

1. In ACO, the artificial ants always follow the edge for which the probability  $p(e_{ij}|S)$  is highest. TRUE FALSE
2. In MMAS, one can prove that the probability of finding the best solution at least once in the first  $k$  iterations, tends to 1 as  $k$  tends to infinity. The reason that one can prove this is the fact that (in MMAS) all edges have positive pheromone levels. TRUE FALSE
3. In robot swarms (such as Harvard's 1000-robot swarm), only local communication (e.g. communication within the line of sight) is used. TRUE FALSE

1. No, this is FALSE. Artificial ants select their moves *probabilistically*. See the course book and the slides from 20181003 (Pages 4-5).
2. Yes, this it TRUE.
3. Yes, this is TRUE. To see a video regarding Harvard's kilobot system, click on the image on Page 21 of the presentation from 20181003. (Of course, one can also imagine a robot swarm in which global information is somehow communicated to the swarm, but in most research on swarm robotics, local communication is used (as in the biological counterpart)).