



MACHAKOS UNIVERSITY

University Examinations for 2023/2024 Academic Year

SCHOOL OF AGRICULTURE, ENVIRONMENT AND HEALTH SCIENCES

DEPARTMENT OF ENVIRONMENTAL SCIENCES

THIRD YEAR FIRST SEMESTER EXAMINATION FOR

BACHELOR OF ENVIRONMENTAL SCIENCE

ENS 306: GEO-INFORMATICS

DATE:

TIME:

Instructions: Answer question ONE and any other TWO questions

QUESTION ONE (30 MARKS)

a) Explain the following:

- i. Geographic Information System (2 marks)
- ii. Topology (2 marks)
- iii. Spatial entities (2 marks)
- iv. Spatial database management system (2 marks)
- v. Attribute data (2 marks)

b) Explain the main data management and analysis procedures relevant in GIS (10 marks)

c) Discuss the main components that should be considered in development of a GIS (10 marks)

QUESTION TWO (20 MARKS)

a) Explain the main types of data used in GIS (10 marks)

b) Discuss the different levels of data classification used in designing maps in GIS (10 marks)

QUESTION THREE (20 MARKS)

Discuss the main barriers in the development and implementation of GIS for natural resources management in Kenya

QUESTION FOUR (20 MARKS)

Discuss the main methods you would adopt in pre-processing of spatial data in GIS

QUESTION FIVE (20 MARKS)

Discuss why you would recommend a computer-based spatial data management system for natural resources management