



MACHAKOS UNIVERSITY

University Examinations For 2021/2022 Academic Year

SCHOOL OF ENVIRONMENT AND NATURAL RESOURCES MANAGEMENT

DEPARTMENT OF ENVIRONMENTAL SCIENCES

THIRD YEAR SECOND SEMESTER EXAMINATION FOR

BACHELOR OF ENVIRONMENTAL STUDIES AND COMMUNITY DEVELOPMENT

BACHELOR OF ENVIRONMENTAL STUDIES (ENVIRONMENTAL RESOURCE
CONSERVATION)

BACHELOR OF ENVIRONMENTAL SCIENCE

ESU 304: RESEARCH METHODS

DATE: 7/12/2021

TIME: 11.00-1.00 PM

INSTRUCTIONS: Answer question ONE and any other TWO questions

QUESTION ONE (30 MARKS)

- a) Explain the following concepts
 - i. Extraneous variables (2 marks)
 - ii. Sampling design (2 marks)
 - iii. Applied research (2 marks)
 - iv. Fundamental research (2 marks)
 - v. Treatments. (2 marks)
- b) Explain the differences between research designs for Exploratory research studies and descriptive research studies. (10 marks)
- c) Citing relevant examples discuss the data collection methods you would adopt to assess the potential effects of climate change on crop yield in Kenya. (10 marks)

QUESTION TWO (20 MARKS)

- a) Describe fully the techniques that are used in defining a research problem. (10 marks)
- b) Discuss the different types of measurement scales that can be used in a research study. (10 marks)

QUESTION THREE (20 MARKS)

- a) Explain the sources of systematic bias in the research process. (10 marks)
- b) Discuss the steps and importance of formulating a hypothesis for a research study. (10 marks)

QUESTION FOUR (20 MARKS)

- a) Using appropriate examples, explain why literature review is a key component in the research process. (10 marks)
- b) As a researcher, explain the ethical issues to consider while interacting with the other research participants. (10 marks)

QUESTION FIVE (20 MARKS)

As a consultant hired to assess the causes of declining fish population in Lake Naivasha, discuss the different sections that you would include in the research project report and the information you will cover in each section