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: APPLICATIONS OF REMOTE SENSING AND GEOGRAPHIC INFORMATION SYSTEMS

DATE: **TIME:**

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. Discuss Principal Components Analysis (PCA) as an enhancement technique that can be applied to remotely sensed data to enable extraction of geological information **(3 marks)**
2. What is GPS? Explain its use in precision agriculture **(5 marks)**
3. Explain two ways on how GIS can be applied in flood water assessment **(4 marks)**
4. Discuss four ways in which socio-economic factors can be mapped using remote sensing **(8 marks)**
5. Explain five (5) applications of remote sensing and GIS in engineering projects **(5 marks)**

SECTION B (45 MARKS)

6. (a) You are working with the Kenya Forest Service (KFS) in charge with management of forests. Explain three (3) GIS and remote sensing techniques that you can advise to use in forest damage assessment **(9 marks)**

   (b) Explain two (2) ways in which remote sensing can be used in water soil studies **(6 marks)**

7. (a) Explain the factors to be considered when selecting remote sensing products for an application **(8 marks)**

   (b) Write the special needs of sensors for geological studies **(7 marks)**

8. (a) Explain any three (3) remote sensing requirements for land use/ land cover mapping? **(9 marks)**

   (b) With two (2) points, explain importance of remote sensing in wetlands applications **(6 marks)**

9. Explain how you can extract different types of soils, rocks, vegetation, built up areas, beaches, coast line from Landsat images **(15 marks)**