

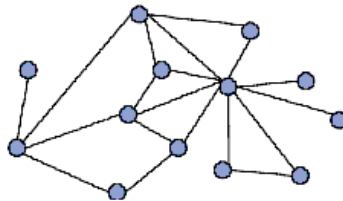
## Tutorial 04

### Social Network Analysis

Note Students can submit python code with output screen or hand solution as submission

#### Question1:

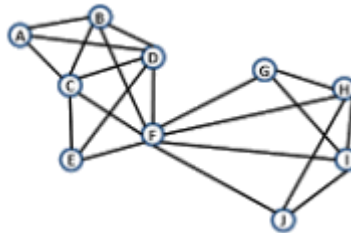
Compute score  $(u, v)$  for all edges. Remove the edges with low score. And also predict the links between disconnected nodes in future. (Use Katz method to calculate the similarity score of the nodes)



#### Question 2:

For the figure below:

- Find out the maximum clique (show all the steps)
- Find overlapping communities using Clique Percolation Method for cliques of size 4.



#### Question3:

For the given graph,

- Find nodes which are structurally equivalent nodes.
- Calculate the modularity of the given network and detect the communities

