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

BCACAC 305

Credit Based Fifth Semester B.C.A. Degree Examination, Oct./Nov. 2014
(Old Syllabus) (2013 – 14 and Earlier Batches)
ARTIFICIAL INTELLIGENCE

Time : 3 Hours

Max. Marks : 100

***Note** : Answer **any ten** questions from Part – **A** and answer **one full** question from **each** Unit of Part – **B**.*

PART – A

(10×2=20)

1. a) What is Artificial Intelligence ?

   b) Define travelling salesman problem.

   c) Which are the task domains of AI ?

   d) Define declarative knowledge with an example.

   e) Define belief and hypothesis.

   f) Name any two attributes used in representing inheritable knowledge.

   g) What is Parsing ?

   h) List out any two semantic markers.

   i) Differentiate between top down parsing with bottom up parsing.

   j) Expand LISP and PROLOG.

   k) Define a function which computes the sum of three numbers.

   l) What is the output of the following functions ?

      i) (mapcar '1 + '(5 10 15 20 25))

      ii) (mapcar' + '(1 2 3 4 5) '(1 2 3 4))

P.T.O.

PART – B

UNIT – I

2. a) Give various rules that can be uses 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 to this problem by applying this sequence of rules.

   b) Write simple hill climbing algorithm. **(15+5)**

3. a) Explain BSF and DSF algorithm. Mention also advantages of both.

   b) Write problem reduction algorithm. **(15+5)**

UNIT – II

4. a) Mention the properties should be possessed by a good knowledge representation system.

   b) Explain relational knowledge with an example.

   c) Explain inheritable knowledge and write property inheritance algorithm. **(5+5+10)**

5. a) Write a note on granularity representation.

   b) Explain inferential knowledge with an example.

   c) Explain the various properties of attributes which are independent of specific knowledge they encode. **(5+5+10)**

UNIT – III

6. a) Explain graph unify algorithm.

   b) Explain learning with macro operator.

   c) Explain Winston's learning algorithm.

   d) Explain the concept of learning by taking advice. **(5+5+5+5)**

7. a) Parse a sentence "The long file has printed" using ATN.

   b) Explain case grammars with an example.

   c) Write a note on conversation postulates. **(10+5+5)**

UNIT – IV

8. a) Explain with an example atoms, lists and strings in LISP.

   b) Explain any five list manipulation functions with example available in LISP.

   c) Explain various iteration constructs available in LISP.

   d) Explain expert system characteristics. **(5+5+5+5)**

9. a) Explain the conditional predicate cond with purpose usage and example.

   b) Write a short note on expert system shell.

   c) Explain with an example *putprop* function.

   d) Write a LISP program to calculate factorial of a number using recursion. **(5+5+5+5)**