



THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

((A Constituent College of JKUAT)

(A Centre of Excellence)

**Faculty of Engineering
& Technology in Conjunction with
Kenya Institute of Highways and
Building & Technology (KIHBT)**

DEPARTMENT OF BUILDING & CIVIL ENGINEERING

HIGHER DIPLOMA IN CONSTRUCTION

EBE 3203: CONSTRUCTION TECHNOLOGY & SERVICES III

END OF SEMESTER EXAMINATION

SERIES: AUGUST 2012

TIME: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer Booklet*
- *Calculator*
- *Drawing Instruments*

This paper consists of **FIVE** questions

Answer any **THREE** questions

All questions carry equal marks
This paper consists of **THREE** printed pages

Question One (20 Marks)

- a) (i) Define the following terms as applied in the construction of stairs.
- i) Riser
 - ii) Newel
 - iii) Pitch hal
 - iv) Flight
- (4 marks)**
- (ii) Explain the **THREE** main functional equipments for stairs in a building. **(6 marks)**
- b) (i) Differentiate between plastering and rendering.
- (ii) Explain the following painting techniques.
- Priming
 - Undercoating
 - Finishing, and
 - Knotting
- (10 marks)**

Question Two (20 marks)

- a) (i) With the aid of a sketch, describe the construction of a flexible pavement.
- (ii) Briefly explain how surface water drainage system can be suitably incorporated in an urban road. **(10 marks)**
- b) With the aid of sketches explain the following domestic water supply systems:
- i) Indirect cold water supply system
 - ii) Indirect hot water supply system
- (10 marks)**

Question Three (20 marks)

- a) (i) Describe **TWO** types of electrical circuits used in domestic installations.
- (ii) Describe the following systems of electrical wiring.
- Conduit system
 - Non-Conduit system
- (10 marks)**
- b) (i) List any **FIVE** principles of good drainage.
- (ii) Briefly differentiate between 'separate and combined' systems of underground drainage. **(10 marks)**

Question Four (20 marks)

- a) (i) State **THREE** reasons why land drainage may be necessary.
- (ii) Briefly explain the process of land drainage. **(10 marks)**
- b) With the aid of sketches, describe the following methods of testing drains:
- i) Smoke test
 - ii) Water test
- (10 marks)**

Question Five (20 marks)

- a) Using line-diagrams, explain the following air-conditioning systems, stating the advantages and disadvantages of each.
- i) Single duct
 - ii) Dual duct
- (15 marks)**
- b) Outline **FIVE** factors to be considered in choosing a floor finish.
- (5 marks)**