
Matchings

Contents

16.1 Maximum Matchings	413
AUGMENTING PATHS	415
BERGE'S THEOREM	415
16.2 Matchings in Bipartite Graphs	419
HALL'S THEOREM	419
MATCHINGS AND COVERINGS	420
16.3 Matchings in Arbitrary Graphs	426
BARRIERS	426
THE TUTTE-BERGE THEOREM	427
16.4 Perfect Matchings and Factors	430
TUTTE'S THEOREM	430
FACTORS	431
T-JOINS	432
16.5 Matching Algorithms	437
AUGMENTING PATH SEARCH	437
EGERVÁRY'S ALGORITHM	440
BLOSSOMS	442
FLOWERS	444
EDMONDS' ALGORITHM	446
16.6 Related Reading	449
STABLE SETS IN CLAW-FREE GRAPHS	449
TRANSVERSAL MATROIDS	449
RADO'S THEOREM	449
PFAFFIANS	449

16.1 Maximum Matchings

A *matching* in a graph is a set of pairwise nonadjacent links. If M is a matching, the two ends of each edge of M are said to be *matched* under M , and each vertex