



(University of Choice)

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

MAIN CAMPUS

**UNIVERSITY EXAMINATIONS
2015/2016 ACADEMIC YEAR**

FIRST YEAR SECOND SEMESTER EXAMINATIONS

**FOR THE DIPLOMA
IN
CIVIL AND STRUCTURAL ENGINEERING**

COURSE CODE: DCE 054

COURSE TITLE: GEOLOGY

DATE: THURSDAY 17TH DECEMBER 2015 TIME: 9.00 – 11.00 AM

INSTRUCTIONS:

1. This paper consists of FIVE Questions
2. Answer any FOUR Questions
3. Examination duration is **2 Hours**

MMUST observes ZERO tolerance to examination cheating

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

Question One

- a) Define the term engineering Geology [2 marks]
- b) (i) Differentiate between focus and epicentre of an earthquake [4 marks]
(ii) Outline causes of Earthquake [2 marks]
- c) Explain briefly the branches of geology [12 marks]

Question Two

- a) Briefly describe weathering and explain the engineering significance of weathering of rocks [10 marks]
- b) Describe the following geological effects of wind
(i) Sand Dunes(ii) Loess [6 marks]
- c) Define an aquifer and explain types of aquifers [4 marks]

Question Three

- a) Describe mineral hardness [4 marks]
- b) Outline the uses of the following rock mineral groups
(i) Quartz group (ii) Mica group [4 marks]
- c) Explain the engineering importance of igneous rocks [6 marks]
- d) Outline the uses of the following types of rocks
(i) Limestone (ii) Sandstone (iii) Gypsum [6 marks]

Question Four

- a) Distinguish between a **fault, outcrop** and **fold** in structural geology [6 marks]
- b) Describe the significance of the following structural geology features in civil engineering (i) faults (ii) Joints [iii] folds [9 marks]
- c) Describe the interior structure of the earth [5 marks]

Question Five

- a) Explain the following methods of geological investigation
(i) Resistivity method (ii) Seismic methods [8 marks]
- b) Why is it not advisable to use geological map directly in engineering works? [4 marks]
- c) Explain the features that can be captured in engineering geological map [8 marks]