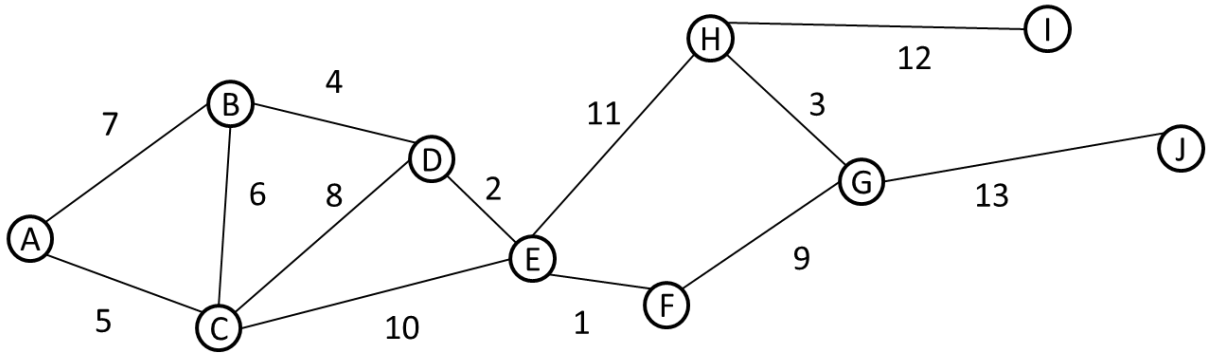
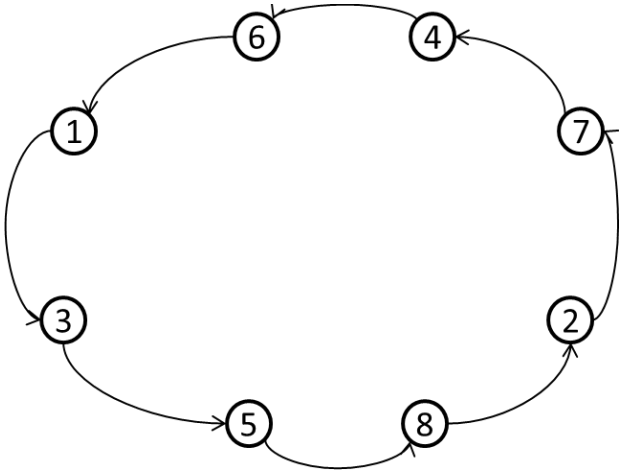
Distributed Algorithms Hw 4

Question 1 (33 pts): Show an example trace of asynchronous GHS algorithm by giving ***all*** message transmissions, edge classifications and fragments step by step. In your trace, please show ***all*** fragment combination possibilities (fragments with the same level combine, a fragment with a smaller level wants to combine another fragment, fragments with a greater level wants to combine another fragment).



Question 2 (33 pts): Show an example trace of asynchronous Petersen leader election algorithm (Given in Gerard Tel's book) by giving ***all*** message transmissions and active/passive nodes step by step.



Question 3 (34 pts): Implement a distributed and asynchronous set cover based dominating set algorithm using a γ synchronizer on a random connected undirected graph. Firstly, give a simple algorithm to construct a γ synchronizer. Write the pseudocode of the algorithm and show its execution by an example operation.

Deadline: 15.January.2013
Submission: Please send your homework to these e-mails:
murat.kurt@ege.edu.tr, muratkurtube@gmail.com,
orhan.dagdeviren@ege.edu.tr, orhandagdeviren@gmail.com
Assit. Prof. Dr. Orhan Dagdeviren
International Computing Institute
Ege University