

C
519
CHA

APPLICATIONS OF GRAPH COLOURING

A PROJECT REPORT PRESENTED BY

SOMASUNDARAM CHANDRAKANTH

✓

to the Board of Study in Mathematics of the
POSTGRADUATE INSTITUTE OF SCIENCE

in partial fulfilment of the requirement
for the award of the degree of

MASTER OF SCIENCE IN INDUSTRIAL MATHEMATICS

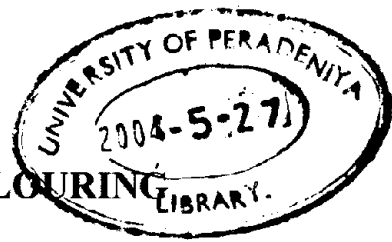
of the

UNIVERSITY OF PERADENIYA

SRI LANKA

2003

571452



APPLICATIONS OF GRAPH COLOURING

S.Chandrakanth

Graph colouring is the major section in Graph Theory, which has many applications.

Course unit system was introduced for the first year students in 2001/2002.

Academic year, subsequently it continuous.

Lecture scheduling and exam scheduling are the two major problems arise in the course unit system in our university. Under the course unit system student can choose courses without any restriction. In this system, students are free to select courses more than the minimum requirements per semester. In addition to that these courses carry different weights. (for example ,courses of one credit , two credits and three credits will be offered in this system). Therefore the lecture time tabling and exam time tabling is not an easy task.

In the previous system, it was easy for us to do this job manually. But at present this is very hard and time consuming.

In my project I have planned to use graph coloring to solve these two problems and the problems were formulated as a mathematical model and the solutions were obtained by using a computer program. The Algorithm and program were corded in Visual Basic Language. This can be extended upto 40 courses. I have solved these two problems for the course unit system of the Faculty of Science and Faculty of Arts.