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CSI-23

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ADIT/BIT PROGRAMME

Term-End Examination

June, 2010

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 whether the following is ***True/False*** : **10**

(a) (number p four)

(b) In LISP language, a form is either an atom or a list.

(c) NEXPERT is Frame Based Expert Shell.

(d) A node represents relationship between two objects.

(e) Dotimes is like Dolist.

(f) The interpreters are also called Structure Inference engine.

(g) Every expression in LISP is a list.

(h) REMOVE-IF-NOT eliminates all elements that satisfy the filtering predicate.

(i) Best First Search is an informed search.

(j) (atom 'aa)

2. Define the following : **10**

(a) Nominal Variables

(b) Heuristics

(c) Reasoning

(d) Knowledge Representation

(e) Frame Structure

3. (a) Draw Semantic Net for Ram is an employee of Accounts department of ABC Bank located in Delhi. **5**

(b) Define each of the Modus Ponen rule and the Chain Rule. Also give a suitable example for each. **5**

SECTION - B

4. (a) Write an algorithm for BFS. Explain the algorithm by taking an example of a tree. **6**

(b) Differentiate between Expert System and Conventional System. **5**

(c) Find whether the following logical expression is satisfiable, contradictory or valid. **4**

$$P \rightarrow Q \rightarrow \sim P$$

5. (a) Write a recursive LISP function that takes two integer arguments m and n. The function compute n^{th} power of m i.e. m^n. **9**

(b) Draw the block diagram of an Expert System. Also explain its components. **6**

6. (a) Evaluate the following : **6**

(i) (member '(d) '(a (d) e f))

(ii) (endp '(a b c))

(iii) (find - if # 'evenp '(1 2 3 4 5 6))

(b) Explain the limitations of Expert System. **5**

(c) Explain any four uses of an Expert System. **4**
