



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF BUILDING & CIVIL ENGINEERING
UNIVERSITY EXAMINATION FOR:
CERTIFICATE IN BUILDING AND CIVIL ENGINEERING
ECV 1201: ENGINEERING GEOLOGY
END OF SEMESTER EXAMINATION

SERIES: AUGUST 2019

TIME: 2 HOURS

DATE: ----AUG 2019

Instructions to Candidates

You should have the following for this examination

- Answer Booklet, examination pass and student ID
- Drawing instruments.
- Scientific calculator

This paper consists of **FIVE** questions.

Attempt **any THREE** questions.

Do not write on the question paper

Mobile Phones are NOT allowed inside the examination room

QUESTION ONE

(a) Identify and describe **FOUR** metamorphic textures.

(8 Marks)

(b) Explain **THREE** factors upon which the degree of alteration attained during metamorphism depends.

(6 Marks)

(c) Describe **THREE** types of faults.

(6 Marks)

QUESTION TWO

(a) Explain the importance of dimension stone quarries.

(4 Marks)

(b) There are various geological aspects that generally contribute to effective development of a quarry. Outline FOUR of them.

(6 Marks)

(c) In regard to mechanical tunneling, describe the importance of the following rock characteristics:

(i) Toughness

(ii) Abrasiveness

(6 Marks)

(d) Identify and explain FOUR dangerous gases encountered during tunneling.

(4 Marks)

QUESTION THREE

(a) Outline SIX adverse geological conditions that engineering geologists address.

(6 Marks)

(b) Briefly explain FOUR techniques used by engineering geologists in their investigation.

(6 Marks)

(c) Describe the following physical properties of rock-forming minerals:

(i) Luster

(ii) Tenacity

(iii) Diaphaneity

(iv) Streak

(8 Marks)

QUESTION FOUR

(a) Describe the following process of forming igneous rocks.

(4 Marks)

(b) Describe a sill and its formation.

(6 Marks)

(c) Identify and explain THREE compositional subdivisions of sedimentary rocks based on their mineralogy.

(d) Briefly describe sedimentary rocks, stating the process of formation

(4 Marks)

QUESTION FIVE

(a) With the aid of a sketch, describe an Overfold.

(7 Marks)

(b) Briefly explain the method used to recognize folds in the field.

(3 Marks)

(c) Identify and explain FOUR purposes of dam construction.

(8 Marks)

(d) Briefly describe the composition of 'Mohale dam'.

(2 Marks)