

Unit 4 - Week 2: Problem Solving by Search - I

Course outline

How to access the portal

Week 0: Prerequisites

Week 1: AI and AI Problem Solving

Week 2: Problem Solving by Search - I

Lec 1: Heuristic Search

Lec 2: Informed Search

Lec 3: Constraint Satisfaction Problems

Quiz : Assignment 2

Feedback Form

Week 3: Problem Solving by Search - II

Week 4: Knowledge Representation and Reasoning - I

Week 5: Knowledge Representation and Reasoning - II

Live Session-1

Week 6: Knowledge Representation and Reasoning - III

Week 7: Reasoning under Uncertainty

Week 8: Planning

Week 9: Planning and Decision Making

Live Session-2

Week 10: Machine Learning - I

Week 11: Machine Learning - II

Week 12: Machine Learning - III

Assignment 2

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2019-08-21, 23:59 IST.

1) Heuristics created as solutions to relaxed problems are usually _____ because adding new actions should only reduce the solution cost and not increase it. **1 point**

- A. Optimal
 B. Minimal cost
 C. Admissible
 D. Pessimistic

No, the answer is incorrect.
Score: 0

Accepted Answers:
C. Admissible

2) Which of the following statement is false for inadmissible heuristics? **1 point**

- A. Overestimate the cost.
 B. Trap good plans on the fringe.
 C. Breaks optimality.
 D. Underestimate the cost.

No, the answer is incorrect.
Score: 0

Accepted Answers:
D. Underestimate the cost.

3) A consistent heuristic is admissible; consistent heuristics places even _____ constraints on the heuristic. **1 point**

- A. softer
 B. stricter
 C. weaker
 D. relaxed

No, the answer is incorrect.
Score: 0

Accepted Answers:
B. stricter

4) The cooling strategy in Simulated Annealing does not determine the _____. **1 point**

- A. maximum number of iterations in the search process.
 B. temperature-decrease steps.
 C. selection of a successor state.
 D. number of iterations for each step.

No, the answer is incorrect.
Score: 0

Accepted Answers:
C. selection of a successor state.

5) Which of the following is not a property of the Hill-climbing algorithm? **1 point**

- A. Terminates when a peak is reached.
 B. Does not look ahead of the immediate neighbors of the current state.
 C. Chooses randomly among the set of best successors.
 D. Does backtrack.

No, the answer is incorrect.
Score: 0

Accepted Answers:
D. Does backtrack.

6) A* generates an optimal solution under which of the following conditions? **1 point**

- Condition 1: If $h(n)$ is an admissible heuristic and the search space is a tree.
 Condition 2: If $h(n)$ is a consistent heuristic and the search space is a graph.
- A. A* never generate an optimal solution.
 B. Condition 1 only
 C. Both Condition 1 and Condition 2
 D. Condition 2 only

No, the answer is incorrect.
Score: 0

Accepted Answers:
C. Both Condition 1 and Condition 2

7) The _____ is a way of combining the advantages of both depth-first and breadth-first search into a single method. **1 point**

- A. Iterative Deepening Depth First Search
 B. Bidirectional Search
 C. Best First Search.
 D. Depth Limited Search

No, the answer is incorrect.
Score: 0

Accepted Answers:
C. Best First Search.

8) In heuristic search, the heuristic function, $h(n)$, of a node n estimates the _____. **1 point**

- A. cost to a goal from the current node n .
 B. cost from the start to the current node n .
 C. overall cost of the path through the node n .
 D. All of the above.

No, the answer is incorrect.
Score: 0

Accepted Answers:
A. cost to a goal from the current node n .

9) Arc Consistency is a method of constraint propagation. The following is incorrect for arc consistency. **1 point**

- A. Forward checking is substantially stronger than arc consistency.
 B. Detects failure early!
 C. Arc consistency must be applied repeatedly until no more inconsistencies remain.
 D. Provides a fast method of constraint propagation.

No, the answer is incorrect.
Score: 0

Accepted Answers:
A. Forward checking is substantially stronger than arc consistency.

10) An algorithm that is aware of the underlying constraint graph; determines where to jump back to, based on the actual conflict that it has recorded is _____. **1 point**

- A. Chronological backtracking.
 B. Backjumping.
 C. Conflict-directed Backjumping.
 D. Backtracking.

No, the answer is incorrect.
Score: 0

Accepted Answers:
C. Conflict-directed Backjumping.