Seat No.: _____ Enrolment No._____

# GUJARAT TECHNOLOGICAL UNIVERSITY

**ME - SEMESTER– II(New course) • EXAMINATION (Remedial) – WINTER- 2015**

**Subject Code: 2720510** **Date: 14/12/2015**

**Subject Name: Introduction to Artificial Intelligence**

**Time:2:30 pm to 5:00 pm** **Total Marks: 70**

**Instructions:**

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

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|---|---|---|---|
| **Q.1** | **(a)** | Solve the following constraint satisfaction problem.<br>B E S T<br>+ M A D E<br>M A S E R | **07** |
| | **(b)** | Explain the problem characteristics of Artificial Intelligence. | **07** |
| **Q.2** | **(a)** | What is heuristic? Explain heuristic with proper example. | **07** |
| | **(b)** | Explain the state space search using water-jug problem. | **07** |
| | | **OR** | |
| | **(b)** | What is local maximum, plateu and ridge ? | **07** |
| **Q.3** | **(a)** | When would best-first search be worse than simple breadth-first search? | **07** |
| | **(b)** | Describes the approaches for knowledge representation. | **07** |
| | | **OR** | |
| **Q.3** | **(a)** | With suitable example explain the characteristics of monotonic and partially commutative production systems. | **07** |
| | **(b)** | Describe the Min-Max Algorithm and Alpha ï beta Pruning. | **07** |
| **Q.4** | **(a)** | Explain the concept of learning using decision trees and neural network approach. | **07** |
| | **(b)** | Write short note on: ñRote Learningò. | **07** |
| | | **OR** | |
| **Q.4** | **(a)** | Illustrate the use of predicate logic to represent the knowledge with suitable example. | **07** |
| | **(b)** | Explain the different defuzzification methods such as centre of area, centre of maxima and mean of maxima methods. | **07** |
| **Q.5** | **(a)** | Explain the architecture of Expert System. | **07** |
| | **(b)** | Solve the 8-Queen problem using heuristic repair. | **07** |
| | | **OR** | |
| **Q.5** | **(a)** | Explain the semantic net and frames. | **07** |
| | **(b)** | Differentiate the supervised learning and unsupervised learning. | **07** |

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