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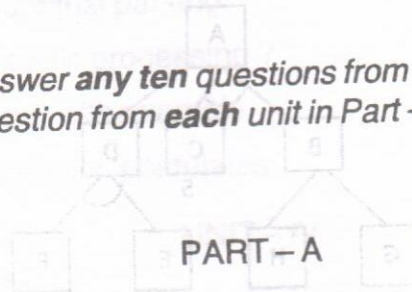
Shri Dharmasthala Manjunatheshwara
College of Business Management Library
MANGALORE - 575 003

**Credit Based Fifth Semester B.C.A. Degree
Examination, October/November 2012
ARTIFICIAL INTELLIGENCE**

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.



1. a) What is meant by 'chronological backtracking' ? (2x10=20)
- b) Write any four related fields in AI.
- c) Define production system.
- d) Define travelling salesman problem.
- e) How inheritable knowledge can be represented ?
- f) Differentiate intensional and extensional representations with example.
- g) What is the purpose of semantic analysis ?
- h) What is rote learning ?
- i) Give syntax and examples for lists in PROLOG.
- j) Write a LISP function that returns maximum of three numbers.
- k) Write any two application areas of an expert system.
- l) How to use array in LISP ? Explain with example.

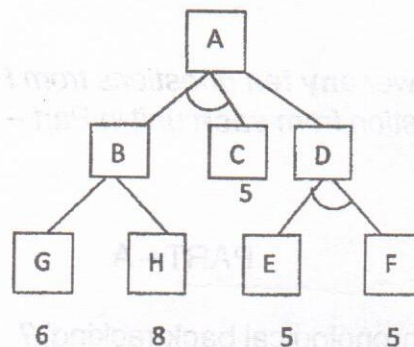
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PART – B

UNIT – I

2. a) Explain BFS and DFS algorithm. Mention also advantages of both.
 b) Evaluate f' value of each node in the following AND-OR graph (Better mode with lowest cost. Each arc with single successor as a cost of one and each AND arc with multiple successor has a cost of one for each of its components)



(15+5)

OR

3. a) Define monotonic, partially commutative and commutative production system.
 b) Explain the terms local maximum, plateau and ridges. Give a method to deal each of these.
 c) Write generate and test algorithm.
 d) Write an algorithm to check the insertion of duplicate nodes into a search graph. (6+6+4+4)

UNIT – II

4. a) Write a note on granularity representation of knowledge.
 b) Explain procedural knowledge with example.
 c) With suitable example, explain predicate logic for representation of facts. (6+4+10)

OR

5. a) Write a note on inferential knowledge.
 b) How to represent instance and is a relationship using predicate logic? Illustrate with example.
 c) Explain inheritable knowledge. Write an algorithm for property inheritance. (5+5+10)



UNIT – III

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- 6. a) What is augmented transition network ? Give an example.
- b) Explain learning with macro operator.
- c) What is learning by parameter adjustment. Give example. (10+5+5)

OR

- 7. a) Write a note on conceptual parsing.
- b) Write a note on syntactic processing ?
- c) Explain case grammar with example.
- d) Write note on conversation postulates. (5+5+5+5)

UNIT – IV

- 8. a) Write a note on the following with reference to LISP.
 - i) Logical functions
 - ii) Mapping functions
 - iii) Property lists
- b) Explain expert system characteristics.
- c) Explain I/O functions in LISP. (9+5+6)

OR

- 9. a) Write a note on expert system.
 - b) Write a recursive function named power that makes two numeric arguments n and p. The function computes n^{th} power of p be sure to account for the case where $n = 0$ ie $p^0 = 1$. Ex : (power 4 3) returns $4^3 = 64$
 - c) Explain any five list manipulation functions in LISP.
 - d) Write the internal representation for the lists given below
 - i) (a (b c (d)) e f)
 - ii) (a b ((c d) (e f)) g)(4+6+5+5)
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