



# 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**

**EBC 2414: ENGINEERING GEOLOGY**

**END OF SEMESTER EXAMINATION**

SERIES: AUGUST/SEPTEMBER 2011

**TIME: 2 HOURS**

**Instructions to Candidates:**

You should have the following for this examination

- Answer booklet

This paper consists of **FIVE** questions in **TWO** sections: A and B

Answer question **ONE** is compulsory from Section A and any other **TWO** questions from section B

Maximum marks for each question are as shown

This paper consists of **THREE** printed pages

### Question 1

- a) Outline major roles of geology in construction industry (4 marks)
- b) Distinguish the mode of formation of two major types of igneous rocks (5 marks)
- c) With the aid of sketches, describe the following:
  - (i) Dyke
  - (ii) Sill
  - (iii) Batholith (18 marks)
- d) State processes that form sedimentary rocks (3 marks)

### Question 2

- a) Explain the term metamorphism as applied in petrology (2 marks)
- b) Outline the **FOUR** categories used to classify igneous rocks giving **TWO** examples of typical rock types (8 marks)
- c) With the aid of sketches, describe **FOUR** types of faults (10 marks)

### Question 3

- a) Write short notes on the following:
  - (i) Regional metamorphism
  - (ii) Contact metamorphism (8 marks)
- b) Explain the meaning of the following terms
  - (i) Schist
  - (ii) Gneiss (4 marks)
- c) Describe sources of ground water (8 marks)

### Question 4

- a) State purposes of Rock tunneling (2 marks)
- b) Explain the meaning of a dam based on engineering geology (2 marks)
- c) Briefly explain the main purposes of constructing dams (8 marks)
- d) Briefly explain the following quarry prospecting methods (8 marks)

**Question 5**

- a) Outline engineering geological factors that apply to selection of building stones (6 marks)
- b) Briefly discuss with the aid of sketches **THREE** types of folds (9 marks)
- c) Outline **FIVE** geological factors that are influenced by faults (5 marks)