



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: APRIL 2025

TIME: 2 HOURS

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of five questions.

Attempt any THREE questions.

Do not write on the question paper.

QUESTION ONE

(a) Briefly explain the importance of geological studies. (8 Marks)

(b) Identify and explain FOUR methods used by geologists in their investigations. (8

Marks) (c) Explain the following terms:

(i) Hardness

(ii) Cleavage (4 Marks)

QUESTION TWO (20 Marks)

(a) Describe the following terms as applied to igneous rocks:

(i) Plutons

(ii) Stock

(iii) Dykes (6 Marks)

(b) Describe the distinction of extrusives from intrusives on site. (4 Marks)

(c) Briefly explain the process of formation of sedimentary rocks. (6 Marks)

(d) Briefly explain the following:

(i) Form

(ii) Surface texture

(iii) Rounding (4 Marks)

QUESTION THREE (20 Marks)

(a) Identify and explain the TWO factors that affect metamorphism in rocks. (6 Marks)

(b) Explain THREE factors that influence degree of alteration during metamorphism. (6 Marks)

(c) Identify and explain FOUR indicators of faults in a given area. (8 Marks)

QUESTION FOUR (20 Marks)

(a) Identify and explain THREE factors for selection of a dam site. (6 Marks)

(b) Identify and explain TWO purposes of constructing dams. (4 Marks)

(c) Briefly describe hard rock quarries, stating their use in construction. (7 Marks)

(d) Outline THREE purposes of drilling rock. (3 Marks)

QUESTION FIVE (20 Marks)

(a) Describe the effect of the following on mechanical tunneling:

(i) Hardness

(ii) Faults (9 Marks)

(b) Outline SIX features of a geological map. (6 Marks)

(c) Explain the following terms:

(i) Inlier

(ii) Outlier (4 Marks)