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**ADIT/BIT PROGRAMME**

**Term-End Examination**

**December, 2011**

**CSI-23 : TECHNIQUES OF ARTIFICIAL  
INTELLIGENCE**

*Time : 2 hours*

*Maximum Marks : 60*

*Note : There are two sections in this paper. Section-A is compulsory. Answer any two questions from Section-B.*

**SECTION - A**

1. State *True/False* for the following:
  - (i) Expert System stores knowledge in knowledgebase. 1x5=5
  - (ii) ADA is a AI programming language.
  - (iii) A production rule must satisfy left hand condition.
  - (iv) AI can not be used for designing Intelligent Computer System.
  - (v) LISP uses the self-evaluating symbol *nil* to mean false.
2. Explain the following in brief. 4x3=12
  - (i) Uses of AI
  - (ii) Expert System
  - (iii) Forward Reasoning
3. Explain three important rules of inference with example. 9

## SECTION - B

4. (a) Write a LISP function : 8

$$\text{SUM}(k) = \sum_{i=1}^m k_i$$

- (b) Evaluate the following : 9

- (i) Cons ( '(a b c)' (p q r))
- (ii) (endp '(a b c))
- (iii) ( FIRST (REST '(ABC)))

5. (a) Write a recursive LISP function that takes two integer i and j as argument and computer to : 8

$$j^j + j^i$$

- (b) Describe the following in brief : 3x3=9

- (i) Frame structure
- (ii) Heuristics
- (iii) Semantic Net

6. (a) Define modus Ponens rule and the Chain Rule with a suitable example of each. 8

- (b) What is BFS algorithm? Explain its use with the help of an example. 5

- (c) Explain concept of membership predicate with the help of an example. 4