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(University of Choice)

MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

UNIVERSITY EXAMINATIONS
2021/2022 ACADEMIC YEAR
MAIN

FIRST YEAR SECOND SEMESTER EXAMINATIONS
FOR THE DEGREE
OF
BACHELOR OF SCIENCE IN DISASTER MITIGATION AND SUSTAINABLE DEVELOPMENT (DMSD)

CODE: **DSM 103**

COURSE TITLE: **MINERALS, ROCKS AND SOILS**
DATE: 28/04/2022 **TIME: 12 – 2PM**

INSTRUCTIONS TO CANDIDATES

1. This paper consists of FOUR questions
2. **QUESTION ONE IS COMPULSORY**
3. **Answer QUESTION ONE AND ANY TWO QUESTIONS**

TIME: 2 Hours

MMUST observes ZERO tolerance in examination cheating
This Paper consists of 2 printed pages, Please Turn Over

QUESTION ONE

(a) Name the constituents of an ideal soil. Show diagrammatically, the relative composition of soil constituents by volume. **(5 Marks)**

(b) A moist soil weighing 635 g is compacted into a cylinder. A subsample of the soil has a water content of 0.267g. Calculate the dry mass of soil in the cylinder.

(5 Marks)

(c) Explain why climate is an important factor in soil formation. **(10 Marks)**

(d) Using relevant examples distinguish clearly between a mineral and a rock.

(10 Marks)

QUESTION TWO

Explain the four principles of silicate minerals. **(20 Marks)**

QUESTION THREE

(a) Discuss three groups of rocks, giving representative examples. **(10 Marks)**

(b) With the help of a diagram, explain the concept of 'rock cycle'. **(10 Marks)**

QUESTION FOUR

Discuss the importance of water in:

a) Soil formation **(10 marks)**
b) As a factor in soil erosion **(10 Marks)**