Final Quiz Ph.D Course Work

* Required

Name *

Your answer

Enrollment Number (If you have)

Your answer

Which of the following is not the heuristic for deciding which variable to choose next in a backtracking search for solving CSP? * 2 points

- Minimum remaining value
- Degree
- Least constrained value
- None of the above

After performing arc consistency, one can solve a CSP without backtracking. * 1 point

- True
- False

You are given a CSP with 'n' variables and each variable can take 'd' values. You are able to decompose the problem into three independent subproblems each with n/3 variables. What will be the worst case complexity of solving CAP after decomposition? * 2 points

- O(d^(n/3))
- O(d^n)
- O((n/3)^d)
- O(n^d)

Which of the following is true about CSPs? * 2 points

- Tree structured CSPs cannot be solved in polynomial time
- Forward checking is an efficient inference technique as it can check all failures
- Computational time of solving CSPs depend on number of variables and number of constraints
- All are true

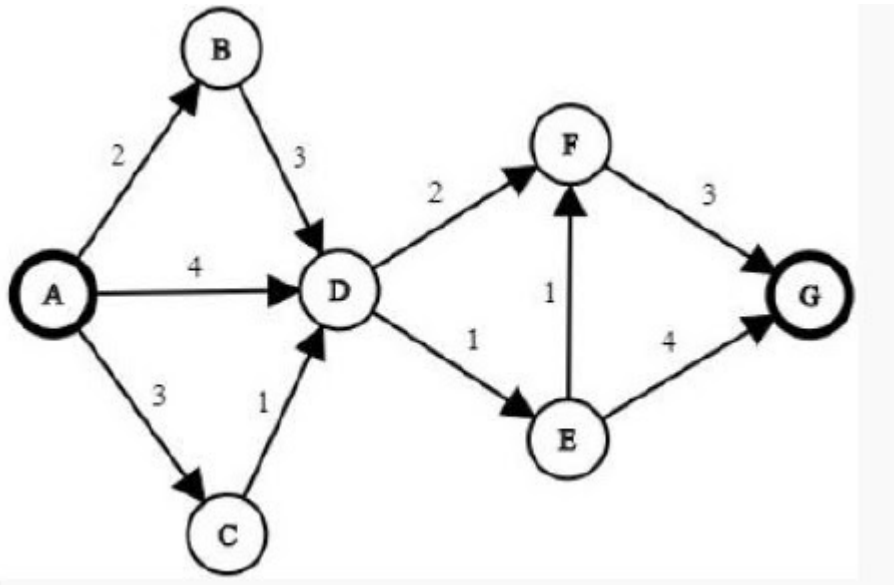
If an arc from X--->Y is arc consistent then * 2 points

- Y----->X is also arc consistent
- All values in X will have a corresponding value in Y
- All values in Y will have a corresponding value in X
- Both X and Y can be assigned the same value

If h1 and h2 are two admissible heuristics then which of the following will give the heuristic that will dominate over h1 and h2? * 2 points

- min(h1, h2)
- max(h1, h2)
- (h1.h2)^0.5
- (h1+h2)/2

Consider the following graph in which a path is to be found from state state A to goal state G. The number on the edge shows the transition cost. Also, the heuristic function h is h={h(A)=7, h(B)=5, h(C)=6, h(D)=4, h(E)=3. h(F)=3, h(G)=0}. This heuristic is * 3 points



- Both admissible and consistent
- Admissible but not consistent
- Consistent but not admissible
- Neither admissible nor consistent

Which of the following algorithm is definitely provide optimal solution? * 1 point

- ◯ Greedy best first search
- ◯ A* with zero heuristic
- ◯ Depth first search
- ◯ A* with consistent heuristic

Consider an infinite search space. The start state is (0,0) and goal state is (Fx, Fy). Given that an agent can move from state (x,y) to states{(x+1,y), (x-1,y), (x,y+1), (x,y-1)} with a unit step cost. Find the number of nodes explored using A* when (Fx,Fy)=(6,7) when Mahanttan distance is the heuristic. No duplicates are detected. * 4 points

Your answer

Which of the following is true? * 1 point

- ◯ A* search expands no more nodes than uniform cost search
- ◯ A* seach expands no more nodes than depth first search
- ◯ Both are correct
- ◯ None is correct

Submit