



The Co-operative University of Kenya

END OF SEMESTER EXAMINATION DECEMBER-2016

**EXAMINATION FOR THE DEGREE OF BACHELOR OF DISASTER RISK
MANAGEMENT & SUSTAINABLE DEVELOPMENT
(YR III SEM I)**

UNIT CODE: CODM 2304

UNIT TITLE: GIS & RS

DATE: 14TH DECEMBER, 2016

TIME: 2:00 P.M – 4:00 P.M

INSTRUCTIONS:

- Answer question **ONE (compulsory)** and any other **TWO** questions

QUESTION ONE

- (a) Define the following terms: (3 marks)
- Remote sensing
 - GIS
 - Black body
- (b) List the **THREE** types of RS platforms used in the 21st century giving an example for each. (3 marks)
- (c) Name the **TWO** main types of satellites used in RS (2 marks)
- (d) List any relevant GIS systems with relevance to:
- GIS software (2 marks)
 - GIS hardware (2 marks)
- (e) One of the basic principles of GIS analysis is that the data collected must be separated into layers. Discuss the above statement. (3 marks)
- (f) Differentiate between (3 marks)
- Spatial and Aspatial data
 - GPS and GPR
 - Multispectral and multistage sensing (3 marks)

QUESTION TWO

- (a) Explain the electromagnetic spectrum (3 marks)
- (b) With an illustration describe the different wavelengths and frequency bands of the sun's emitted energy (9 marks)
- (c) Using a simple illustration outline the eight (8) stages / steps of remote sensing and GIS. (8 marks)

QUESTION THREE

- (a) Describe the concept of an atmospheric window and how it affects the process of remote sensing and GIS (10 marks)
- (b) Explain **FOUR** sources of errors that affect the accuracy of GPS and how some of those errors can be eliminated during a simple survey exercise. (10 marks)

QUESTION FOUR

- (a) Using clear illustrations, describe the various data linkages techniques we have in GIS. (8 marks)
- (b) Explain how a GPS receiver computes its positional geometry with reference to latitude, longitude and altitude. (12 marks)

QUESTION FIVE

As an authority and expert, describe how you would employ RS and GIS technology in the monitoring of the changing conditions of Kilimambogo nature reserve. (20 marks)