Code: R7 421302

R7

B.Tech IV Year II Semester (R07) Advanced Supplementary Examinations, June 2012
ARTIFICIAL INTELLIGENCE
(Electronics and Control Engineering)

Time: 3 hours   Max Marks: 80

Answer any FIVE questions
All questions carry equal marks
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1 (a) Explain the different control strategies used in problem solving.
   (b) Discuss the factors determining the choice of direction for a particular problem.

2   How breadth first search works? What are the features and applications of breadth first search?

3   Explain why it is a good heuristic to choose the variable that is most constrained, but the value that is least constraining in a CSP search.

4   Explain Alpha-Beta cut offs during minimax search.

5 (a) Consider the problem of finding clothes to wear in the morning. The knowledge's are:
        Wear jeans unless either they are dirty or you have a job interview today.
        Wear a sweater if it's cold.
        It's usually cold in the winter.
        Wear sandals if it's warm.
        It's usually warm in the summer.
        (i) Build a JTMS-style database of the necessary facts to solve this problem.
        (ii) Show how the problem can be solved and how the solution changes as the relevant facts
             change.
   (b) TMSs are useful tools in solving constraint satisfaction problems. Give your opinion.

6 (a) Give the steps for conversion to implicative normal form.
   (b) For each of the following pairs of atomic sentences, give the most general unifier if it exists.
        (i) Older (father (y),y), older (father (x), john)
        (ii) Knows (father (y),y), knows (x,x).
        (iv) f (Marcus, g (x,y) and f(x, g (caeser,Marcus))

7   Define the operator schemata for the problem of putting on shoes and socks and a hat and coat;
        assuming that there are no pre-conditions for putting on the hat and coat. Give a partial-order plan
        that is a solution, and show that there are 180 different linearizations of this solution.

8   What are decision trees? Draw a decision tree for the problem of deciding whether or not to move
        forward at a road intersection given that the light has just turned green.

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