



ZIMBABWE EZEKIEL GUTI UNIVERSITY

COLLEGE FOR LIFELONG LEARNING

**FACULTY OF SCIENCE, TECHNOLOGY, AGRICULTURE AND FOOD
SYSTEMS**

EXAMINATION PAPER

Diploma in Occupational Health and Safety

MODULE CODE : **DOHS124**
MODULE TITLE : **GIS and Remote Sensing**
DURATION : **2 Hours**
LEVEL : **1.2**
DATE : **09 JUN 2026**

INSTRUCTIONS TO CANDIDATES:

1. No cell phones are allowed in the examination venue.
2. Answer any two (2) questions
3. The number of marks for each question or part question is shown in brackets []
4. Begin each answer on a new page.
5. **DO NOT OPEN THIS PAPER UNTIL THE INVIGILATOR INSTRUCTS YOU.**

Answer any two (2) questions

1. a) Explain the different types of spatial data in GIS, characteristics and their application. (15 marks)
- b) Explain the types of satellite orbits in Geographic Information Systems (GIS) (10 marks)
2. Discuss how each component contributes to the process of collecting and interpreting data from the Earth's surface in Remote Sensing. (25 marks)
 - i) Energy Source
 - ii) Sensor
 - iii) Atmospheric Interaction
 - iv) Data Recording
 - v) Data Transmission and Processing
 - vi) Interpretation and Analysis
 - vii) Applications
3. a) Compared between passive and active sensors (10 marks)
- b) Discuss how active sensors (LiDAR systems) generate their own energy source and the advantages this provides in terms of data acquisition compared to passive sensors. (15 marks)
4. a) What are the fundamental principles of cartography that should be considered when constructing a map? Discuss how these principles influence the effectiveness and clarity of the map. (15 marks)
- b) Explain the significance of data collection and preprocessing in the GIS process. What challenges might arise during these initial stages, and how can they impact the overall analysis? (10 marks)

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