MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS
2018/2019 ACADEMIC YEAR

FOURTH YEAR FIRST SEMESTER

SCHOOL OF TOURISM AND NATURAL RESOURCE MANAGEMENT

BACHELOR OF ARTS IN GEOGRAPHY
COURSE CODE: GEO 400
COURSE TITLE: APPLIED REMOTE SENSING AND GIS

DATE: 10TH DECEMBER, 2018 **TIME: 1100 - 1300 HRS**

INSTRUCTIONS TO CANDIDATES

Answer **ALL** questions in section **A** and any other **THREE** in section **B.**

This paper consists of 2 printed pages. Please turn over

SECTION A (25 MARKS)

1. Briefly discuss how GIS can be used in the surveillance of cholera in a slum area like Kibera **(5 marks)**
2. Explain three water quality parameters that can be monitored using remote sensing and how information about them can be extracted from remotely sensed images **(6 marks)**
3. Briefly discuss soil properties that can be monitored using remote sensing and explain how they can be extracted from remotely sensed images **(4 marks)**
4. Name and briefly explain two (2) requirements for using remotely sensed data for an urban planning application **(2 marks)**
5. Explain why we would use RADAR for mapping wetlands in a flood prone zone **(5 marks)**
6. Explain how digital terrain models are used to delineate and extract water catchment areas information **(3 marks)**

SECTION B (45 MARKS)

7. Describe the use of remote sensing in the following areas of natural hazards. In your discussion you should explain the suitable sensors and techniques to extract information **(15 marks)**
   (a) Floods
   (b) Earthquakes
   (c) Volcanic eruptions
8. (a) Explain the factors to be considered when selecting remote sensing products for an application **(8 marks)**
   (b) Write notes on the special needs of sensors to be used for geological studies **(7 marks)**
9. (i)Write short notes on the use of remote sensing in agriculture **(10 marks)**
   (ii) Discuss briefly the application of band ratioing as enhancement technique that can be applied to remotely sensed data to enable extraction of geological information **(5 marks)**
10. Discuss in detail the use of remote sensing in environmental impact assessment **(15 marks)**