

**UNIVERSITY OF SWAZILND**  
**FACULTY OF HEALTH SCIENCES**  
**FINAL EXAMINATION PAPER, MAY 2013**  
**TITLE OF PAPER: HEALTH STATISTICS**

COURSE CODE: HSC 404

TIME ALLOWED: TWO (2) HOURS

MARKS: 75

**THIS EXAM PAPER HAS SIX (6) PAGES**

**INSTRUCTIONS:**

1. THERE ARE THREE (3) QUESTIONS IN THIS PAPER
2. ANSWER ALL THREE QUESTIONS
3. EACH QUESTION IS ALLOCATED 25 MARKS
4. WRITE LEGIBLY
5. All FINAL ANSWERS MUST BE TO THE NEAREST ONE (1) DECIMAL
6. SHOW ALL YOUR CALCULATIONS.

**THIS PAPER IS NOT TO BE OPENED UNTIL THE INVILATOR HAS GRANTED PERMISSION.**

**QUESTION 1**

A. Indicate if the following statements are true (T) or false (F), by writing either T or F in your answer sheet as appropriate.

- (i) The discipline of statistics is a century old. T/F
- (ii) Statistics is useful to humanity. T/F
- (iii) Statistics can prove / test anything. T/F

B. State if each of the following variables is (are) discrete or continuous?

- (i) Temperature of the patient.
- (ii) Height of fundus.
- (iii) Number of nurses in a Unit.
- (iv) Total student enrollment at the University of Swaziland.
- (v) The largest religious group in Southern Africa.
- (vi) Marks you obtained in your Psychology test.
- (vii) Newly established Universities in Swaziland.

(10)

C. the data below represents the number of years which  $N = 37$  nurses have practiced at the Piggs Peak Government Hospital.

10    17    15    22    11    16    19    24    29    18    25    26    32  
 14    17    20    23    27    30    12    15    18    24    36    18    15  
 21    28    33    34    13    10    16    20    19    23    31

(i) Develop a frequency distribution table of grouped data with widths (magnitude) of four (4) and an apparent lower limit of 10 years. (4)

(ii) Compute the:

(a) Mean (3)

(b) Median (3)

(ii) What conclusion (s) can you make from your mean and median? (2)

D. In Lomahasha Clinic in 2011 about 700 clients presented with clinical manifestations typical of malaria. Relevant diagnostic tests were conducted and 505 malaria smears tested negative. In 2011, what was the probability that a client presenting with clinical manifestations of malaria tested positive at Lomahasha Clinic. (3)

**TOTAL 25 MARKS**

**QUESTION 2**

**Situation:** the diastolic pressure (mmHg) of 10 clients suffering from hypertensive crisis who were attended at the Emergency Department at the Raleigh Fitkin Memorial Hospital [RFMH] on the Easter weekend in 2013 were: 114, 130, 120, 108, 100, 80, 140, 96, 90 and 110 mmHg.

A. Compute the:

- (i) Percentile rank for 100 mmHg (3)
- (ii) Mean deviation and interpret (5)
- (ii) Standard deviation (4)
- (iii) (a) Skewness and (3)
- (b) Interpret (2)
- (iv) Coefficient of Variation (3)

B. Briefly state the five (5) characteristics of a quality statistical table . (5)

**TOTAL 25 MARKS**

### QUESTION 3

- A. The investigator collected data to determine the relationship between the respondent's age (independent variable) and the number of pleasant events (dependent variable). The correlation findings are presented below.

**Correlations**

		Age	Number of Pleasant Events
Age	Pearson Correlation	1	-.156(*)
	Sig. (2-tailed)	.	.025
	N	206	206
Number of Pleasant Events	Pearson Correlation	-.156(*)	1
	Sig. (2-tailed)	.025	.
	N	206	206

\* Correlation is significant at the 0.05 level (2-tailed).

- (i) Present and (3)
- (ii) Interpret the study findings. (3)
- (iii) a. What is the study's Coefficient of Determination. (3)
- b. Interpret the Coefficient of determination. (2)

- B. Fifteen (15) participants were in a focus group discussion, the researcher made an important observation of their hair colour, which was black = 5, blond = 3, purple = 2, grey = 4, and brown = 1.

- (i) Present the data in a table. (5)
- (ii) Plot the data in a graph. (4)

C. Indicate if the following statements are true (T) or false (F), by writing either T or F in your answer sheet as appropriate.

- (i) In a data set, the median will always be unique.
- (ii) For any distribution, the sum of the deviations from the mean equals zero (0).
- (iii) Each set of data has four quartiles; they divide the unranked data into four quarters.
- (iv) The mean, median, and mode are the most common measures of dispersion.
- (v) Correlation coefficient range between 0 and +1.

**TOTAL 25 MARKS**