

1994 Paper 2 Question 2

A bipartite graph is one where the vertices can be partitioned into two disjoint sets A and B such that every edge of the graph has one end at a vertex in A and the other at a vertex in B . Are there bipartite graphs for which the sets A and B are not uniquely defined? [2 marks]

Given an arbitrary graph how would you find out whether it was bipartite or not? [6 marks]

Define a *matching* in a bipartite graph and show how to find a maximum matching in any given bipartite graph. Prove any results you use about augmenting paths. [12 marks]