

**III B.Tech II Semester Supplementary Examinations,
November/December 2005
ARTIFICIAL INTELLIGENCE
(Common to Computer Science & Engineering and Electronics &
Computer Engineering)**

Time: 3 hours

Max Marks: 80

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

1. Describe with necessary diagrams, a suitable state space representation for 8 puzzle problem and explain how the problem can be solved by state space search. Show how heuristic can improve the efficiency of search. [2+6+4+4]
2. Trace the constraint satisfaction procedure solving the crypt arithmetic problem.
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3. (a) Explain the Unification algorithm with an example. [6+2]
 (b) Explain the resolution algorithm for Predicate logic in detail. [8]
4. (a) Explain the frame representation of a computer. [8]
 (b) What are the important components of scripts? Explain. [2+6]
5. (a) Compare the conventional reasoning system with non-conventional reasoning system.
 (b) Discuss the different key issues with respect to non-monotonic reasoning system. [8+8]
6. (a) Illustrate the minimax search for the tic-tac-toe game, with initial position.
 (b) How Alpha-Beta method helps greatest pruning improvement in the above game? [8+8]
7. (a) Show a parse tree for “India wins third N-Power test after losing second one”. Explain what knowledge is necessary to produce the correct parse. [4+4]
 (b) Show how the sentence “LAXMAN BATTED THROUGH THE INNINGS” would be represented in case grammar. Show how would it be represented in CD. [4+4]
8. Define and explain the concept of “Learning” Describe the features of the following methods of Learning. [2+4]
 - (a) Memorization (Rote learning)
 - (b) Direct Instruction (Taking advice)

(c) Analogy (By example)

(d) Induction

(e) Deduction.

[4X4]

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