MCA (III YEAR)

Term-End Examination

02795

December, 2010

CS-14 : INTELLIGENT SYSTEMS

Time : 3 hours   *Maximum Marks : 75*

Note :   *Question number 1 is **compulsory**. Attempt **any three** questions from the remaining four questions.*

1. Answer the following questions briefly :-   **5**

    (a) What is a Production System and its components ? Explain in brief.

    (b) What are the differences between   **5** declarative and procedural knowledge ? Explain with the help of examples.

    (c) What are control strategies and its desirable   **5** characteristics ?

    (d) What are heuristics? How does it help in   **15** solving the problems in AI domain? Briefly explain the following Search Techniques :-

    (i) Breadth First Search.

    (ii) Best First Search.

2. (a) What are the advantages of Conceptual   **8** Dependency (CD) over other knowledge representation techniques? Represent the sentence " Joseph punched hard to John" in CD.

(b) What is Semantic Network representation ? 7
Draw a Semantic Network representation
for the sentence "Marry is a Lawyer and
Shalley is a Programmer".

3. (a) What are the major advantages of First 10
Order Predicate Logic (FOPL) ? Represent
the following facts in FOPL :-
(i) Caizen was a Lady teacher.
(ii) All Lady teachers were British.
(iii) Volcano erupted in Britain.
(iv) All Lady teachers died when volcano
erupted in Britain.

(b) Convert all the above four facts (of part (a)) 5
into Conjunctive Normal Form (CNF).

4. What is an Expert System? What are its 15
advantages and limitations? Briefly discuss the
architecture of an Expert System.

5. Write short notes on **any three** of the following :
(a) Non - monotonic reasoning. 3x5=15
(b) PROLOG as a Programming Language.
(c) MIN - MAX Search Strategy.
(d) Genetic Algorithm.

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