Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME Semester –III Examination Dec. - 2011

Subject code: 730802 **Date: 08/12/2011**

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)**	Differentiate Artificial Intelligence and Natural intelligence with their advantages and limitations.	**07**
	(b)	Explain the importance of Mathematics in Artificial Intelligence.	**07**
Q.2	**(a)**	Explain Knowledge Based Expert System in Artificial Intelligence.	**07**
	(b)	What is search? Differentiate Informed and Un-informed Search with advantages and limitations.	**07**
		OR	
	(b)	What is Neural Network? Explain the applications of Artificial neural Network in Computer Integrated Manufacturing.	**07**
Q.3	**(a)**	Differentiate Rule based and Case based Expert System with advantages and limitations.	**07**
	(b)	What is Constraint Satisfaction Problem? Explain Consistency Driven Techniques for solving CSP.	**07**
		OR	
Q.3	**(a)**	What is Pruning? Explain Alpha-Beta Pruning with algorithm.	**07**
	(b)	Write the production rules for Water jug problem. Two water jugs of 3 and 4 liter capacity is given. How can you fill 2 liter of water in big jug without any measuring aids?	**07**
Q.4	**(a)**	State the importance of Crypt-arithmetic? Show the step to solve the puzzle. SEND + MORE = MONEY	**07**
	(b)	What is knowledge representation in AI? Explain Predicate Logic and predicate Calculus.	**07**
		OR	
Q.4	**(a)**	What is crypt-arithmetic? Show the step to solve the puzzle. EAT + THAT = APPLE	**07**
	(b)	What is Machine Vision? Explain the importance of machine vision in manufacturing Industry.	**07**
Q.5	**(a)**	What is inference? Explain the rules of inference and working of inference engine in detail.	**07**
	(b)	Explain AO^* algorithm in detail.	**07**
		OR	
Q.5	**(a)**	What is Natural Language Processing? Explain the applications of Natural Language Processing in AI.	**07**
	(b)	Explain the advancement in Artificial Intelligence.	**07**

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