

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
FACULTY OF APPLIED SCIENCE
DEPARTMENT OF ENVIRONMENTAL SCIENCE AND HEALTH
BACHELOR OF ENVIRONMENTAL SCIENCE HONOURS DEGREE
EXAMINATIONS

RESEARCH METHODOLOGY: ESH 4216

January 2013

Time allowed: 3 hours

Total marks 100

INSTRUCTIONS:

Answer any FOUR questions: Each question carries 25 marks.

1. a) Discuss errors in human inquiry and show how scientist try to avoid them (10)
b) Outline the characteristics of the three dominant paradigms and explain their short comings (15)
2. a) Briefly describe the following research types:
 - i) Exploratory
 - ii) Descriptive
 - iii) Explanatory
 - iv) Correlation (16)b) Describe the ethical issues of research participants (9)
3. a) Explain the following sampling concepts:
 - i) population
 - ii) sample frame
 - iii) sampling error
 - iv) representative sample
 - v) sampling bias (15)b) Distinguish between probability and non probability sampling and give four examples of each (10)
4. a) Measurement and scale are important in research explain why this is so? (6)
b) Discuss the merits and the demerits of using the four measuring scales in research (16)
c) List the three measurement errors
5. a) The following data shows diameter at breast height (DBH) of measurement in centimetres for *Colophospermum mopane* in two sites, the second which occupied a high rainfall site. The data were recorded using randomly placed plots.

Site A	Site B
28	37
32	62
51	60
20	41
28	58

- a) State a null hypothesis that could be tested using the above data (5)
 - b) Calculate the mean, standard deviation and standard error of the above data (15)
 - c) Suggest a test of significance you can carry out to comment on the significance of the difference between the mean of the two data sets (5)
6. a) Describe the function and characteristics of research report (10)
- b) Outline different types of reports (15)

End of question paper