



TECHNICAL UNIVERSITY OF MOMBASA
SCHOOL OF ENGINEERING AND TECHNOLOGY

Department of BUILDING & Civil engineering

UNIVERSITY EXAMINATION FOR:

BACHELOR OF SCIENCE IN CIVIL ENGINEERING

ECV 4508 : GIS AND REMOTE SENSING

END OF SEMESTER EXAMINATION

SERIES: AUGUST, 2024

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). What are the main reasons of implementing a GIS system? **(8 Marks).**
- b). Define errors as in GIS, classify errors and their sources **(12 Marks).**
- c). What is scattering as applied in satellite remote sensing **(2 Marks).**
- d). Discuss advantages of manual digitizing method. How do you overcome stress and fatigue in digitization process **(6 Marks).**

ANSWER ANY TWO QUESTIONS FROM THIS SECTION

QUESTION TWO (20 Marks)

- a). What are the main components of cartographic system **(5 Marks).**

- b). Explain the contents of lineage data in GIS (6 Marks).
- c). Define the term completeness in GIS (1 Marks).
- d). What are the parameters of evaluating a digitizer (8 Marks).

QUESTION THREE (20 Marks)

- a). Discuss ANY two methods of digitizing process (6 Marks).
- b). Explain the following terms as used in GIS
 - i). Evidence
 - ii). Wisdom
 - iii). Geographic Information System (6 Marks).
- c). Outline tangible and intangible benefits of GIS (8 Marks).

QUESTION FOUR (20 Marks)

- a). What are the functions of database derivative mapping functions (6 Marks).
- b). Discuss vector data representations (4 Marks).
- c). What is scatterinng? Discuss three types of scattering (9 Marks).
- d). Define satellite remote sensing (1 Marks).

QUESTION FIVE (20 Marks)

- a). Discuss the reasons of implementing a GIS (10 Marks).
- b). Summarize errors in five categories (5 Marks).
- c). Differentiate between flat bed and drum scanners (2 Marks).
- d). What are the advantages of database management program (3 Marks).