



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

SPECIAL/SUPPLEMENTARY EXAMINATION

SERIES: NOVEMEBR 2024

TIME: 2 HOURS

DATE: Pick Date NOV 2024

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) (i) Explain the term engineering geology.
(ii) Explain the role of an engineering geologist.
(6 Marks)
- (b) Explain the following:
(i) Wetland rehabilitation
(ii) Geohazard mitigation
(4 Marks)
- (c) Describe the following physical properties of rock forming minerals:
(i) Hardness
(ii) Cleavage
(iii) Fracture
(4 Marks)
- (d) Identify and define FOUR terms used to describe tenacity in minerals.



(6 Marks)

QUESTION TWO (20 Marks)

(a) Explain the following as applied to igneous rocks:

- (i) Plutons
- (ii) Stock
- (iii) Dykes

(6 Marks)

(b) In regard to igneous rocks, explain the site distinction of intrusives from extrusives.

(4 Marks)

(c) Describe the formation process of sedimentary rocks.

(6 Marks)

(d) Outline FOUR parameters used to describe the form of a clast.

(4 Marks)

QUESTION THREE (20 Marks)

(a) Explain the THREE sources of heat that contribute to increase in temperature during metamorphism.

(4 Marks)

(b) Identify and explain THREE metamorphic textures.

(6 Marks)

(c) Identify and explain FOUR features **effects of faulting** for recognizing faults in the field

(8 Marks)

(d) Identify and explain TWO terminologies applied to folds.

(2 Marks)

QUESTION FOUR (20 Marks)

(a) (i) Define the term dam.

(ii) Identify and explain TWO factors that influence selection of a dam site.

(6 Marks)

(b) Explain THREE main purposes of dam construction.

(6 Marks)

(c) Describe TWO types of **stone** quarries, stating their uses.

(8 Marks)

QUESTION FIVE (20 Marks)

(a) (i) Briefly describe a rock tunnel.

(ii) Explain ONE method of tunneling

- (b) Briefly explain ONE geological problem associated with tunneling. (8 Marks)
- (c) Outline FOUR features of a geological map. (2 Marks)
- (d) Outline FOUR uses of geological maps. (4 Marks)
- (e) Explain the term Inlier. (4 Marks)
- (2 Marks)

