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06IS764/06CS764

Seventh Semester B.E. Degree Examination, Dec.09/Jan.10
Artificial Intelligence

Time: 3 hrs. Max. Marks:100

Note: *Answer any FIVE full questions, selecting at least TWO questions from each part.*

PART – A

1 a. With examples, explain different types of task environments. **(12 Marks)**
b. Explain Breadth-First-Search (BFS) strategy. **(08 Marks)**

2 a. Explain A* search strategy. Prove :
i) A* using TREE-SEARCH is optimal if h(n) is admissible.
ii) A* using GRAPH-SEARCH is optimal if h(n) is consistent. **(12 Marks)**
b. Write the algorithm for online search agent that uses depth first exploration. **(08 Marks)**

3 a. Write the syntax of propositional logic. Write BNF grammar for sentences in propositional logic. **(10 Marks)**
b. Write the algorithm for Wumpus - world agent to find pits, wupuses and safe squares. **(10 Marks)**

4 a. Write the syntax of first order logic using BNF. **(10 Marks)**
b. List and explain the steps involved in knowledge engineering projects. **(10 Marks)**

PART – B

5 a. Write toward chaining algorithm. **(10 Marks)**
b. Explain aspects of prolog that fall outside standard logical inference. **(10 Marks)**

6 a. Explain with examples, how first order logic expresses facts about categories. **(10 Marks)**
b. Explain the ontology of situation calculus. **(10 Marks)**

7 a. Compare how STRIPS and ADL programming languages represent planning problems. **(10 Marks)**
b. What is Bayesian network? Explain how it is used to represent knowledge? **(10 Marks)**

8 a. Write the decision tree learning algorithm. **(10 Marks)**
b. Explain how the applicability of decision trees is broadened. **(10 Marks)**

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