1: V : a set of vertices
2: E : a set of edges
3: $G \Leftarrow (V, E)$
4: $C \Leftarrow \{\{v_i\} | v_i \in G(V)\}$
5: H : a max heap of $\Delta Q_{c_x,c_y}$
6: **while** H is not empty **do**
7: extract $max\Delta Q_{c_x,c_y}$ from H, where any c_x, $c_y \in C$
8: **if** $max\Delta Q_{c_x,c_y} < 0$ **then**
9: break
10: **end if**
11: $c_z \Leftarrow c_x \cup c_y$
12: $C \Leftarrow C - c_x - c_y + c_z$
13: $N_{c_z} \Leftarrow \{c_k | v_m \in c_z, v_n \in c_k, e_{mn} \in G(E)\}$
14: **for** $c_k \in N_{c_z}$ **do**
15: $\Delta Q_{c_x,c_y} \Leftarrow Q(G, C - c_k - c_z + (c_k \cup c_z)) - Q(G, C)$
16: **end for**
17: **end while**