



(University of Choice)

MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

(Main Campus)

UNIVERSITY EXAMINATIONS

2022/2023 ACADEMIC YEAR

EXAMINATION

SECOND YEAR, SECOND SEMESTER EXAMINATIONS

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

&

BACHELOR OF SCIENCE IN GEOSPATIAL INFORMATION SCIENCE

COURSE CODE: DPE 207

COURSE TITLE: ENGINEERING GEOLOGY

DATE: 17/4/2023

TIME: 12-2 PM

Instructions to Candidates

- This paper contains FOUR (4) questions
- Question one is compulsory {total =30 Marks}
- Attempt any other two (2) {total = 40 Marks} from the remaining questions
- Be brief and to the point

MMUST observes ZERO tolerance to examination cheating

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

SECTION 1: COMPULSORY {30 MARKS}

Question ONE

- a) Describe the Glacial processes as agents of landscape change [4 Marks]
- b) Describe the effects of seismic loading on engineering projects [3 Marks]
- c) Differentiate between denudation and aggradation [3 Marks]
- d) Describe how volcanoes are formed [2 Marks]
- e) State the importance of engineering Geology to an environmentalist [3 Marks]
- f) List and describe the evidence supporting the theory of continental drift [4 Marks]
- g) Explain the geological factors that affect the design of a building [2 Marks]
- h) Briefly describe the following in relation to engineering geology:
 - i) Plate tectonics [3 Marks]
 - ii) Importance of igneous rocks [2 Marks]
 - iii) Earthquake Engineering [2 Marks]
 - iv) Diastrophism [2 Marks]

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

Question TWO

- a) Explain how geomorphic processes influence the design of engineering structures [10 Marks]
- b) With the aid of a sketch, describe how a Divergent plate boundary beneath a continent leads to the occurrence of an earthquakes, ocean basins, landslides, and rift valley formation [5 Marks]
- c) Explain the effects of groundwater on civil engineering projects [5 marks]

Question THREE

- a) Discuss the effects of earthquakes on structures [10 Marks]
- b) Describe the evidences supporting the theory of plate tectonics in relation to engineering Geology [10 Marks]

Question FOUR [20 Marks]

- a) Describe different magma flow types based on temperature, viscosity, and gas content [10 marks]
- b) State and describe categories of volcanoes in relation to their formation [10 Marks]

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