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BCACAC 305

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Credit Based Fifth Semester B.C.A. Degree Examination, Nov./Dec. 2010
ARTIFICIAL INTELLIGENCE
(New Syllabus)

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

(10×2=20)

1. a) Which are the task domains of AI ?

b) What does production system consists of ?

c) What are the advantages of breadth first search ?

d) Differentiate intensional and extensional representations with examples.

e) Define declarative knowledge with example.

f) What is rote learning ?

g) Differentiate top down parsing with bottom up parsing.

h) What are the steps of explanation based generalization ?

i) Write a LISP function that returns minimum of 3 numbers.

j) Write a note on PROLOG.

k) What is the use of lambda function in LISP ? Explain.

l) How to use arrays in LISP. Explain with eg.

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PART – B

UNIT – I

2. a) Explain the algorithm for hill climbing with an example.

b) Given two jugs, a 4 gallon one and 3 gallon one. Neither has any marker on it. There is a pump that can be used to fill jugs with water. How can you get exactly 2 gallon of water into the 4 gallon jug ? List all production rules. Describe the solution by applying production rules. Write one possible solution. **(5+15)**

3. a) Explain the terms local maximum, plateau and ridges. How to deal these problems ?

b) Define Monotonic, partially commutative and commutative production systems.

c) Explain best first search algorithm with example.

d) Write generate and test algorithm. **(6+5+6+3)**

UNIT – II

4. a) With suitable example, explain predicate logic with representation of facts.

b) Explain inheritable knowledge and write property inheritance algorithm.

(10+10)

5. a) What are the approaches to knowledge representation ?

b) Explain the various properties of attributes which are independent of specific knowledge they encode.

c) Explain inferential knowledge with example.

d) Explain granularity of representation. **(4+10+3+3)**

UNIT – III

6. a) Write Graph Unify theorem.

b) What are the ways of handling sentences in natural langauge processing ?

c) What is learning by parameter adjustment ? Explain.

d) Explain learning with macro operator. **(5+5+5+5)**

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7. a) Explain lexical processing.
   b) Explain case grammars with example.
   c) What is Winston's Learning system ? How it is different from goal of version space ? **(5+5+10)**

UNIT – IV

8. a) Explain expert system shells.
   b) Explain any six predicate calls with suitable examples.
   c) Write a note on property list with an example.
   d) Write a note on internal storage for representation of list. **(4+6+6+4)**

9. a) Explain any six list manipulation functions with examples.
   b) How we can construct local variable in LISP ? Explain with example.
   c) Explain expert system characteristics.
   d) Explain most commonly used I/O functions in LISP. **(6+4+5+5)**