



UNIVERSITY OF  
SWAZILAND

FACULTY OF HEALTH SCIENCES

BSc. ENVIRONMENTAL HEALTH SCIENCES

SUPPLEMENTARY EXAMINATIONS

TITLE OF PAPER: RESEARCH METHODS

COURSE CODE: EHM308

DURATION: 2 HOURS

DATE: JULY 2016

INSTRUCTIONS:

1. READ THE QUESTIONS CAREFULLY.
2. ANSWER ANY FOUR (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: NIL

### QUESTION 1

a. Define the following terms:

- i. Reliability. [3]
- ii. Validity. [2]

b. Discuss the four types of measurement scale used in research. [20]

[25]

### QUESTION 2

(a) Briefly discuss how a completely randomized design and randomized block design experiments are set up. [10]

(b) Explain why it is important to use blind and/or double blind studies in clinical trials. Highlight the role of the control group. [15]

[25]

### QUESTION 3

a. 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 than 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. [4]
- iii. A campus magazine interviewed a sample of 280 students in order to study student attitudes towards proposed changes in canteen regulations. Each student was to respond as either support, oppose or neutral. The numbers were: 152 in support, 77 neutral, 51 opposed. Tabulate the results and calculate the relative frequencies. [10]

ii. Researchers at the University of Swaziland have decided to conduct a study on the prevalence of respiratory infections among textile factory workers in Matsapha. Suggest and justify a suitable design and sampling plan for the study. [10]

[25]



**QUESTION 4**

- a. Compare and contrast between cluster sampling and multistage sampling. [10]
- b. Briefly explain the difference between:
  - a. Observational and experimental approach. [5]
  - b. Cross sectional and longitudinal study. [5]
  - c. Descriptive and analytical studies. [5]

[25]

**QUESTION 5**

Describe the main features of focus group discussions, highlighting the advantages and disadvantages. [25]

**END OF EXAMINATION**