*(University of Choice)*

## MASINDE MULIRO UNIVERSITY OF

## SCIENCE AND TECHNOLOGY

## (MMUST)

### MAIN CAMPUS

### UNIVERSITY EXAMINATIONS

# MAIN EXAMINATION

### 2023/2024 ACADEMIC YEAR

### THIRD YEAR FIRST SEMESTER EXAMINATION

### FOR THE DEGREE OF BACHELOR OF SCIENCE IN DISASTER PREPAREDNESS AND ENVIRONMENTAL TECHNOLOGY

**COURSE CODE: DPE305**

**COURSE TITLE: APPLIED HYDROLOGY**

**DATE: 18/12/2023**                                    **TIME: 3-5PM**

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**INSTRUCTIONS TO CANDIDATES:**

This paper contains FOUR [4] questions
Question **one [1] is compulsory [total =30 Marks]**
Attempt **any other two** questions [total = **40 Marks**] from the remaining questions

TIME:   2 Hours

## MMUST observes ZERO tolerance to examination cheating

Paper Consists of 2 Printed Pages. Please Turn Over ➤

**SECTION 1: COMPULSORY [30 MARKS]**

**Question ONE**

a) **State** any five (5) methods of computing areal rainfall of an area (5 Marks)

b) Using examples, describe any two (2) of the methods of computing areal rainfall of an area (25 Marks)

**SECTION II: ATTEMPT ANY OTHER TWO (2) QUESTIONS [40 MARKS]**

**Question TWO**

Discuss the following basic statistics used during hydrological modeling exercises .

a) Standard deviation (5 Marks)

b) Coefficient of Variation (5 Marks)

c) Coefficient of Skewness (5 Marks)

d) Coefficient of Kurtosis (5 Marks)

**Question THREE**

State and discuss any four (4) aspects of data requirement for rainfall runoff simulation (20 Marks)

**Question FOUR**

You have been employed as a hydrologist by the County Government of Nairobi. What common applications should you consider while performing catchment runoff modelling using the MIKE 11 Rainfall-runoff Modeling System? (20 Marks)