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MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

MAIN CAMPUS

UNIVERSITY EXAMINATIONS

2023/2024 ACADEMIC YEAR

FIRST YEAR FIRST SEMESTER EXAMINATIONS

FOR THE DEGREE

OF

MASTER OF ARTS IN GEOGRAPHY

COURSE CODE: GEO 815

COURSE TITLE: ADVANCED GEOGRAPHICAL INFORMATION SYSTEMS AND REMOTE SENSING

DATE: Tuesday 5th December, 2023 **TIME:** 2:00-5:00pm

INSTRUCTIONS TO CANDIDATES

Answer **ONE** and any other **THREE** Questions

TIME: 3 Hours

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 2 Printed Pages. Please Turn Over.

Question ONE

Kenya envisages EL-NINO floods which is predicted to cause severe floods and disruptions on economics leading to loss of lives and property. Explain how GIS and Remote Sensing can be used to bring this situation under control, clearly state the types of data, kinds of processes and possible recommendations foreseen. (15mks)

Question TWO

As a GIS and Remote Sensing expert in your county in charge of county land use landcover inventory. Explain the following;

i. Significance of preparing land use land cover inventory to the county. (8mks)
ii. The need to have land use land cover change inventory for county,. (7mks)

Question THREE

a) Explain any FIVE Remote Sensing and GIS technologies that enable precision Agriculture. (5mks)

b) Discuss the challenges of adopting precision agriculture technologies in Kenya (10mks)

Question FOUR

Examine the GIS and Remote Sensing processes involved in controlling peri-urban land consumption rate in urban sprawl analysis. (15mks)

Question FIVE

a) With reference to Landsat 8 Operational land imager (OLI) sensor, explain how drought can be monitored using remote sensing vegetation indices (8mks)

b) Outline the necessity of remote sensing in crop phenology monitoring (7mks)

Question SIX

Discuss the applications of the following systems in animal tracking;

a) Satellite Argos (7mks)

b) VHF Tracking (8mks)