This question is concerned with connected undirected graphs in which each edge has a weight, and with spanning trees in such graphs.

(a) Explain what is meant by the translation strategy, and outline briefly the steps of a translation-based proof of correctness. [3 marks]

(b) Give an algorithm for finding a maximum spanning tree, that runs in $O(E + V \log V)$ time. Explain why your algorithm’s running time is as required. [8 marks]

(c) Prove rigorously that your algorithm is correct. [9 marks]

[Note: You may refer to algorithms from lecture notes without quoting the code. You may use results from lecture notes without proof, but you must state them clearly.]