(University of Choice)

MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

MAIN CAMPUS

UNIVERSITY EXAMINATIONS
2022/2023 ACADEMIC YEAR

FIRST YEAR SECOND SEMESTER EXAMINATIONS

FOR THE DEGREE
OF
DOCTOR OF PHILOSOPHY IN DISASTER PREPAREDNESS AND ENGINEERING MANAGEMENT

COURSE CODE: DPE 907

COURSE TITLE: GIS AND ICT IN DISASTER MANAGEMENT

DATE: 20/4/2023 **TIME: 8-11 AM**

INSTRUCTIONS TO CANDIDATES

This paper contains **five (5) questions.**
Question **one (1) is compulsory** {total = 30 Marks}.
Attempt **any other three (3)** {total = 60 Marks} from the remaining questions.
Be brief and to the point.

TIME: 3 Hours

MMUST observes ZERO tolerance to examination cheating

SECTION 1: COMPULSORY {30 MARKS}

Question ONE

Using your own country as an example, elucidate the importance of GIS georeferenced data set in disaster management (8 Marks)

Give a brief account of the remote sensing process in data acquisition (12 Marks)

Discuss with examples the role of technology in disaster management (10 Marks)

SECTION II: ATTEMPT ANY OTHER THREE (3) QUESTIONS {60 MARKS}

Question Two

During data gathering on rainfall of a given area, a researcher discovered that one rain gauge station was missing recorded data, discuss how this researcher overcame this problem so that the data could be used for assessment of flooding within the same area (12 Marks)

Discuss the need for geospatial data in disaster management (8 Marks)

Question THREE

Discuss the importance of GIS as a tool used for data processing in disaster management giving examples (10 Marks)

Discuss the importance of aerial photography in disaster management (10 Marks)

Question FOUR

In the context of disaster management, discuss how areal precipitation within a given catchment can be estimated (12 Marks)

Discuss the process and importance of forecasting weather (8 Marks)

Question FIVE

Discuss how remote sensing, and GIS are applied in modern technology in assessing water resources of a catchment of your own choice (14 Marks)

Apply normal ratio method in a catchment to compute missing precipitation of any storm

(6 Marks)

END