

CS 4100/5100 – Quiz 3

9/26/2013

1. When we determine the minimax value of a MAX node, we should select the ____ minimax value from its successors.

Note: High values are assumed to be good for player “MAX”

- A. Minimal B. Maximal

2. Recursive minimax search is ____

- A. Depth-first B. Breadth-first C. None of above

3. The effectiveness of alpha-beta pruning is ____ on the order in which the states are examined.

- A. Dependent B. Independent

4. If a search tree has depth d and its branching factor is k , then minimax algorithm will examine ____ game states.

- A. $O(k \cdot d)$
 B. $O(d^k)$
 C. $O(k \cdot \log(d))$
 D. $O(k^d)$

5. What is utility function in an adversarial game? ____

- A. It’s a timecost function. It defines the time cost from root to a certain node.
 B. It’s a function that maps every node to a number using hash tables.
 C. It’s a probability function. It indicates the probability of winning a game.
 D. It’s an objective function that defines the final numeric value for a game.

6. Minimax algorithm may explore all of the states in a game, which is not practical. How many of these can be used to make a search algorithm more effective? ____

- I. Apply a heuristic evaluation function to states in the search
 II. Apply iterative deepening in the search
 III. Do forward pruning

- A. 0 B. 1 C. 2 D. 3

7. Can we extend the minimax algorithm in zero-sum games that involve more than two players?

- ____
 A. Yes B. No

8. In the right figure, which direction will the “MAX” player move? ____

- A. a_1 B. only a_2
 C. only a_3 D. either a_2 or a_3

