BT-3/D-23   43219

INTRODUCTION TO ARTIFICIAL INTELLIGENCE

PC-CS-AIDS-207A

Time : Three Hours]   [Maximum Marks : 75

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. (a) Explain the holistic view of knowledge and abstraction in artificial intelligence with the help of some real time examples.   8

   (b) Justify the basic usage of branch and bound and problem reduction with the help of some practical examples.   7

2. (a) Elaborate the concept of theorem proving and abstraction in artificial intelligence.   8

   (b) Differentiate between hill climbing and best-fit search problem solving techniques.   7

Unit II

3. (a) Why is predicate logic used ? Explain the process of conflict resolution in critical representation of knowledge. 8

   (b) Compare and contrast between declarative and procedural knowledge representation. 7

4. (a) Why are semantic nets used ? Also explain the critical uses of conceptual dependency and scripts.

   8

   (b) Differentiate between modus ponens and modus tollens with the help of some practical examples. 7

Unit III

5. (a) Compare and contrast between forward chaining and backward chaining. 8

   (b) Identify the relevance of first order logic, unification and lifting in knowledge engineering. 7

6. (a) Explain the usage, significance and real time characteristics of using fuzzy logic. 8

   (b) Compare and contrast between semantic and syntactic processing in natural language processing.

   7

Unit IV

7. (a) Define neural networks and genetic algorithms. Explain with some real time applications where genetic algorithms and neural networks can be used. Also, identify the main technical differences among these two. 8

   (b) Explain the case study of MYCIN with the help of its functional block diagram. 7

8. (a) What are the various forms of learning ? Explain the concepts of learning by inductions and learning with hidden variables with the help of some practical examples. 8

   (b) Explain the need and justification of expert system. 7