Assertion: For every vertex v € V, the edge e of minimum weight that is incident to v is necessarily in any minimum spanning tree of G

The Assertion is true

Proof:

Assume that the Minimum Spanning Tree T for Graph G doesn't contain the minimum weight edge e incident on to v, for some v € V, say e = (v, u). Since T is a spanning tree, it contains a path P connecting u and v, which contains some edge e' != e incident to v, say e' = (v, w). By assumption the weight of e' is larger than that of e. It is very easy to see that T' = (T U {e'}) \ {e}) is also a spanning tree of G. Moreover the weight of T' is smaller than the weight T, which contradicts our assumption that T is a minimum spanning tree

Hence Proved.