief. **07**
(b) Write a Prolog Program to reverse a given list. **07**
- OR**
- Q.5** (a) Explain Semantic Net & Frame with suitable example. **07**
(b) Explain Artificial Neural Network. **07**
