UNAM

UNIVERSITY OF NAMIBIA

FACULTY	AGRICULTURE, ENGINEERING & NATURAL SCIENCE
DEPARTMENT	ENVIRONMENTAL SCIENCES
SUBJECT	GIS AND REMOTE SENSING
SUBJECT CODE	EBL5952
DATE	OCTOBER/NOVEMBER 2021
DURATION	3 HOUR	MARKS	100

SUPPLEMENTARY EXAMINATION

Examiner: Ms. C. Simataa

External Moderator: Professor Chris Chimimba (University of Pretoria)

This question paper consists of 3 pages, incl. cover page and 7 questions.

Instructions
    Closed book examination
    Read the questions carefully
    Answer all questions in Section A and Only Two questions in Section B
    Start each question on a new page

UNIVERSITY OF NAMIBIA EXAMINATIONS

SECTION A: COMPULSORY - ANSWER <u>ALL</u> QUESTIONS   **(40 Marks)**

1. Explain any <u>six</u> of the following: (6 Marks)

    a. Geometric Correction
    b. Colour composition
    c. Digitizing
    d. Ortho-image
    e. Raster Model
    f. Resolution
    g. Thematic Map
    h. UTM

2. With eamples and with reference to an aerial photograph, discuss the elements of image interpretation.   (10 Marks)

3. (a) Define topology in Geographic Information Systems (GIS) and using examples, describe its importance.   (4 marks)

    (b) What is the difference between the two Vector data structures used in Geographic Information Systems (GIS)   (4 Marks)

4. (a) Draw and label an overview of how a remote sensing system works in order to depict its pictorial representation.   (4 Marks)

(b) Image quality relies on the interaction between electromagnetic radiation and atmospheric components at the time of image acquisition. Discuss the causes and different types of scattering with reference to the electromagnetic spectrum that may affect image quality. (12 Marks)

SECTION B: ANSWER <u>TWO</u> QUESTIONS.

5. Geographic Information Systems (GIS) data from different sources can present problems during integration and analysis. Discuss the different sources of GIS data, the possible difficulties during integration, and how they can be resolved. (30 Marks)

6. Discuss Geographic Information Systems (GIS) as a Spatial Decision Support System (SDDS) in Biodiversity Management and show how it differs from other decision support systems. (30 Marks)

7. Discuss the major steps in an image classification process in Geographic Information Systems (GIS) (30 Marks)

[TOTAL MARKS: 100]

<u>**END OF QUESTION PAPER**</u>