



MACHAKOS UNIVERSITY

University Examinations for 2023/2024 Academic Year

SCHOOL OF AGRICULTURE, ENVIRONMENT AND HEALTH SCIENCES

DEPARTMENT OF ENVIRONMENTAL SCIENCES

FOURTH YEAR FIRST SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE (COMPUTER SCIENCE),

SCO 417: GEOGRAPHIC INFORMATION SYSTEM

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 you would advise a potential client to consider in development of a GIS (10 marks)

QUESTION TWO (20 MARKS)

- a) Using suitable examples, explain the main types of data used in GIS (10 marks)
- b) Discuss the different levels of data classification that can be used when designing a web-based map (10 marks)

QUESTION THREE (20 MARKS)

Discuss the main barriers in the development and implementation of GIS in any given sector 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 database management system for decision-making