



TECHNICAL UNIVERSITY OF MOMBASA
**Faculty of Engineering &
Technology**

DEPARTMENT OF BUILDING & CIVIL ENGINEERING
DIPLOMA IN BUILDING & CIVIL ENGINEERING

EBC 2107: ENGINEERING GEOLOGY

SPECIAL/SUPPLEMENTARY EXAMINATION
SERIES: OCTOBER 2013
TIME ALLOWED: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer Booklet*

This paper consists of **FIVE** questions.

Answer any **THREE** questions

Maximum marks for each part of a question are as shown

This paper consists of **TWO** printed pages

Question One

a) Distinguish the following:

- (i) Mica from quartz based on cleavage
 - (ii) Fluorite from calcite based on hardness
 - (iii) Pyrite from Galena based on colour
 - (iv) Haematite from magnetite based on streak
- (4 marks)**

b) Explain the following terms as applied to minerals:

- (i) Streak
 - (ii) Diaphaneity
 - (iii) Luster
 - (iv) Hardness
- (12 marks)**

c) Explain the abundance of quartz in sands compared to mica (4 marks)

Question Two

a) Explain the term cement as applied to sedimentary rocks (3 marks)

b) Describe a dyke as a igneous structure (7 marks)

c) Outline FIVE characteristics of a basalt (10 marks)

Question Three

a) With the aid of sketches, distinguish heave from overlap as applied to faulting . (6 marks)

b) Explain the following:

- (i) Significance of folds
 - (ii) FOUR geological effects caused by faults
- (14 marks)**

Question Four

a) Briefly explain prospecting of quarry sites (6 marks)

b) Explain the geological influence of geology on soft rock excavation (12 marks)

Question Five

a) Explain the following terms:

- (i) Inlier
 - (ii) Strike
- (4 marks)**

b) Explain FOUR major factors to be considered when selecting a site construction of a dam **(8 marks)**

c) Outline FOUR major geological problems that must be addressed when tunneling (8 marks)