



THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)
Faculty of Engineering and Technology

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING
BRIDGING TO HIGHER DIPLOMA IN BUILDING & CIVIL ENGINEERING
HIGHER DIPLOMA IN BUILDING & CIVIL ENGINEERING

EBC 3114: ENGINEERING GEOLOGY
SPECIAL/SUPPLEMENTARY EXAMINATION

SERIES: MAY/JUNE 2012

TIME: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer Booklet*
- *Mathematical tables*
- *Scientific calculator*

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

Maximum marks for each part of a question are clearly shown

This paper consists of **TWO** printed pages

Question 1 (20 marks)

- a) Explain the significance of hardness for primary minerals in a granite (6 marks)
- b) Outline **FOUR** characteristics of a limestone (8 marks)
- c) Differentiate a conglomerate from an agglomerate (6 marks)

Question 2 (20 marks)

- a) Outline characteristics of the following
 - (i) Tuff
 - (ii) Schist
 - (iii) Basalt(12 marks)
- b) Explain the abundance of quartz than mica mineral fragments in a sand deposit on the beach (8 marks)

Question 3 (20 marks)

- a) Outline **FIVE** contact metamorphic changes that can occur to an argillaceous sediment (10 marks)
- b) Explain the effect of directed pressure as metamorphic agent in a regional metamorphic belt (10 marks)

Question 4 (20 marks)

- a) Outline **FOUR** geological problems that can be encountered in dam sites (8 marks)
- b) Outline **TWO** of following
 - (i) Geological aspects of use of explosives in rock tunneling
 - (ii) Crest zone of a folded bed with respect to ground fluids(12 marks)

Question 5 (20 marks)

- a) Outline **FOUR** geological significance of faults (8 marks)
- b) Briefly explain the difference in crushing strength between a limestone and basalt (12 marks)