Alexandria University
Faculty of Engineering
Computer and Communications Program

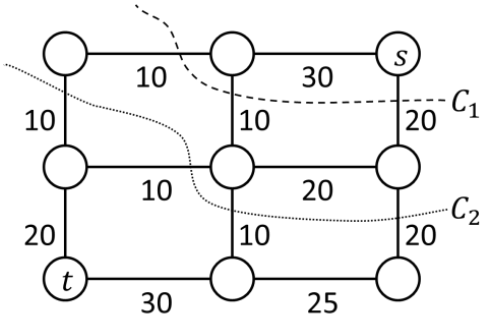
Due : Sunday 17/5/2018

CCE :Pattern Recognition

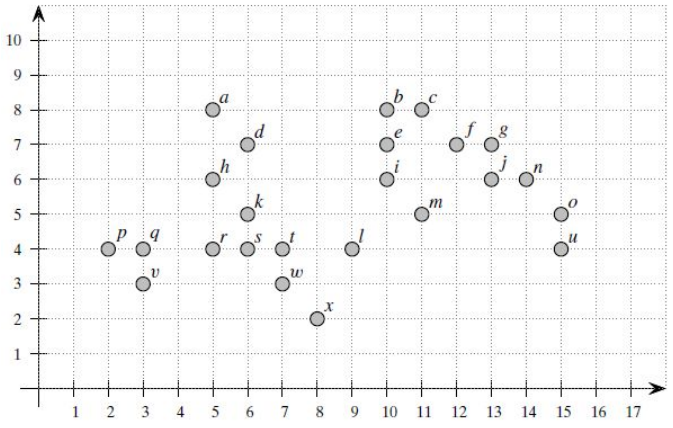
Sheet#8 Normalized Cut and Similarity Graphs

Submit a report and the codes used. Report is essential.
Normalized Cut

1. Given the graph below. The weight on each edge is the affinity between two nodes. Consider the two cuts
2. C_1 and C_2 in the graph. For each cut, compute the values of the graph cut and the normalized cut. Which cut will be favored by each algorithm? What is your explanation**?**



3. **Write your python code** to implement K ways normalized cut k=3
   a) Use RBF kernel with gamma = {0.01,0.1,1,10}. Which of these gamma values produces a connected graph? Plot the normalized eigenvectors using (Y vectors as in pseudo code) **scatter3d**
   b) Use Similarity graph as the 3-NN graph. Where Sim(xi,xj)=1 iff xj is one of the nearest three points to xi (or vise versa). Plot the normalized eigenvectors using (Y vectors as in pseudo code) **scatter3d**



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