Indian Institute of Technology Guwahati

Computer Science & Engineering

CS 502 Computational Geometry

Give brief and to the point answers.
Use figures to explain.
Answer all questions.

No of Questions: 4 *Maximum Time: 1 Hours*
Maximum Marks: 40

1. 10 Marks Prove that the lower bound for Delaunay triangulation is $O(n \log\ n)$.

2. 10 Marks Give an linear time algorithm to find the convex hull of n points sorted by their X-coordinated. Give brief complexity analysis.

3. 10 Marks Show that $EMST \subset DT$.

4. 10 Marks Given a set $P = \{p_1, p_2, \ldots, p_n\}$ of n points and a set $Q = \{q_1, q_2, \ldots, q_m\}$ of m points in a plane, for each point $p_i \in P$ find nearest neighbour $q_j \in Q$. Give brief complexity analysis.