



*"Investing in Africa's Future"*

**COLLEGE OF SOCIAL SCIENCES, THEOLOGY,  
HUMANITIES AND EDUCATION**

**HGE309: REMOTE SENSING AND AIR PHOTO INTERPRETATION**

**END OF SECOND SEMESTER EXAMINATIONS**

**MAY 2018**

**LECTURER: Mr. D. Munasirei.**

**DURATION: THREE (3) HOURS.**

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**GENERAL INSTRUCTIONS TO**

**CANDIDATES**

1. Do **NOT** write your name on the answer sheet.
2. Use answer sheets provided.
3. This paper contains **TWO** sections – **SECTION A** and **SECTION B**.
4. Answer **FOUR** sub-questions of Question 1 in **SECTION A**.
5. Answer any **TWO (2)** questions from **SECTION B**.
6. **Take note of mark distribution in each question.**
7. Read and understand all questions before you answer.
8. Where necessary, illustrate your answers with sketches, figures and diagrams.



**SECTION A: Answer any FOUR sub-questions in Question 1.**

**(Each question in Section A carries 10 marks.)**

**Question One**

- i) Discuss the relationship between electromagnetic radiation and electromagnetic spectrum. **(10)**
- ii) Show your understanding of the terms **spacecraft** and **satellite**. **(10)**
- iii) Briefly discuss how Remote Sensing has contributed to Cartography and Geographical Information System. **(10)**
- iv) Show how a camera can be used as an excellent example of both **passive** and **active sensor**. **(10)**
- v) Briefly discuss the significance of the **atmospheric window** in the Earth-Atmosphere system in Remote Sensing. **(10)**
- vi) Explain why most remote sensing systems avoid detecting and recording wavelengths in the **ultraviolet** and **blue portions** of the spectrum. **(10)**
- vii) Using the '**grey scale**' show how a photograph can be displayed in digital format. **(10)**
- viii) Discuss the importance of any **TWO** of the following elements in studying vertical aerial photographs:
  - a) First order elements **(5)**
  - b) Second order elements **(5)**
  - c) Third order elements **(5)**
- ix) Briefly discuss any **TWO** types of photographs. **(10)**
- x) Distinguish between **metric** and **interpretative photogrammetry**. **(10)**

**(Total for Question 1 = 40 Marks)**



**SECTION B (Answer TWO Questions. Each question carries 30 marks)**

**Question Two**

“With rapid advances in optics and space communication technology, satellite remote sensing is replacing some of the earlier forms of remote sensing, such as aerial photography.” (Morad, 1991:38-39). Discuss this statement with reference to platforms and sensor technology. ↗

(30)

**Question Three**

Discuss the importance of processes involved in the interaction of electromagnetic radiation and the atmosphere in the Earth-Atmosphere system. (30)

**Question Four**

Discuss the main features and importance of the Side Looking Airborne Radar (SLAR), a non-photographic system, in explaining environmental phenomena. (30)

**Question Five**

Compare and contrast oblique and vertical aerial photographs. (30)

**END OF QUESTION PAPER**