



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

**MAIN CAMPUS**

**MAIN EXAMINATIONS**

**2021 / 2022 ACADEMIC YEAR**

**SECOND YEAR SECOND SEMESTER  
EXAMINATIONS**

**MAIN EXAMINATIONS**

**FOR**

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

**COURSE CODE: DPE 208**

**COURSE TITLE: STRUCTURAL MECHANICS AND DISASTER  
MANAGEMENT**

**DATE: 29/04/2022**

**TIME: 12 - 2PM**

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**INSTRUCTIONS TO CANDIDATES**

Answer Question ONE (COMPULSORY) and any other TWO Questions.

MMUST observes ZERO tolerance to examination cheating

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

**Question ONE (COMPULSORY 30 MARKS)**

- a) You have been employed as a structural risk analyst in the county government of Kakamega. Using diagrams, describe the safest location of buildings on a river valley. **(20 Marks)**
- b) Giving examples, identify the various categories of structural elements. **(10 Marks)**

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

**Question TWO**

- a) Using diagrams, differentiate between structural columns and beams. **(10 Marks)**
- b) Structures play a critical role in disaster risk reduction. Using examples, describe the basic principles of composing a structure. **(10 Marks)**

**Question THREE**

With the help of relevant illustrations, demonstrate how you would attain a safe house elevation on a landslide vulnerable area. **(20 Marks)**

**Question FOUR**

Various designs of structures are available for flood mitigation. Identify and describe any five (5) designs of flood mitigation structures. **(20 Marks)**