



NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

FACULTY OF ENVIRONMENTAL SCIENCE

DEPARTMENT OF GEOSPATIAL SCIENCE

REMOTE SENSING OF GLOBAL ENVIRONMENTAL CHANGE (EGR 5105)

**MSc in Applied Geographical Information Science and Remote Sensing – Semester I (2nd intake)
Examination Paper**

November 2024

This Examination Paper consists of 2 pages

Time Allowed: 3 hours
Total Marks: 100
Special Requirements: Nil

Internal Examiner: Ms Z. Dzinotizei
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. (a) Define 'global environmental change.' **[10 Marks]**
(b) Describe and explain the present and projected trends in global environmental change. **[15 Marks]**

2. (a) Explain the importance of wetland ecosystems. **[10 Marks]**
(b) Evaluate the efficacy of remote sensing technology in mapping wetlands and monitoring their health and function. **[15 Marks]**

3. Discuss the utility of geospatial technology in developing and implementing effective wildfire management strategies.

4. (a) Describe and explain any **FIVE** drivers of biodiversity loss. **[10 Marks]**
(b) Identify and explain any **THREE** remote-sensing based methods for detecting and monitoring biodiversity change. **[15 marks]**

5. Discuss the role of remote sensing in controlling the global mean temperature rise below the set 1.5°C above pre-industrial levels.

6. (a) Elaborate on the major threats to the earth's freshwater sources. **[10 Marks]**
(b) Describe and explain the application of geospatial techniques in monitoring surface and underground freshwater resources. **[15 Marks]**