



TECHNICAL UNIVERSITY OF MOMBASA

SCHOOL OF ENGINEERING AND TECHNOLOGY

Department of BUILDING & Civil engineering

UNIVERSITY EXAMINATION FOR:

BACHELOR OF SCIENCE IN CIVIL ENGINEERING

ECV 4504 : GIS AND REMOTE SENSING

SPECIAL/SUPPLEMENTARY EXAMINATION

SERIES: MARCH 2025

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). Make short notes under the following:
 - i). Cartographic Display System
 - ii). Map Digitization System **(8 Marks).**
- b). Discuss ANY two types of sensors in remote sensing **(4 Marks).**
- c). Define **editing**. Discuss ANY two methods of editing **(8 Marks).**
- d). Discuss the reasons behind implementing of a GIS system **(10 Marks).**

ANSWER ANY QUESTION FROM THIS SECTION

QUESTION TWO (20 Marks).

- a). What are the six problems that would prompt GIS interest be limited (6 Marks).
- b). Define satellite remote sensing and discuss its advantages (10 Marks).
- c). What is GIS and list its main objectives of using the system (4 Marks).

QUESTION THREE (20 Marks).

- a). What are the main components of spatial data quality (8 Marks).
- b). Differentiate between supervised and unsupervised classification (6 Marks).
- c). What are the main parameters for evaluating a scanner (6 Marks).

QUESTION FOUR (20 Marks).

- a). Discuss ANY three methods of carrying out digitization process as applied in GIS system (6 Marks).
- b). Explain the following terms
 - i). Spatial resolution
 - ii). Temporal resolution
 - iii). Swath
 - iv). Radiometric resolution
 - v). Repetitively (10 Marks).
- c). Discuss ANY four types platform of sensors in satellite remote sensing (4 Marks).

QUESTION FIVE

- a). What are the main tangible and intangible benefits in GIS (8 Marks).
- b). Mention the four stages needed for choosing GIS (4 Marks).
- c). Mentions important decisions regarding sourcing for a hardware (7 Marks).
- d). Define data in the context of GIS (1 Mark).