

GUJARAT TECHNOLOGICAL UNIVERSITY**M.E -IIIrd SEMESTER-EXAMINATION – MAY- 2012****Subject code: 730802****Date: 10/05/2012****Subject Name: Artificial Intelligence****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) Write the importance of artificial intelligence in complex problem solving. **07**
(b) What do you mean by a production system? Describe in brief various components of a production system. **07**
- Q.2** (a) Describe Heuristic search techniques. **07**
(b) Explain recursion based search. **07**
- OR**
- (b) With the help of a suitable algorithm explain Depth- first search method. **07**
- Q.3** (a) Briefly describe the meaning of knowledge representation and knowledge acquisition. **07**
(b) Explain pattern directed search. **07**
- OR**
- Q.3** (a) Explain AO* algorithm in detail. **07**
(b) Explain simulated annealing with a suitable algorithm. **07**
- Q.4** (a) Why is it important that an expert system should be able to explain the why and how questions related to a problem solving session? **07**
(b) With a suitable example explain the advantages of using an artificial neural network in complex problem solving. **07**
- OR**
- Q.4** (a) What are the characteristic features of an expert system? **07**
(b) Explain with a suitable example Recursion based search. **07**
- Q.5** (a) Explain the components of an expert system with their significance. **07**
(b) Describe fuzzy logic control with a suitable example. **07**
- OR**
- Q.5** (a) Enlist and briefly describe various terminologies used in fuzzy logic. **07**
(b) State the significance of cryptarithmic with illustration. **07**
