



MAASAI MARA UNIVERSITY

**REGULAR UNIVERSITY EXAMINATIONS
2023/2024 ACADEMIC YEAR
THIRD YEAR FIRST SEMESTER**

**SCHOOL OF NATURAL RESOURCE,
ENVIRONMENTAL STUDIES AND
AGRICULTURE**

**BACHELOR OF URBAN AND REGIONAL
PLANNING**

**COURSE CODE: URP 3124-1
COURSE TITLE: REMOTE SENSING
APPLICATIONS**

DATE: 15TH DECEMBER, 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. Briefly describe digital image processing and its significance in remote sensing **(4 marks)**
- Q2. Explain on the importance of understanding the electromagnetic spectrum for an urban planning team using remote sensing to assess building energy efficiency. **(4 marks)**
- Q3. Elaborate on the importance of computer literacy in GIS and remote sensing. **(2 marks)**
- Q4. Discuss the evolution of remote sensing as a powerful tool for extracting ground information. **(4 marks)**
- Q5. Explain how visual image interpretation is applied in urban planning using remote sensing. **(2 marks)**
- Q6. Compare advantages and disadvantages of active and passive remote sensing systems for urban sprawl monitoring in city planning. **(4 marks)**

SECTION B – 30 MARKS

- Q7. Given a scenario where a as a planner you need to choose a sensor for monitoring air pollution and outline the considerations you should take into account and justify their choices. **(10 marks)**
- Q8. Explain the concept of image enhancement in digital image processing and discuss various techniques used for image enhancement with examples of scenarios where each technique might be effectively applied. **(10 marks)**
- Q9. As a city planner tasked with conducting a detailed land use analysis to support sustainable development initiatives, outline the steps to be followed to acquire high-resolution satellite imagery for accurate land cover classification, including considerations for selecting the most suitable source. **(10 marks)**
- Q10. A Narok County government is grappling with rapid urbanization and threats to protected green spaces. She plans to use remote sensing for monitoring land use changes. Outline the steps, benefits, and challenges in such a process. **(10 marks)**

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