

Fifth written examination of  
Algoritmos e Estruturas de Dados

December 14, 2015   Duration: no more than 30 minutes

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- 6.0 [1:] The adjacency matrix and adjacency lists are two common ways to represent graphs. Explain each one. For sparse graphs, which one should be used?
- 5.0 [2:] Give an example of a divide-and-conquer algorithm, and explain how it works.
- 4.0 [3:] What is dynamic programming?
- 5.0 [4:] Describe an algorithm that given a graph and two of its vertices,  $p$  and  $q$ , finds all simple paths (without loops) that start at  $p$  and end at  $q$ .