



**UNIVERSITY OF
SWAZILAND**

FACULTY OF HEALTH SCIENCES

DIPLOMA IN ENVIRONMENTAL HEALTH SCIENCES

SUPPLEMENTARY EXAMINATIONS

TITLE OF PAPER: RESEARCH METHODS

COURSE CODE: HSC306

DURATION: 2 HOURS

DATE: JULY 2012

INSTRUCTIONS:

1. READ THE QUESTIONS CAREFULLY.
2. ANSWER ANY 4 QUESTIONS.
3. EACH QUESTION CARRIES 25 MARKS. WHERE A QUESTION IS SUBDIVIDED INTO PARTS, THE MARK FOR EACH PART IS SHOWN IN BRACKETS.
4. NO PAPER SHOULD BE BROUGHT INTO THE EXAMINATION ROOM.
5. BEGIN EACH QUESTION ON A SEPARATE SHEET OF PAPER.

SPECIAL REQUIREMENTS: NONE

DO NOT OPEN THE QUESTION PAPER UNTIL INSTRUCTED TO DO SO BY THE INVIGILATOR.

QUESTION 1

- a. Outline the difference between cross-sectional and longitudinal studies. [10]
- b. Describe the procedures involved in each of the following study designs:
 - a. Prospective cohort study. [5]
 - b. Retrospective cohort study. [5]
 - c. Case control study. [5]

[25]

QUESTION 2

- a. Explain why it is important to pretest a questionnaire. [5]
- b. Discuss the advantages of focus group discussions. [10]
- c. Discuss the advantages and disadvantages of mail surveys. [10]

[25]

Question 3

- a. Distinguish between type I and type II errors encountered in hypothesis testing. [4]
- b. A researcher intends to find out the effect of a new stock feed on milk production in Friesland cows. The researcher argues that the new stock feed is better compared to the existing one.
 - i. State the null and alternative hypotheses. [1]
 - ii. The relationship between milk production and the amount of new stock feed used is represented by a correlation coefficient of $R = +0.95$. Explain the significance of this finding. [5]
- c. Write notes on the following terms as used in statistics:
 - i. Randomization. [5]
 - ii. Systematic errors. [5]
 - iii. Random errors. [5]

[25]

Question 4

- a. Compare cluster sampling with multistage sampling. [10]
- b. Outline the limitations of double blind studies in health research, highlighting the effect of this type of design on the control group. [15]

[25]

Question 5

- a. State 5 principles involved in seeking informed consent. [10]
- b. Discuss the ethical challenges encountered when conducting research with children. [15]

[25]

THE END