



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 SATELLITE REMOTE SENSING

END OF SEMESTER EXAMINATION

SERIES: APRIL 2025

TIME: 2 HOURS

DATE:

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.



SGS ISO 9001:2008 Certified

QUESTION ONE (Compulsory)(30 Marks)

- a) Describe the process of satellite remote sensing (14 Marks).
- b) Explain the following processes
 - i). Map Digitization
 - ii). Cartographic Database Display System (6 Marks).
- c). State the reasons of implementing a GIS system (10 Marks).

ANSWER ANY QUESTION FROM THIS SECTION

QUESTION TWO (20 Marks).

- a) What are the main components of the spatial data quality (6 Marks).
- b) Define satellite remote sensing (2 Marks).
- c) Discuss data collection process (10 Marks).
- d) List down any four methods of evaluating a digitizer (2 Marks).

QUESTION THREE (20 Marks).

- a) What is scattering? Discuss any three processes of scattering (8 Marks).
- b) What are the advantages and limits of the manual digitization. If the operator suffers from fatigue and stress, what would be the remedy? (9 Marks).
- c). What are the main objectives of the GIS system? (3 Marks).

QUESTION FOUR (20 Marks).

- a) Discuss ANY five resolutions of a sensor (10 Marks).
- b) What is editing?. Discuss ANY two methods of editing (8 Marks).
- c) Define an error (2 Marks).



QUESTION FIVE (20 Marks).

- a) What are the main components of data lineage **(10 Marks).**
- b) What is the set of software tools of GIS **(7 Marks).**
- c) What are the main elements of the Functional Requirements study?
(3 Marks).

