

# UNIVERSITY OF SWAZILAND



## INSTITUTE OF POST-GRADUATE STUDIES

### DEPARTMENT OF EDUCATIONAL FOUNDATIONS AND MANAGEMENT

#### FINAL EXAMINATION PAPER, DECEMBER 2012

##### MASTER OF EDUCATION (M.ED)

<b>COURSE CODE</b>	<b>:</b>	<b>EDF 650</b>
<b>TITLE OF PAPER</b>	<b>:</b>	<b>QUANTITATIVE METHODS OF RESEARCH</b>
<b>TIME ALLOWED</b>	<b>:</b>	<b>THREE (3) HOURS</b>
<b>INSTRUCTIONS</b>	<b>:</b>	<b>ANSWER ALL QUESTIONS</b>
<b>TOTAL MARKS</b>	<b>:</b>	<b>100</b>

**THIS PAPER IS NOT TO BE OPENED UNTIL PERMISSION TO DO SO HAS BEEN GRANTED BY THE INVIGILATOR**

### QUESTION 1

Giving examples where applicable, differentiate between:

- (a) Nominal and ordinal scales. (10 marks)
- (b) One-tailed and two-tailed tests in hypotheses testing. (10 marks)
- (c) Parametric and non-parametric statistics. (10 marks)

### QUESTION 2

A group of 40 students obtained the following scores in a History test. Examine the data below and then answer the questions that follow:

10    4    7    1    7    10    7    10    7    5    8    11  
7    10    8    13    9    9    8    11    9    8    6    5  
9    9    10    5    9    13    2    12    7    13    11    8  
11    14    4    10

- (a) Re-arrange the data in descending order. (2 marks)
- (b) Calculate the mean for the ungrouped data. (2 marks)
- (c) Using a class interval of 3 and taking 0 as your lowest score, report the marks in a frequency distribution table with the following columns:

CLASS INTERVAL	MID-POINT	FREQUENCY	MID-POINT X FREQUENCY

(20 marks)

- (d) Calculate the mean for the grouped data you have shown in the frequency table in (c) above. (3 marks)
- (e) Explain why the mean for the ungrouped data obtained in (b) is different from the mean of the grouped data obtained in (d). (3 marks)

### QUESTION 3

A lecturer at UNISA wanted to see if there was a relationship between her students' scores in Mathematics and Statistics. She measured the students in both Mathematics and Statistics and obtained the following scores.

MATHEMATICS	STATISTICS
6	8
8	6
9	9
12	13
14	15
13	14
11	10
14	8
6	11
10	12

- (a) What statistic would she use to test this relationship and why? (5 marks)
- (b) Compute the statistic and fully discuss the meaning of your answer.  
(20 marks). (See formulae at the back).
- (c) State (i) a null hypothesis that the lecturer might formulate. (5 marks)  
(ii) an alternate hypothesis that the lecturer might formulate. (5 marks)
- (d) If the lecturer wanted to see if the means of the students' marks in Mathematics and Statistics significantly differed, what statistic would she use and why?  
(5 marks)

**END OF QUESTION PAPER.**

$$r = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{[N \sum X^2 - (\sum X)^2][N \sum Y^2 - (\sum Y)^2]}}$$

$$\text{rho} = 1 - \frac{6 \sum d^2}{N(N^2 - 1)}$$