Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E Sem-III Regular Examination January 2011

Subject code: 730802

Subject Name: Artificial Intelligence

Date: 10 /01 /2011 **Time: 02.30 pm – 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 can an AI system do and what not?	**07**
	(b)	Describe knowledge base and rule base for an interlock and protection of any of the boiler accessories.	**07**
Q.2	**(a)**	Describe state space search technique.	**07**
	(b)	Explain expert system architecture. Discuss characteristic features of the same.	**07**

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	(b)	How is case based reasoning different from rule base? Explain with suitable example.	**07**
Q.3	**(a)**	Giving an example describe an algorithm of Breadth first search method.	**08**
	(b)	Give a case study and Analyze the problem of applying AI in manufacturing.	**06**

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Q.3	**(a)**	What are Neural Networks? In order to perform sophisticated computations similar to human being, discuss philosophical required aspects.	**06**
	(b)	Give an algorithm of Depth first search method and explain with an example.	**08**
Q.4	**(a)**	Explain A^* algorithm in detail.	**09**
	(b)	List and explain production rules for water jug problem.	**05**

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Q.4	**(a)**	State the importance of crypt arithmetic and solve puzzle UPPER + LOWER = BOUND.	**08**
	(b)	What is meant by machine vision? Explain in context with obstacle avoidance for mobile robots.	**06**
Q.5	**(a)**	Explain in detail (i) Turing and (ii) Pruning.	**07**
	(b)	With the help of suitable example explain forward and backward chaining.	**07**

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Q.5	**(a)**	With the help of a suitable example explain predicate logic.	**05**
	(b)	Explain inference engine giving an example of turbine auxiliary protection.	**09**

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