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BCACAC 305 Reg. No. | | | | /3 | | | |

Credit Based Fifth Semester BCA Degree Examination
October / November 2008
(New Scheme)

ARTIFICIAL INTELLIGENCE - BCA- 505

Time : 3 Hours Max.Marks: 100

Note: Answer any TEN questions from PART A and any ONE full question from each unit in PART B

PART A

10x2=20

1. a. Define AI
   b. What is meant by 'chronological backtracking'.
   c. What are the two requirements to have a good control strategy?
   d. What is heuristic function?
   e. Define declarative knowledge. Give example.
   f. What are the various ways of representing the knowledge.
   g. Compare top down parsing with bottom up parsing.
   h. What are the purpose of semantic analysis?
   i. What are the steps of explanation based generalization?
   j. Write any two application areas of expert system?
   k. Give the return value of
      i) (reverse '(a (b c) d)) ii. (last '(a b c d))
   l. Explain PROLOG.

PART B

UNIT - I

2. a. Give various production rules that cane be used for solving the Water-jug problem of filling exactly 2 Gallon of water into 4- Gallon jug by providing a 3 Gallon, 4 Gallon jugs and a pump. Describe a solution for this problem by applying these sequence of rules.
   b. Write an algorithm to check the insertion of duplicate nodes into a search graph.
   c. Explain the algorithm for Generate and Test strategy. (15+3+2)

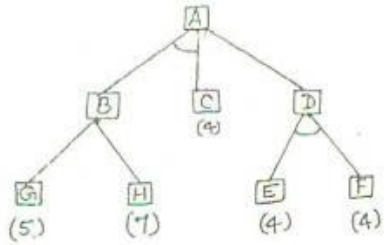
OR

3. a. Explain the algorithm minmax procedure used for solving Tic-Tac - Toe play.
   b. Explain Breadth- First search technique. What are its advantages?
   c. Explain the terms Local maximum, plateau and ridges. Give a method to deal each of these.

Contd... 2

3b

d. Evaluate the f' value for each node in the following AND-OR graph. Specify the best path closer to the goal state at this level. (5+6+6+3)



UNIT - II

4. a. Explain inheritable knowledge. Write an algorithm for property inheritance.
   b. With suitable example, explain how do you represents facts using predicate logic. (10+10)

OR

5. a. Explain inferential knowledge and procedural knowledge with example.
   b. Differentiate belief, hypothesis and knowledge
   c. Explain granularity of representation.
   d. Explain various properties of attributes which are independent of specific knowledge they encode. (5+3+4+8)

UNIT - III

6. a. Write the Graph Unify algorithm.
   b. What is Augmented Transition Network? Give example to show an ATN in graphical notation. Also explain its execution process as it parses the sentence" The long file has printed".
   c. What is 'Learning by parameter adjustment' ? Explain with example. (5+13+2)

OR

7. a. What are the drawbacks of semantic grammer?
   b. List and explain the components of natural language understanding Processing.
   c. Explain various conversational postulates.
   d. Write a note on Rote learning. (5+5+6+4)

UNIT - IV

8. a. Explain the characteristic features of expert system.
   b. Explain any four most commonly used I/O functions in LISP.
   c. Explain the usage of numeric operators +, - , * and / in LISP. give example
   d. Explain any five Prediate calls with example. (5+6+4+5)

OR

9. a. Write a note on Expert system shells.
   b. With example explain the various iterative constructs in LISP.
   c. Explain mapping and Lamda functions.
   d. Write a note on i) Conditional predicates ii) Logical functions iii) Arrays and Property lists. (4+4+4+8)

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