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Total No. of Questions :5] *[Total No. of Printed Pages :3*

Roll No .....

MCA - 401

MCA IV Semester

Examination, June 2014

Artificial Intelligence & Applications

Time : Three Hours

Maximum Marks : 70

Note: i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.

ii) All parts of each question are to be attempted at one place.

iii) All questions carry equal marks, out of which part A and B (Max. 50 words) carry 2 marks, part C (Max. 100 words) carry 3 marks, part D (Max. 400 words) carry 7 marks.

iv) Except numericals, Derivation, Design and Drawing etc.

Unit - I

1. a) Differentiate conventional programming and AI programming.

   b) Define artificial intelligence.

   c) Define LISP programming with their features?

   d) Define the function average, which will take two numbers as arguments and compute their average.

   OR

   Describe your own criteria for computer software to be considered intelligent.

Unit - II

2. a) What do you mean by depth-first searching?
   b) When world best-first search be work than simple breadth first search?
   c) Why heuristic search techniques are considered to be more powerful than the traditional search techniques?
   d) Write down the A* algorithm with its merit and demerits.

OR

Trace the constraint satisfaction procedure solving the following cryptarithmetic problem.

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  SEND
+ MORE
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 MONEY
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Unit - III

3. a) Explain the various problems in representing knowledge?
   b) What is conceptual dependency?
   c) Write down the unification algorithm.
   d) Convert the following sentences into predicate logic
      i) Any one passing their history exams and winning the lottery is happy.
      ii) Any one who studies or is lucky can pass all their exams.
      iii) john did not study but he is lucky.
      iv) Any one who is lucky wins the lottery.

OR

Make the partitioned semantic net for the following sentence: "Every dog in town has bitten the constable".

Unit - IV

4. a) Write down the brief note on case grammar.
   b) What do you mean by alpha-beta cut-offs?
   c) Differentiate between goal-state and non-linear planning.
   d) Consider the following block world problem

Start:		Goal:	
	On table (A) ^		On table (A) ^
	On table (B) ^		On (B, A) ^
	On table (C) ^		On (C,B) ^
	On table (D)		On (D,C)
	Arm empty		

Show that how STRIPS world solve the above problem.

OR

Make the augmented transition network for the following sentence: "The dog likes a man".

Unit - V

5. a) Differentiate between expert system and decision support system.
   b) Explain Bayesian network.
   c) What are the major problem faced by any expert system?
   d) Describe the components of an Expert system.

OR

Define various techniques of learning.

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