



MACHAKOS UNIVERSITY

University Examinations for 2019/2020 Academic Year

SCHOOL OF ENVIRONMENT AND NATURAL RESOURCES MANAGEMENT

DEPARTMENT OF ENVIRONMENTAL SCIENCES

THIRD YEAR SECOND SEMESTER EXAMINATION FOR

BACHELOR OF ENVIRONMENTAL STUDIES (RESOURCE MANAGEMENT)

BACHELOR OF ENVIRONMENTAL COMMUNITY DEVELOPMENT

BACHELOR OF ENVIRONMENTAL SCIENCE

ESU 304: RESEARCH METHODS

DATE: 13/11/2020

TIME: 8.30-10.30 AM

INSTRUCTIONS:

Answer question ONE and any other TWO questions

QUESTION ONE (30 MARKS)

Nicole Schutte (1988) studied the effects of playing violent videogames on children's aggressive behaviour. A group of 5-7 year old children were selected as subjects. She manipulated the variable of exposure to violence by having half the children play a violent videogame while the other half played a non-violent videogame. She then measured the number of times children from each group acted in an aggressive manner (pushing other children, hitting or kicking toys) during a five minute play period. Her results showed that the children who watched the violent videogame were almost twice as aggressive.

- a) Describe the research design employed in this study. (5 marks)
- b) Formulate a general objective and hypothesis for this study. (5 marks)
- c) Describe the variables under this study. (5 marks)
- d) Explain the limitations of this type of study. (5 marks)
- e) What are the potential threats to the validity of this study? (5 marks)
- f) Outline the ethical considerations that you would take into account in this study. (5 marks)

QUESTION TWO (20 MARKS)

Suppose you have been sponsored to undertake research on the environmental effects of wastewater effluent discharge from a tannery factory into a river.

- a) How can you determine whether this research is an important one? (5 marks)
- b) Why do you think it is important to review literature for this study? (5 marks)
- c) Which factors will you consider to arrive at a truly representative sample size? (5 marks)
- d) How would you ensure that the subjects will participate fully in this study? (5 marks)

QUESTION THREE (20 MARKS)

Data comes in various sizes and shapes. Discuss the measurement and scaling techniques used in research.

QUESTION FOUR (20 MARKS)

The sampling design is a fundamental part of data collection for scientifically based decision making. Discuss the probability-based sampling designs that are applied in research methods.

QUESTION FIVE (20 MARKS)

Research proposal writing is an art that must be developed and practiced. Describe in detail and in a systematic order the various components of a research proposal.