Cairo University
Faculty of science
Mathematics Department

Mid Term Exam(Spring 2019)
Artificial Intelligence
(Comp 408)
45 mins.

Name:---------- ID: ----------

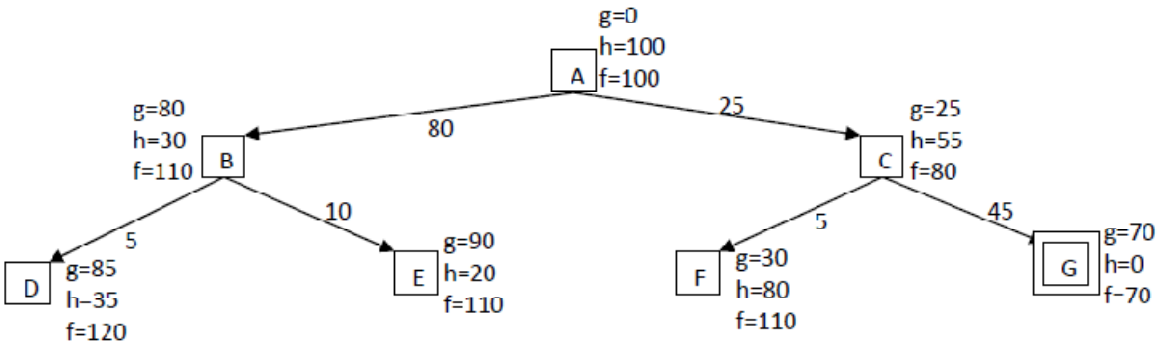
The Exam is in **Three** Pages

Q(1) True or false questions:

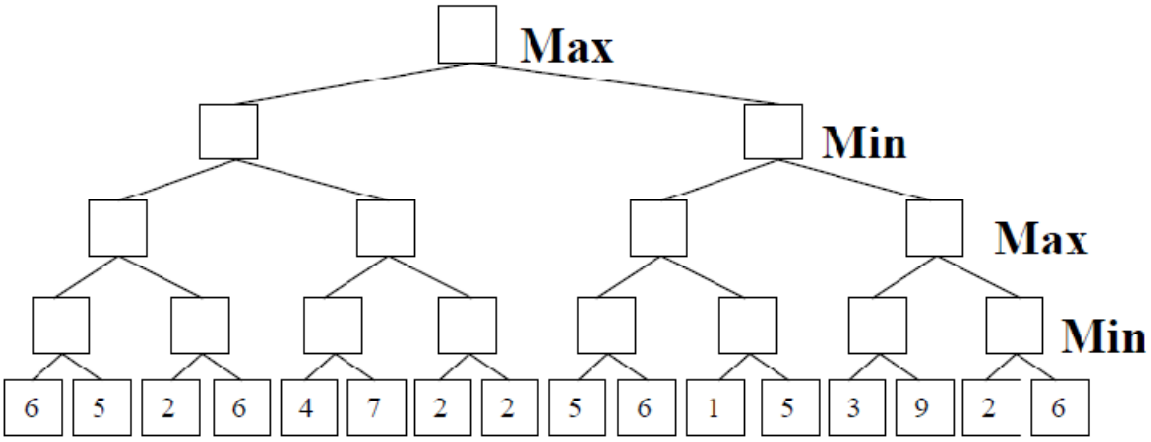
a. (T / F) The iterative deepening search algorithm is optimal.
b. (T/ F) The number of correctly placed tiles in the 8-puzzel is an admissible function.
c. (T/ F) h=0 in the 8-puzzel is an admissible function.
d. (T/ F) Local beam search retains the k best successors of the k states in the previous step

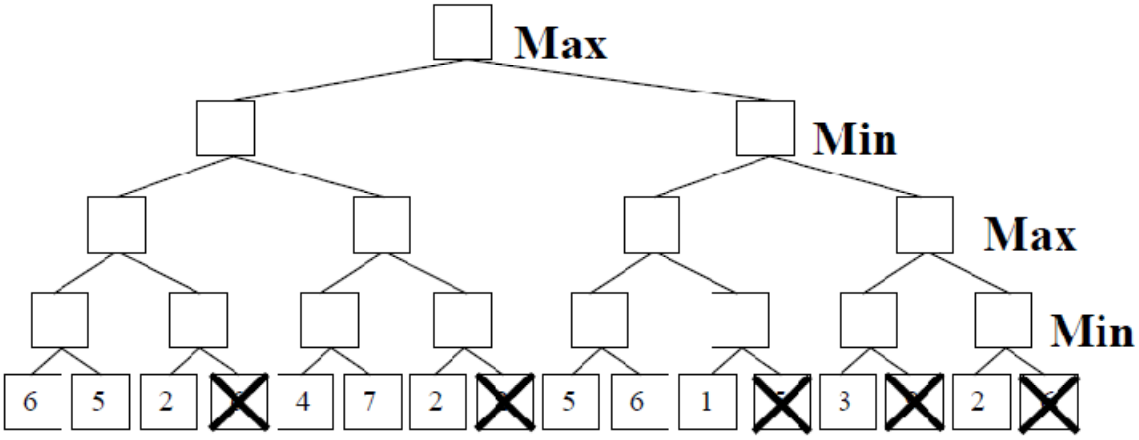
Q(2) Use the following tree to indicate the order that nodes are expanded, for different types of search. Assume that A is the start node and G is the goal. Here, path costs are shown on arrows, g = cost of path so far, h = estimate of remaining cost to goal, f = estimate of total path cost. Iterative deepening is sometimes used as an alternative to breadth first search.

a. depth-first search.
A, B, D, E, C, F,G
b. Greedy search.
A, B, E, D, C, G
c. A* search.
A, C, G
d. Is the heuristic h admissible? (Y or N)
No



Q(3) Cross out each leaf node that will not be examined because it is pruned by alpha-beta pruning. Traverse the tree left-to-right.





P.T.O
Best Wishes
Areeg Abdalla