

ABSTRACTS OF THESES

John W. Moon, On some combinatorial and probabilistic aspects of bipartite graphs. University of Alberta, April 1962 (Supervisor: Dr. Leo Moser).

The purpose of this thesis is to investigate various combinatorial and probabilistic properties of graphs when the restriction is imposed that the points of the graph have been separated into two distinguishable, mutually exclusive and exhaustive subsets and only points which belong to different subsets may be joined by an edge. Such graphs are often called bipartite graphs.

Expressions for the counting series for various types of such graphs are obtained in Chapter I.

Bipartite tournaments are considered in Chapter II. A few of their properties are developed and certain results known about ordinary tournaments are extended to the bipartite case. Ordinary tournaments often arise in connection with the method of paired comparisons and bipartite tournaments also provide natural models for certain situations. Some problems associated with some of these are treated.

In Chapter III the main emphasis is upon obtaining a few typical results of a structural nature for bipartite graphs. These can be interpreted as expressing some structural characteristic of a graph as a function of the number of points and edges it contains.