



Code No. : 5291/M

FACULTY OF INFORMATICS
BE 3/4 (IT) II Semester (Main) Examination, May/June 2012
ARTIFICIAL INTELLIGENCE

Time : 3 Hours]

[Max. Marks :75

Note : Answer *all* questions of Part A. Answer *five* questions from Part B.

PART – A

(25 Marks)

1. Define state and explain how the state of a problem change. 3
2. Describe search efficiency in terms of branching factor and total number of nodes. 3
3. What is a well formed formula in propositional calculus ? Can it be converted to an equivalent conjunction of clauses ? 2
4. Explain Universal Instantiation and Existential generation in predicate calculus. 2
5. Why are Horn Clauses used in logical reasoning systems ? 2
6. Give Bayes Rule, explain its use with an example. 3
7. How do you plan to generate a sequence of actions in situation calculus ? 3
8. What is a Decision Tree ? Define information gain. 2
9. Define Speech Recognition task in terms of words and signals. 2
10. What is a Feature Vector ? Explain with an example. 3

PART – B

(50 Marks)

11. a) Illustrate a possible result of a Heuristic Search Procedure by defining a suitable Heuristic function for an eight-puzzle problem.
b) State Turing Test. Explain its relevance in AI.
12. Write minimax procedure and illustrate the method with the game of Tic-Tac-Toe.



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13. a) Explain how Predicate calculus can be used as a language for representing knowledge.
b) Illustrate the use of resolution to answer questions using knowledge about a domain represented by wffs of Predicate-calculus.
14. Write generate-Decisions-Tree algorithm and illustrate using a specific example.
15. Explain how Rule-Based expert system work.
16. Describe feedforward multilayer neural networks giving details of computations involved.
17. Describe Speech Recognition in terms of Language Model and Acoustic Model.