FACULTY OF INFORMATICS

B.E (III/IV Year) (IT) II Semester (Main) Examination, June 2010

ARTIFICIAL INTELLIGENCE

Time : 3 Hours]   [Max. Marks : 75

*Answer **all** questions from Part A.*
*Answer any **five** questions from Part B.*

Part A – (25 Marks)

1. Describe 8-puzzle in terms of start state, goal state and exhaustive search to a prescribed level or depth.   3

2. Give four criteria for evaluation of search strategies and explain each strategy briefly.
                                                                                                              2

3. Write the rules of inference for propositional logic.   2

4. Write the truth-table showing the validity of $((P \vee H) \wedge \neg H) \Rightarrow P$.   3

5. Describe Bayes Network. Sketch a Bayes Network to illustrate its construction for an example problem.   3

6. Distinguish between Backward and Forward search methods.   2

7. Explain Training curve in multilayer Feed Forward Networks.   2

8. 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.   3

9. Explain Lexical and Referential Ambiguity in efficient communication.   2

10. Write a short note on phrase–structure grammars.   3

Part B – (50 Marks)

11. Write simulated annealing search algorithm and explain its working.   10

12. Explain monotonicity and write a note on complexity of propositional inference. 10

13. What is direction-dependent separation or D-separation? Explain. Describe probabilistic Inference in Polytrees.   10

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14. Write Back-propagation Algorithm. Explain its working with the help of an example.
    10

15. Sketch and describe a semantic parse-tree showing all stages of semantic analysis of an example sentence.   10

16. Write a detailed note on reasoning with certain and uncertain information.   10

17. What is Commonsense knowledge? Explain Nonmonotonic Reasoning in Semantic Networks.   10