



KIBABII UNIVERSITY

UNIVERSITY EXAMINATION

ACADEMIC YEAR 2023/2024

THIRD YEAR FIRST SEMESTER EXAMINATIONS

MAIN EXAMINATION

BACHELOR OF EDUCATION ARTS

COURSE CODE: GEO 311

COURSE TITLE: REMOTE SENSING

DATE: DECEMBER 5, 2023

TIME: 9:00AM – 11:00AM

DURATION: 2 HOURS:

INSTRUCTIONS TO CANDIDATES

Answer **ALL** Questions in Section (A) and any other **TWO (2)** Questions in Section (B) ►

KIBU observes **ZERO** tolerance to examination cheating This

Paper Consists of 2 Printed Pages. Please Turn Over.



Kibabii University ISO 9001:2015 Certified
Knowledge for Development

SECTION A (compulsory questions)

1. a. Define remote sensing (2marks)
- b. Highlight four advantages of using remote sensing in earth surface data acquisition (4marks).
- c. Define the following terms as applied in Remote Sensing:
 - i. Atmospheric window (2 marks)
 - ii. Spectral signature (2 marks)
 - iii. Reflection (2 marks)
- d. Highlight any four limitations of remote sensing in earth surface data acquisition. (4 marks)
- e. Outline any five soil reflectance characteristics that can be distinguished through remote sensing. (6 marks)
- f. Describe the two types of surface reflectors. (8 marks)

SECTION B (students to choose)

2. a. What is an earth satellite orbit? Illustrate with a diagram. (3 marks)
- b. Explain any three factors responsible for the control of an earth-orbiting satellite's motion (9 marks)
- c. Describe any two types of satellite orbits. (8 marks)
3. Explain how the following features would appear in an imagery:
 - a. Clear water under visible wavelength. (4 marks)
 - b. Moist and dry soils under visible bands. (6 marks)
 - c. Green vegetation under visible and near infrared wavelengths. (10 marks)
4. a. Define RADAR remote sensing. (2 marks)
- b. Highlight any three challenges associated with radar remote sensing. (3 marks)
- c. Discuss any five photo-terrain characteristic used in object identification and interpretation. (15 marks)
5. Discuss the five different applications of remote sensing in each of the following sectors:
 - a. National security. (10 marks)
 - b. Wildlife resources management. (10 marks)