



MACHAKOS UNIVERSITY

University Examinations for 2019/2020 Academic Year

SCHOOL OF ENVIRONMENT AND NATURAL RESOURCES MANAGEMENT

DEPARTMENT OF ENVIRONMENTAL SCIENCES

SECOND YEAR FIRST SEMESTER EXAMINATION FOR

BACHELOR OF ENVIRONMENTAL STUDIES (COMMUNITY DEVELOPMENT)

BACHELOR OF ENVIRONMENTAL STUDIES (RESOURCE CONSERVATION)

ECD 211: INTRODUCTION TO GEO-SPATIAL TECHNIQUES

DATE:

TIME:

INSTRUCTIONS:

Answer question ONE and any other TWO questions

QUESTION ONE (30 MARKS)

- a) Explain the following terms
- i. Geographic information system (2 marks)
 - ii. Spatial data (2 marks)
 - iii. Attribute data (2 marks)
 - iv. Database (2 marks)
 - v. Topology (2 marks)
- b) Discuss the key functions used in the integrated analysis of spatial and attribute data in a GIS (10 marks)
- c) Machakos University is planning to implement a Geographic Information System for teaching and research. Discuss the key organizational factors that may impact the implementation of the system (10 marks)

QUESTION TWO (20 MARKS)

- a) Discuss the general components in the development and implementation of a Geographic Information System (10 marks)

- b) Explain the measures you would recommend for detection of errors in spatial data (10 marks)

QUESTION THREE (20 MARKS)

Discuss the different types of geodatabases that can be used in spatial data management in a GIS

QUESTION FOUR (20 MARKS)

- a) Discuss the role of maps in management of natural resources (10 marks)
- b) Using suitable illustrations, discuss the concepts used to define topological relations in a vector data (10 marks)

QUESTION FIVE (20 MARKS)

Explain the general pre-processing procedures that can be carried out to in a GIS to define the boundaries of a River Basin for Planning and Management