



THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)

(A Centre of Excellence)

Faculty of Engineering & Technology

DEPARTMENT OF BUILDING & CIVIL ENGINEERING

HIGHER DIPLOMA IN CONSTRUCTION

EBC 3133: CONSTRUCTION TECHNOLOGY AND SERVICES II

SPECIAL/SUPPLEMENTARY EXAMINATION

SERIES: OCTOBER 2012

TIME: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer Booklet*
- *Drawing Instruments*

- Calculator

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 (20 Marks)

- a) Briefly explain the meaning of shoring as applied in the construction industry. **(4 marks)**
- b) State any **FOUR** situations where shoring may be required. **(8 marks)**
- c) Outline the procedure for the construction of a dead shoring system. **(9 marks)**

Question Two (20 Marks)

- a) With the aid of a sketch, illustrate the construction of formwork to an insitu-reinforced concrete slab and beam construction. **(6 marks)**
- b) Describe the following types of scaffolds:-
 - i) Independent
 - ii) Mobile **(8 marks)**
- c) With the aid of sketches, describe the following types of site fencing.
 - i) Fan hoarding
 - ii) Vertical hoarding **(6 marks)**

Question Three (20 Marks)

- a) Explain the following terms as applied to framed construction of buildings:
 - i) Main beam
 - ii) Secondary beam
 - iii) Column **(6 marks)**
- b) (i) Explain the effect of wind pressure on high-rise buildings. **(4 marks)**
(ii) Explain any **THREE** methods of wind bracing a high-rise framed structure. **(6 marks)**

Question Four (20 Marks)

- a) (i) Explain any **THREE** types of walling materials
(ii) With the aid of a sketch, describe curtain walling. **(8 marks)**
- b) (i) Briefly explain the **TWO** modes of sound transmission. **(3 marks)**
(ii) Explain the **THREE** possible reactions that can occur when a sound is produced within a building. **(9 marks)**

Question Five (20 Marks)

- a) Briefly describe the following types of floor construction.
 - i) Self centering
 - ii) Partially self centering
 - iii) Non-self centering **(9 marks)**
- b) With the aid of sketches, describe the following types of lattice truss roof constructions:
 - i) Symmetrical multispan
 - ii) Asymmetrical cantilever **(7 marks)**

c) Describe the following roof covering materials:

- i) Sheets
- ii) Bituminous felts

(4 marks)