

**UNIVERSITY EXAMINATIONS****FIRST SEMESTER 2025/2026 ACADEMIC YEAR****THIRD YEAR EXAMINATION FOR THE DEGREE OF
BACHELOR OF SCIENCE IN ENVIRONMENTAL SCIENCE****ENSC 315: RESEARCH METHODS IN ENVIRONMENTAL SCIENCE*****STREAM: R******TIME: 2 HRS******DAY: WEDNESDAY [14.30 – 16.30 P.M]******DATE: 04/02/2026*****THIS QUESTION PAPER CONSISTS OF THREE (3) PAGES****PLEASE DO NOT OPEN UNTIL THE INVIGILATOR SAYS SO.**

INSTRUCTIONS:

- i. Answer question **ONE** and any **OTHER TWO** questions.
- ii. Do not write on this question paper.
- iii. Examples, diagrams and sketch maps may be used whenever they serve to illustrate an answer

QUESTION ONE (30 MARKS)

- a) Write short notes explaining the following as used in scientific research:
 - i) Research idea (2 Marks)
 - ii) Research proposal (2 Marks)
 - iii) Plagiarism (2 Marks)
 - iv) Literature review (2 Marks)
 - v) Research variables (2 Marks)
- b) Examine any **five** (5) basic principles of scientific research (10 Marks)
- c) Discuss any **five** (5) justification for undertaking research (10 Marks)

QUESTION TWO (20 MARKS)

- a) Examine the key components of research methodology (10 Marks)
- b) Describe **FIVE** (5) challenges one is likely to encounter in field data collection (10 Marks)

QUESTION THREE (20 MARKS)

Write short notes differentiating the following:

- i) Concept and theory (4 Marks)
- ii) Methodology and literature review (4 Marks)
- iii) Theoretical framework and conceptual framework (4 Marks)
- iv) Accuracy and precision in data (4 Marks)
- v) Purposive sampling and snow-balling (4 Marks)

QUESTION FOUR (20 MARKS)

- a) Third year students taking Bachelor of Science in Environmental Science in Laikipia University are required to carry out a research on a topic of their choice. Assuming that you have selected a study on solid waste management in the university and the surrounding centre, answer the following questions:
- i) Formulate a suitable research topic **(1 Mark)**
 - ii) State **Three** appropriate research questions **(3 Marks)**
 - iii) List any **Three** ethical consideration for the research **(3 Marks)**
 - iv) Discuss possible challenges likely to be encountered during field data collection **(3 Marks)**
- b) Briefly examine any **FIVE** primary data capture equipment in a social science research **(10 Marks)**

QUESTION FIVE (20 MARKS)

Examine the following theories applied in environmental science research by explaining the contents, applicability, strengths and weaknesses of each

- a) Tragedy of the Commons **(10 Marks)**
- b) Carrying Capacity **(10 Marks)**