

LAIKIPIA



UNIVERSITY

UNIVERSITY EXAMINATIONS

SECOND SEMESTER 2023/2024 ACADEMIC YEAR

**SECOND YEAR EXAMINATION FOR THE DEGREE OF
BACHELOR OF SCIENCE (GEOGRAPHY)**

GEOG 227: REMOTE SENSING OF THE ENVIRONMENT

STREAM: R

TIME: 2 HRS

DAY: THURSDAY [2.30P.M – 4.30P.M] DATE: 18/04/2024

THIS QUESTION PAPER CONSISTS OF TWO (2) PAGES

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INSTRUCTIONS TO CANDIDATES

- i) Answer **QUESTION ONE** and **ANY OTHER TWO** Questions.
 ii) Maps, sketches, diagrams and examples should be used where they serve to illustrate the answers.

QUESTION ONE

- a) Define remote sensing and describe the main components of an ideal remote sensing systems. **(8 Marks)**
- b) Highlight the important milestones in the historical development of remote sensing technology. **(10 Marks)**
- c) Using illustrations, highlight the key characteristics of the Electromagnetic Radiation (EMR) in remote sensing. **(7 Marks)**
- d) Outline any benefits of remote sensing technology in observing the Earth's environment. **(5 Marks)**

QUESTION TWO

Citing relevant examples, discuss the role of remote sensing technology in the following areas of resource management:

- (a) Vegetation and forestry management **(10 Marks)**
 (b) Water resource management **(10 Marks)**

QUESTION THREE

Examine the interaction of Electromagnetic Energy with the following in remote sensing process:

- (a) Space and atmosphere. **(10 Marks)**
 (b) Earth surface. **(10 Marks)**

QUESTION FOUR

- a) Explain any **THREE** parameters of the remote sensing satellite technology **(6 Marks)**
- b) Differentiate between the geo-synchronous and sun-synchronous environmental satellite orbits, highlighting their merits and demerits. **(14 Marks)**

QUESTION FIVE

Citing relevant examples, describe the various types of remote sensing platforms and highlight their potential applications and limitations. **(20 Marks)**

