Uva Wellassa University of Sri Lanka
Faculty of Science & Technology
Computer Science & Technology Degree Programme
First Semester Examination – March/April 2013
CST351-3 Artificial Intelligent Systems: Theory

Uva Wellassa University

Instructions for candidates:

Answer all questions. Each question carries 20 marks.

No. of questions:	Five (05)
No. of pages:	One (01)
Time:	Two hours (2 hrs)
Total marks allocated: 20%	

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1. Explain the following terms in your own words

   a. Percept and percept sequence.
   b. Agent function and agent program.
   c. Rationality, omniscience, perfection.
   d. Utility function, fitness function
   e. Learning, feedback, problem generator, exploratory actions

2. Describe as many types of rational agents that we studied in this subject as you can. Outline their characteristic features, capabilities and drawbacks.

3. Describe in your own words what Turing Automaton is. Explain, what it consists of, what it is for, how it works, and what are its relations to other types of automata.

4. Write a pseudo-code for any genetic algorithm of your choice.

5. How many binary one-dimensional cellular automata with a neighborhood of radius r = 1 and outer totalistic transition rules can be constructed?
   Explain how you derived your conclusion. For such cellular automata, propose a numbering system similar to Wolfram's rule code.