Cairo University
Faculty of science
Mathematics Department

Mid Term Exam (Sum 2016)
Artificial Intelligence
(Comp 408)
45 mins.

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

The Exam is in **Two** Pages

Q(1) (2 points) What problems we may have if the adopt the definition of AI as "Thinking Rationally".

Q(2) (2 points) Consider the problem of the men(3) and the cannibals(3). And give a complete formulation of it as a search problem.

Q(3) (2 points) Explain briefly how the local beam search works. And explain how it avoids the problems with the hill climbing algorithm.

P.T.O

Q(4) (4 points) Suppose you have the following search space:

State	Next	Cost
A (4)	B	4
A (4)	C	1
B (3)	D	8
C (3)	D	2
C (3)	F	6
D (2)	C	2
D (2)	E	4
E (1)	G	2
F (1)	G	8

Assume the initial state is A and the goal state is G. the first column is a state and its estimate to the goal. The second represents its children and the third is the cost to that child.

    i.   Draw the state space of this problem.

    ii.   Show how each of the following search strategies would create a search tree to find a path from the initial state the goal state.

        a. BFS

        b. DFS

        c. Gready search

Best Wishes
Areeg Abdalla