NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

FACULTY OF ENVIRONMENTAL SCIENCE

DEPARTMENT OF GEOSPATIAL SCIENCE

MSC DEGREE IN APPLIED GEOGRAPHICAL INFORMATION SCIENCE AND REMOTE SENSING

GEOGRAPHIC INFORMATION SCIENCE THEORY AND PRACTICE

EGR 5101

Regular Examination Paper

November 2024

This examination paper consists of 3 pages

Time Allowed: 3 hours

Total Marks: 100

Examiner's Name: Mr Albert Chrima

External Examiner: Dr M Shekede

INSTRUCTIONS

1. Answer QUESTION ONE AND ANY THREE OTHERS
2. Each question carries 25 marks

MARK ALLOCATION

QUESTION	MARKS
1.	**25**
2.	**25**
3.	**25**
4.	**25**
5.	**25**
6	**25**
TOTAL	**100**

1. Describe and explain the differences between raster and vector data models.

2. Discuss data quality issues in GIS including identifying sources of errors and methods of addressing them.

3. Explain the ethical considerations when collecting and using GIS data

4(a) Explain the benefits of topology in GIS overlay operations. **(10 marks)**

(b) Describe vector and raster overlay operations in GIS. **(15 marks)**

5. Explain the concept of spatial data analysis and its applications in natural resource management

6. Discuss the impacts of projection distortions on spatial analysis