

Code No: R7321506

R07

III B.Tech II Semester(R07) Supplementary Examinations, December 2010.

ARTIFICIAL INTELLIGENCE

(Computer Science & Systems Engineering)

Time: 3 hours

Max Marks: 80

**Answer any FIVE questions
All questions carry equal marks**

1. (a) What are the basic components of AI problem solving methodology? Describe them in detail. Illustrate with an example.
(b) Explain the conversion method of basic agent to learning agents.
2. (a) What is best first searching? Explain in detail A* algorithm.
(b) Write the algorithm for breadth first and depth first search.
3. (a) How does genetic algorithm come out with optimal solutions?
(b) List the difference between hill-climbing and simulated annealing. Give examples of applications where they are used.
4. Prove the following assertion: for every game tree, the utility obtain by MAX using minimax decision against a suboptimal MIN will be never be lower than the utility obtained playing against an optimal MIN. Can you come up with a game tree in which MAX can do still better using a suboptimal strategy against a suboptimal MIN?
5. (a) Give a detail note on a generic knowledge-based agent.
(b) In the wumpus world, agent will have five sensors. Explain them.
6. (a) Give a detail note on models for first order logic.
(b) Discuss inference rules for quantifiers.
7. (a) Discuss about the language of planning problem briefly.
(b) Explain partial order planning in detail.
8. (a) Discuss the issues to be addressed in order to extend decision tree induction to a wide variety of platforms.
(b) What is meant by overfitting? How to deal with overfitting?
