

**MCA (Revised)**  
**Term-End Examination**  
**June, 2013**

**MCSE-003 : ARTIFICIAL INTELLIGENCE AND  
KNOWLEDGE MANAGEMENT**

*Time : 3 hours*

*Maximum Marks : 100*

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

1. Answer **any five** of the following questions briefly : 5x8=40
- (a) How will we know when we have succeeded in building an Intelligent Program ? Briefly explain.
  - (b) What are the advantages of predicate Logic over propositional logic ? Explain with examples.
  - (c) Explain frame as a tool for knowledge representation.
  - (d) Explain the advantages of Prenex Normal Form with example.
  - (e) Describe the characteristics of scripts as a model for representing knowledge.
  - (f) What is Fuzzy Logic ? Explain its application in AI domain with the help of example.

- (g) What are AI Agents ? What are its roles ?
- (h) What are the components of an Expert System ? Explain them briefly.
2. (a) What is First Order Predicate Logic (FOPL) ? Represent the following facts in FOPL : **15**
- “Anyone passing his AI paper and getting an opportunity to work on live project is Happy. But anyone who studies sincerely or is Lucky can pass all his exams. Ramu did not study but he is lucky. Anyone who is lucky, gets a live project to work”*
- (b) Explain the RESOLUTION by Refutation method. **5**
3. Discuss the following search techniques : **4x5=20**
- (a) Breadth First Search
- (b) Best First Search
- (c) Means - Ends Analysis
- (d) AO\* Algorithm
4. (a) Write a user defined LISP function to perform as *reverse* does ? **10**
- (b) Write a LISP program to count the number of elements in a given list. **5**
- (c) Write a program in PROLOG to print all the elements of a given list. **5**

5. Write short notes on **any four** of the followings :

**4x5=20**

- (a) Semantic Net as a tool for knowledge representation.
  - (b) MYCIN
  - (c) Genetic Algorithms
  - (d) Computable Functions
  - (e) Declarative Vs. Procedural knowledge
  - (f) Non-Monotonic Reasoning.
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