Reg. No. | | | | | | | | | |

BCACAC 305

Credit Based V Semester B.C.A. Degree Examination,
November/December 2015
(Old Syllabus) (2013-14 and Earlier Batches)
ARTIFICIAL INTELLIGENCE

Time : 3 Hours Max. Marks : 100

Note : *Answer* ***any 10*** *questions from Part –* ***A*** *and* ***one full*** *question from* ***each*** *Unit in Part –* ***B.***

PART – A

1. a) What is AI ? **(10×2=20)**
   b) What does production system consists of ?
   c) Define the terms heuristic and heuristic function.
   d) Define travelling salesman problem.
   e) Define declarative knowledge with example.
   f) What do you mean by inferential adequacy ?
   g) What do you mean by computable predicates ? Give one example.
   h) What is morphological analysis ?
   i) What is classification ?
   j) Write the output of (i) (cons 'a' (b c)) ii) (car '(a b c))
   k) Write a LISP program to find factorial of a number using recursion ?
   l) How do you declare facts in PROLOG ? Explain with example.

PART – B
UNIT – I

2. a) Explain the algorithm for hill climbing with an example.
   b) Define water jug problem. Give various production rules that can be used for solving it. Give one possible solution. **(5+15)**

3. a) Write breadth first search algorithm.
   b) Write steepest ascent hill climbing algorithm. What are the problems that may arise in this method ?
   c) Write program 2 to play tic-tac-toe game with its data structures. **(5+8+7)**

P.T.O.

UNIT – II

4. a) With suitable example, explain predicate logic with representation of facts.
   b) Explain the various properties of attributes which are independent of specific knowledge they encode. **(10+10)**

5. a) List and explain four properties of a system for the representation of knowledge.
   b) With suitable example, explain the usage of Isa and instance predicates in the representation of facts.
   c) Explain inferential knowledge and procedural knowledge with example. **(4+10+6)**

UNIT – III

6. a) Write graph unify theorem.
   b) What is learning by parameter adjustment ? Explain.
   c) With an example, explain ATN. **(5+5+10)**

7. a) What are the ways of handling sentences in natural language processing ?
   b) Explain case grammars with example.
   c) What is Winston's learning system ? How is it different from goal of version space ? **(5+5+10)**

UNIT – IV

8. a) Explain the characteristic features of expert systems.
   b) Explain any six pedicate functions with suitable example.
   c) How can you construct local variables in LISP ? Explain with example.
   d) Write a LISP function to find maximum of 3 numbers. **(5+6+5+4)**

9. a) Explain any 4 list manipulation functions in LISP with example.
   b) How to work with Arrays and property lists in LISP.
   c) Explain conditional statements and logical functions used in LISP, with example.
   d) Explain mapping and Lambda functions in LISP. **(6+5+4+5)**
