

1 c) Suppose that nodes move slowly (message speed is significantly great than mobility speed). Clustering process can produce related connected dominating set consisting of all clusterheads and enough of their neighbors so that any two clusterheads which are 2 or 3 hops away are connected with these selected neighboring nodes. Compare clustering with connected dominating sets approaches to create backbone for the network in terms of the communication overhead to create and maintain it. Your answer should not exceed five lines of text.

2 marks

1 d). Draw Gabriel graph (GG) for the network below. Simply list edges that you believe are in the GG. Lexicographic order of edges will be appreciated (that is, list first all outgoing edges in GG from node A, then all from node B etc..). Edge XY is in GG if and only if there is no node inside circle with diameter XY.

4 marks

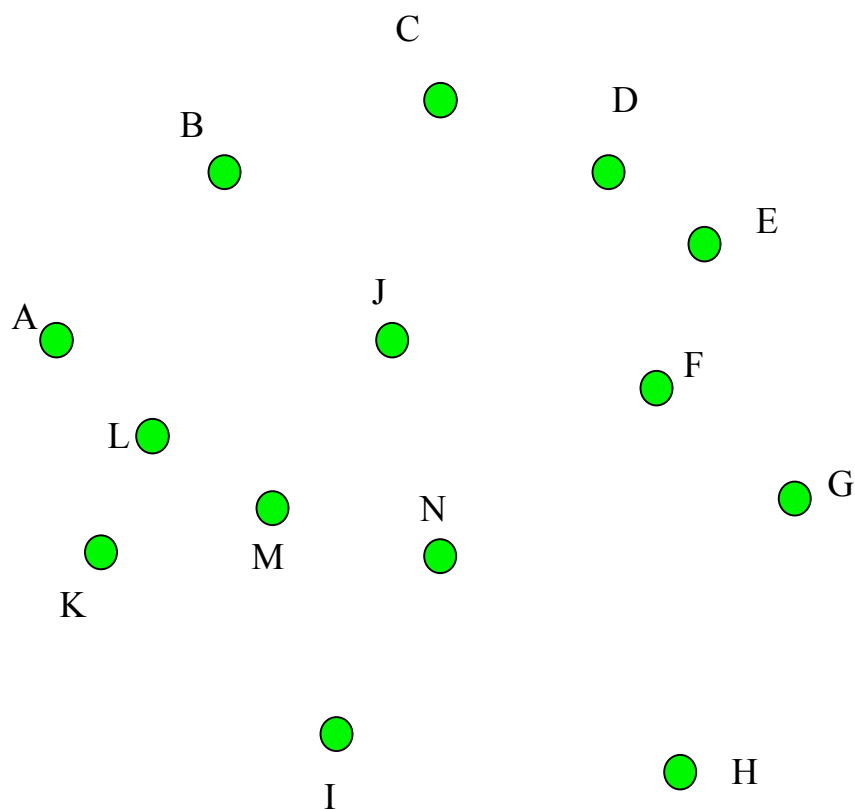


Figure 3

1 e) Voronoi diagram (VD) of a set of points is defined as follows. An edge AB belongs to VD if and only if there exist a circle with AB as a chord of it which does not contain any other node from the set in its interior. What is the relation between GG and VD? Is one of them subset of the other and why? Prove such a claim with an argument that does not exceed three lines of text.

4 marks.