



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

DEPARTMENT OF BUILDING & CIVIL ENGINEERING

DIPLOMA IN ARCHITECTURE (DARC 13S)

EBC 2107: GEOLOGY & CLIMATOLOGY

END OF SEMESTER EXAMINATION

SERIES: APRIL 2014

TIME ALLOWED: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer Booklet*
- *Scientific Calculator*

This paper consists of **FIVE** questions. Answer any **THREE** questions of the **FIVE** questions

All questions carry equal marks

Maximum marks for each part of a question are as shown

Use neat, large and well labeled diagrams where necessary
This paper consists of **THREE** printed pages

Question One

- a) Distinguish the following: **(4 marks)**
 (i) Mica from calcite based on cleavage
 (ii) Calcite from quartz based on hardness
 (iii) Quartz from pyrite based on luster
 (iv) Magnetic from fluorite based on magnetism **(4 marks)**
- b) Explain the following giving significance for each: **(8 marks)**
 (i) Mineral hardness
 (ii) Mineral cleavage
- c) Outline the criteria for distinguishing a volcanic stratum from an igneous intrusion. **(8 marks)**

Question Two

- a) With the aid of a sketch, briefly describe a sill. **(4 marks)**
- b) Outline the following: **(9 marks)**
 (i) FOUR characteristics for tuff
 (ii) FIVE characteristics for hornfel
- b) Distinguish granite from a limestone. **(7 marks)**

Question Three

- a) Explain the role of secondary quartz in a quartzite **(4 marks)**
- b) Outline THREE metamorphic changes that can occur. **(6 marks)**
- c) Outline FIVE factors contributing to thermal metamorphism **(10 marks)**

Question Four

- a) Outline FOUR unique features found in Nyanzian and Kavirondian formation. **(8 marks)**
- b) Explain formation and significance of the following in Duruma basin:
 (i) Sand dunes
 (ii) Lagoon
- c) Outline unique features for any THREE of the following: **(5 marks)**
 (i) Mariakani sandstones
 (ii) Mrima hill of kwale
 (iii) Dzombo spring
 (iv) Coral reef complex **(5 marks)**

Question Five

- a) Distinguish weather from climate **(2 marks)**
- b) Briefly explain the following:
- (i) Radiation
 - (ii) Human activity in modification of climate **(8 marks)**
- b) Briefly explain Architectural designs taken by man in response to climatic conditions. **(10 marks)**