



## TECHNICAL UNIVERSITY OF MOMBASA

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FACULTY OF ENGINEERING AND TECHNOLOGY  
DEPARTMENT OF BUILDING & CIVIL ENGINEERING  
**UNIVERSITY EXAMINATION FOR:**  
BACHELOR OF SCIENCE IN CIVIL ENGINEERING

**ECE 2517 : GEOGRAPHIC INFORMATION SYSTEM**  
SPECIAL/SUPPLEMENTARY EXAMINATION

**SERIES: SEPTEMBER 2018**

**TIME: 2 HOURS**

### **Instructions to Candidates**

You should have the following for this examination

-Answer Booklet, examination pass and student ID

-Drawing instruments.

This paper consists of five questions.

Attempt any THREE questions.

**Do not write on the question paper.**

### **Question ONE (Compulsory) 30 Marks**

- a). Discuss the main components of GIS analysis system **(4 Marks).**
- b). Make short notes under the following sub-topics:
  - i). Lineage
  - ii). Positional accuracy
  - iii). Attribute accuracy
  - iv). Logical accuracy **(8 Marks).**
- c). Discuss the following types of accuracies:
  - i). Absolute accuracy
  - ii). Relative accuracy
  - iii). Spurious precision **(6 Marks).**
- d). Outline the reasons for implementing a GIS system **(10 Marks).**
- e). Define scanning **(2 Marks).**

### **ANSWER ANY TWO QUESTIONS FROM THIS SECTION**

#### **Question TWO (20 Marks)**

- a). Discuss six problems that would prompt GIS interest **(6 Marks).**
- b). Why is important to scan GIS documents? **(3 Marks).**

- c). Briefly outline the main objectives of GIS (3 Marks).
- d). Why is GIS technology incorporated into a wide range of management and decision making?? (8 Marks).

**Question THREE (20 Marks)**

- a). In the application of GIS, what does management and decision -making group include? (6 Marks).
- b). Describe data collection procedures in a GIS system (10 Marks).
- c). What are the main functions in cartographic display system (4 Marks).

**Question FOUR (20 Marks)**

- a). Discuss the contents of cost – benefit analysis in GIS (4 Marks).
- b). Outline the six problems suggested that would prompt GIS interest (6 Marks).
- c). Discuss major editing problems in GIS (5 Marks).
- d). List down ANY FIVE set of software tools (5 Marks).

**Question FIVE (20 Marks)**

- a). Discuss data are represented in vector and raster formats (8 Marks).
- b). How does one evaluate a digitizer (8 Marks).
- c). Discuss the main advantages of manual digitization process (4 Marks).