



**MASINDE MULIRO UNIVERSITY OF  
SCIENCE AND TECHNOLOGY  
(MMUST)**

**MAIN CAMPUS**

**UNIVERSITY EXAMINATIONS  
2018/2019 ACADEMIC YEAR**

**SECOND YEAR FIRST SEMESTER EXAMINATION**

**SPECIAL/SUPPLEMENTARY EXAMINATION**

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

**COURSE CODE: DPE 200**

**COURSE TITLE: NATURAL HAZARDS AND DISASTERS**

**DATE: 26/9/2019**

**TIME: 8 – 10AM**

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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 (2)** {total = 40 Marks} from the remaining questions

Be brief and to the point

**TIME: 2 Hours**

MMUST observes ZERO tolerance to examination cheating

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

## **SECTION I: COMPULSORY {30 MARKS}**

### **Question ONE**

- a) Name and briefly describe any two (2) biological hazards (10 Marks)
- b) How do the following features and situations cause flooding?
  - i. Dams (5 Marks)
  - ii. Forest fires (5 Marks)
  - iii. Ice jams (5 Marks)
- c) La Nina phenomenon triggers flooding. Discuss. (5 Marks)

## **SECTION II: ATTEMPT ANY OTHER TWO (2) QUESTIONS {40 MARKS}**

### **Question TWO**

- a) What is a natural hazard? (5 Marks)
- b) Your role as a disaster manager is to suggest and implement mitigation measures. What examples of mitigation measures would you suggest for landslides vulnerable residents of Kakamega County? (10 Marks)
- c) Give a brief description of the response and mitigation measures of floods caused by dykes (5 Marks)

### **Question THREE**

- a) What is the difference between riverine floods and flash floods? (5 Marks)
- b) An earthquake disaster is a function of the risk process. Discuss (10 Marks)
- c) With the aid of a diagram, explain the causal phenomenon of drought during El Nino conditions (5 Marks)

### **Question FOUR**

- a) Explain five (5) preparedness measures that you would suggest for the drought vulnerable residents of Kitui County? (5 Marks)
- b) Name and describe any three (3) categories of drought hazard (9 Marks)
  - a) Describe the following:
    - i. Palmer drought index (3 Marks)
    - ii. Standardized precipitation index (3 Marks)