A STATISTICAL STUDY OF MATHEMATICS RESULTS OF G.C.E *(O/L)* EXAMINATION

by

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Declaration

The work described in this thesis was carried out by me under the supervision of Dr.B.M.S.G.Banneheka and a report on this has not been submitted in whole or in part to any university or any other institution for another Degree/Diploma.

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Declaration

I certify that the above statement made by the candidate is true and that this thesis is suitable for submission to the University for the purpose of evaluation.

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Abstract

General Certificate of Education (Ordinary Level) examination (G.C.E (O/L)) is the most important first public certificate examination in Sri Lanka. A large number of students sit for the G.C.E (O/L) examination every year. Unfortunately, more than half of the students who sit for this examination 'fail' the exam due to their failure in mathematics. It is very important to pay more attention to this serious problem and take necessary actions to overcome this problem immediately.

This study was mainly focused on the exploration of the performance of students in various areas in mathematics at the G.C.E (O/L) examination. The distributions of marks among various sections like arithmetic, algebra, sets and probabilities, statistics, geometry and mensuration were compared. It was found that a significant percentage of students did not have sufficient knowledge about the main mathematical operations. Mensuration was found to be the most difficult area and geometry was the next difficult area for most of the students. More than 75% of the students had not selected the questions of geometry.

The data obtained from a sample of students were analyzed to identify the factors that affect the variation in mathematics results. Since there were about 20 factors of interest, ANOVA technique was applied at 0.2 level of significance to screen out the unimportant factors. A regression model was fitted taking the marks as the response variable and the factors identified from the ANOVA as the explanatory variables. The level of involvements in school exercise, and tuition exercise, the interest in mathematics, the

level of education of the father, the level of help getting from the family, were identified as significant factors. The level of involvement in school exercises was found to be the most influential factor on the mathematics results.

Abbreviations

G.C.E (O/L) – General Certificate of Education (Ordinary Level) examination

G.C.E (A/L) – General Certificate of Education (Advanced Level) examination

NEC – National Educational Commission

NIE – National Institute of Education

% - Percentage

Q1 – First Quartile

Q3 – Third Quartile

Ho – Null Hypothesis

H_1 - Alternative Hypothesis

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