ARTIFICIAL INTELLIGENCE

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 \((P \lor H) \land \neg H) \Rightarrow P\). 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
14. Write Back-propagation Algorithm. Explain its working with the help of an example. 

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

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