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

**BCACAC 305**

# Credit Based Fifth Semester B.C.A. Degree (Supplementary) Examination, August/September 2015 (2013-14 and Earlier Batches) ARTIFICIAL INTELLIGENCE (Old Syllabus)

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) Define Artificial Intelligence.

   b) Write any four related fields in AI.

   c) Define travelling salesman problem.

   d) Define procedural 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) What is rote learning ?

   j) Expand LISP and PROLOG.

   k) Define a function which computes the average 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))

## 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 AND – OR graph also write problem reduction algorithm.

   b) Write Best First Search algorithm.

   c) Explain the terms local maximum, plateau and ridges. Give a method to deal each of these. **(10+5+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) With suitable example, explain predicate logic for representation of facts.

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

### UNIT – III

6. a) Explain graph unify algorithm.

   b) Explain learning with macro operator.

   c) Explain Winston's learning algorithm.

   d) List various kinds of relationship present among sentences as identified in discourse and pragmatic process. **(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 any five predicate functions in LISP.
   b) Write a short note on expert system shell.
   c) Explain with an example creating and accessing arrays in LISP.
   d) Write a LISP program to calculate factorial of a number using recursion. **(5+5+5+5)**

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