Sample Midterm

CMSC498N Spring 2007

This sample midterm is about half the length of the real midterm, but it is exactly the kind of problems you will be given on the test.

Define the following terms *(1 point each)*

Degree

Component

Adjacent

How is Degree centrality computed? *(3 points)*

What are the two defining characteristics of a scale-free network? *(3 points)*

Questions *(3 points each)*

How many edges are in an undirected graph with 210 nodes where every node has a degree of 6?

Questions using the graph on page 3

Give the DFS search tree from node A to all other nodes). You can draw the tree or give a list of nodes in the order they are visited.

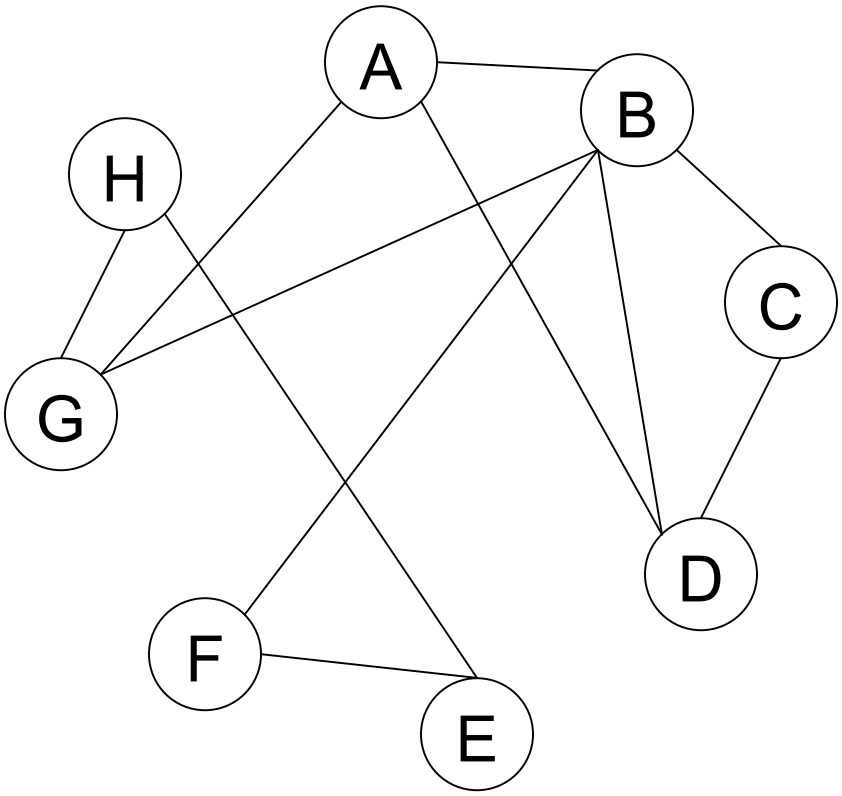
Compute the average shortest path length for *B* (3 points)

Give the dyad census for this graph (3 points)

Reading Questions *(5 points each – answer in 3 to 5 sentences).*

Describe the procedure and results of Milgram's experiment presented in his 1967 paper.

Describe generally the theory of the crossover phenomenon in the generation of small world networks.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