FACULTY OF INFORMATICS

B.E. 3/4 (IT) II Semester (Main) Examination, May/June 2011
ARTIFICIAL INTELLIGENCE

Time : 3 Hours]　　　　　　　　　　　　　　　　　　[Max. Marks : 75

Note : Answer all questions from Part – A. Answer any five questions from Part – B.

PART – A　　　　　　　　　　　　　　　(Marks : 25)

1. Define Agent and state its functions.　　　　　　　　　　　2

2. Why is A* admissible ?　　　　　　　　　　　　　　　　3

3. Define α-cutoff & β-cutoff.　　　　　　　　　　　　3

4. What are horn clauses ?　　　　　　　　　　　　　　　2

5. What are the advantages of DFS ?　　　　　　　　　　　2

6. State Bayes theorem.　　　　　　　　　　　　　　　　2

7. What is qualification problem and ramification problem ?　　　3

8. Define neural networks.　　　　　　　　　　　　　　　2

9. Briefly explain entropy and information gain.　　　　　　　3

10. Write a short note on Frames.　　　　　　　　　　　　　3

PART – B　　　　　　　　　　　　　　　(Marks : 50)

11. Write and explain the best first search strategy and explain how this combines the advantages of both DFS & BFS approaches.　　　10

12. (a) Explain resolution refutation algorithm in propositional logic.　　5

　　(b) Obtain the resolution proof for the proposition "Angle B is equal to Angle C" from the following axioms :　　　5

　　　　(i)　If a triangle is equilateral then it is isosceles.

　　　　(ii)　If a triangle is isosceles then two sides AB & AC are equal.

　　　　(iii)　If AB & AC are equal then angle B and angle C are equal.

　　　　(iv)　ABC is an equilateral triangle.

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13. Write the back propagation algorithm and explain in detail with a neat diagram.   10

14. Explain Viterbi algorithm in detail with a good example.   10

15. (a) Explain briefly about planning system.   5

    (b) Write a short note on reasoning uncertain information.   5

16. (a) Give formal state space description of AI problem and solve the water jug problem in this content.   5

    (b) Write a short note on rule based expert systems.   5

17. Write any **two** of the following :   10

    (i) Syntactic analysis in NLP with example.

    (ii) Differentiate repair approach and constructive method in CSP with example.

    (iii) Version space learning algorithm.

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