MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS
2023/2024 ACADEMIC YEAR
SECOND YEAR FIRST SEMESTER

SCHOOL OF NATURAL RESOURCE, ENVIRONMENTAL STUDIES AND AGRICULTURE
BACHELOR OF ARTS IN GEOGRAPHY AND GEOSPATIAL TECHNIQUES

COURSE CODE: GEO 2111-1
COURSE TITLE: INTRODUCTION TO REMOTE SENSING

DATE: 13/12/ 2023   TIME: 1100-1300 HOURS

INSTRUCTIONS TO CANDIDATES

Answer **ALL** questions in Section A, and any **THREE** questions in Section B. use illustrations where appropriate.

This paper consists of 2 printed pages. Please turn over

SECTION A – 20 MARKS

Q1. Describe how Remote Sensing has evolved over time and give its key applications? **(2 marks)**

Q2. Provide examples of earth surface features and their characteristic spectral signatures, and elaborate on how these signatures are used in remote sensing applications. **(4 marks)**

Q3. Explain why is it important to understand interactions between electromagnetic radiation and the atmosphere in remote sensing. **(2 marks)**

Q4. Differentiate between low-spatial resolution, medium-spatial resolution, and high-spatial resolution sensors in remote sensing and provide examples of situations where each type of resolution is most effectively applied **(4 marks)**

Q5. Compare and contrast photographic systems, scanning systems, and other types of remote sensing systems. Explain the advantages and limitations of each. **(4 marks)**

Q6. Provide an example of a real-world application where image interpretation in remote sensing has led to significant insights or decisions. **(4 marks)**

SECTION B – 30 MARKS

Q7. With specific examples, explain the process of digital image processing in remote sensing and how enhancement play a role in improving the quality of remote sensing data. **(10 marks)**

Q8. In the aftermath of a natural disaster, such as a flood or earthquake, describe how remote sensing technology can be utilized for disaster response and management. **(10 marks)**

Q9. You are tasked with monitoring a large forested area for potential signs of deforestation. Explain, in detail, the considerations you would take into account when choosing a remote sensing sensor for this task. Justify your choice based on sensor characteristics and the required resolution for accurate detection. **(10 marks)**

Q10. Discuss the concept of image classification in remote sensing. Provide an example scenario where image classification would be a critical step in data analysis. **(10 marks)**

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