FACULTY OF HEALTH, NATURAL RESOURCES AND APPLIED SCIENCES
SCHOOL OF AGRICULTURE AND NATURAL RESOURCES SCIENCES
DEPARTMENT OF AGRICULTURAL SCIENCE AND AGRIBUSINESS

QUALIFICATIONS: BACHELOR OF SCIENCE IN AGRICULTURE	
QUALIFICATIONS CODE: 07BAGA	**LEVEL:** 7
COURSE CODE: GRS621S	**COURSE NAME:** INTRODUCTION TO GIS AND REMOTE SENSING FOR AGRICULTURE
DATE: JANUARY 2025	**PAPER:** 2
DURATION: 3 HOURS	**MARKS:** 100

SECOND OPPORTUNITY/SUPPLEMENTARY EXAMINATION QUESTION PAPER	
EXAMINER:	DR. PRISCILLA HAINDONGO
MODERATOR:	PROF. JONATHAN KAMWI

INSTRUCTIONS
1. Answer all the questions in Section A and One Question for [15] marks in Section B and another for [20] marks in Section B.
2. Write neatly and clearly.
3. All written work MUST be done in blue or black ink.
4. No books, notes and other additional aids are allowed.

PERMISSIBLE MATERIALS
1. Calculator
2. Examination paper
3. Examination script

THIS QUESTION PAPER CONSISTS OF 2 PAGES
(Excluding This Front Page)

SECTION A – Answer all questions in this section.

1. Why do we need to assign a coordinate system to a scanned map? [2]

2. What is Georeferencing in Remote Sensing? [2]

3. What is the minimum RMS error acceptable when doing georeferencing for images? [2]

4. According to the Geographic coordinates, the Namibian latitudes and longitudes has a positive x (which is longitude) and a negative y which is a latitude, can you hint more on this. [2]

5. Why do we need to set up the coordinate system before recording data on a GPS? [2]

6. How do we record point features on a GPS? [2]

7. As a Namibian farmer, attribute why GIS is very important for us to know given that technology is accelerating in terms of recent developments and time change? [4]

8. Why do we need both GIS and Remote Sensing applications to update us with climate change issues in relation to Agriculture? [5]

9. Define what GIS is and why do we need to apply GIS in Agriculture? [5]

10. In brief discuss what is data Capturing in GIS and provide two different forms/examples of data capturing? [5]

11. Discuss the main difference between the user and control segment in GPS. [5]

12. Given GIS data for land tenure, what are the main land use types in Namibia. [5]

13. As a farmer how do you decide on finding the best grazing areas in Namibia before setting up your livestock farming. [5]

14. Discuss why we need to convert the units of measurements from square meters to hectares when calculating the area of your farm? Give an example of how the conversion is done? [10]

SECTION B – Answer only two questions from this section, one question for [19] marks and another question for [25] marks.

1. Discuss the difference between orthophotos' and other image types such as [19] Landsat in Remote Sensing. In your answer provide an example of how each of them is captured, case study examples on how to use each one of them and advantages for each one of them?

2. Discuss the difference between high resolution and low-resolution images, provide [19] an example of each one of the products and how best suited are they for Namibian conditions based on national and regional level?

3. How do we apply GIS, GPS and Remote Sensing knowledge in Oceanography? In [25] your discussions provide examples of how we go about deciding on the best targets for finding fishing schools during their seasons?

4. Discuss how we use GIS in weather applications by giving an example of each data [25] type to use and providing examples for each data set?