

Previous Question Papers

P.CODE:37336

R05

SET- 1

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
IV.B.TECH - I SEMESTER REGULAR EXAMINATIONS NOV/DEC, 2009
ARTIFICIAL INTELLIGENCE
(Common to CSE, ECC)**

Time: 3hours

Max.Marks:80

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

1. Devise an AO* algorithm and explain how it is not suitable for searching in And-OR graphs [16]
2. a) Differentiate between forward and backward reasoning
b) Explain about A* algorithm in detail [8+8]
3. a) Justify the need for computable functions and predicates in logic.
b) What is the significance of knowledge representation? Give differences between database and knowledge base [8+8]
4. Transform the following to conceptual dependencies:
I gave pen to my friend
Rama eat ice cream
I borrowed book from your friend
While going home, I saw a frog [16]
5. Write a short notes on the following
a) Minimalist reasoning
b) Non – dependency directed back tracking
c) Abduction
d) Non Monotonic reasoning [16]
6. a) Explain hierarchial planning with relevant examples.
b) Explain Alpha – Beta Pruning [8+8]
7. What are the prominent features of an expert system and describe their features in detail. [16]
8. Write short notes on the following:-
a) Route learning
b) Induction
c) Epistemology
d) Decision Trees. [16]

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SET- 2

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1. a) Draw a state space representation of Towers of Hanoi problem
b) Explain the state space representation of Water – Jug problem [8+8]
2. Discuss in detail about the A* algorithm, using a suitable example [16]
3. a) Different between proposition logic& predicate logic.
b) Describe how the search control knowledge proves the efficiency of search in a Knowledge based systems [8+8]
4. Write short notes on:-
 - a. Semantic net
 - b. Frames
 - c. Scripts
 - d. Conceptual dependency [16]
5. a) What are the problems in implementing non – monotonic reasoning in problem solving process?
b) Compare chronological back tracking and dependency directed back tracking [8+8]
6. a) Describe how Alpha-Beta search works with relevant examples
b) What is Alpha-Beta Pruning [10+6]
7. a) Draw the case structure for “the train passes through the tunnel”
b) Explain what knowledge is necessary to produce a connect parse for “Rama killed Ravana with the help of monkeys” [8+8]
8. Explain the importance of repeated problem solving for an effective improvement in the process of “Learning”. Distinguish it from Learning by taking advice. [16]

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SET- 3

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Max.Marks:80

**Answer any FIVE questions
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1. a) Provide a state space for the game of chess.
b) Describe different control strategies used in problem solving [8+8]
2. State the traveling salesman problem and explain: Combinational explosion, Branch and bound technique and Nearest neighbour heuristic [16]
3. a) Compare contrast conventional programs and rule based systems
b) Elucidate various knowledge level representations involved in reasoning process. [8+8]
4. Provide relational structures for slot and filler structures. Compare their merits and demerits. [16]
5. a) What is non Monotic reasoning? How it is used in problem solving.
b) Compare and contrast chronological back tracking and dependency directed back tracking. [8+8]
6. a) Write Waltzs algorithm.
b) "The Minimax procedure is depth first and depth limited" Justify? [10+6]
7. a) Derive a possible bottom up parsing for the sentence "The sun rises in the East"
b) Define the role of ATN in semantic analysis. [8+8]
8. a) What is meant by "Learning"?
b) Describe the features of memorization and direct instruction? [8+8]

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SET- 4

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Time: 3hours

Max.Marks:80

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

1. a) Develop algorithms for Depth first and Breadth First search algorithms?
b) Describe the factors determining the choice of direction of a particular problem [8+8]
2. Describe the following in detail: -
 - a) Hill climbing
 - b) Best first search
 - c) Constraint satisfaction [16]
3. a) What is meant by Matching? Explain complex and approximate matching
b) What are the desirable properties of knowledge representation [8+8]
4. a) Explain the various features of Declarative and Procedural frames
b) Suggest a semantic network to describe the furniture in a house. [8+8]
5. a) List the key reasoning operations that are performed by JTMS.
b) Justify how ATMS could be used in medical diagnosis. [8+8]
6. a) What is Hierarchical planning. Explain with relevant examples
b) Illustrate the minimax search for the tic tac toe game. [10+6]
7. a) Describe various classes of grammars
b) Describe Backus – Naur Form(BNF) syntax used in programming languages [10+6]
8. a) What is unsupervised learning?
b) "Learning is the most important characteristic of Intelligence" Justify. [8+8]
