2.
Running Louvain method on Karate Club network, I get the following clusters:
Cluster 1 [5, 6, 16, 4, 10]
Cluster 2 [0, 1, 11, 17, 19, 21, 2, 3, 7, 9, 12, 13]
Cluster 3 [23, 24, 25, 27, 28, 31]
Cluster 4 [8, 14, 15, 18, 20, 22, 26, 29, 30, 32, 33]]

Comparing with the eventual split of the club:
Mr.Hi [0,1,2,3,4,5,6,7,8,10,11,12,13,16,17,19,21]
Officer [9,15,14,18,20,22,23,24,25,26,
27,28,29,30,31,32,33]

We see that we get more clusters than expected. Cluster 1 and Cluster 2 contains all the nodes that is in Mr.Hi's group and Cluster 3 and Cluster 4 contains all the nodes that is in Officer's group, except 8 and 9 are on the wrong side. Since there are only 2 nodes that end up in wrong clusters, I'd say my clusters have a good validity.

3. To evaluate these clusters, I give a score between 0 and 1 to each cluster. Their scores is calculated in the following way: Let score = 0, For any 2 nodes in the cluster, if they have at least one same label, then add 1 to the score. Finally, divide the score by the number of pairs of nodes in this cluster. This score should indicate the proportion of nodes in this cluster that have the same label.