



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2018/2019

FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF
SCIENCE

BCM 105 : CONSTRUCTION METHODS I

DATE: THURSDAY 20TH DECEMBER 2018

TIME: 2.00 P.M. – 4.00 P.M.

INSTRUCTIONS

1. You should have the following in the examination room
 - Answer Booklet
 - Stationary
2. Section One is compulsory
3. Answer any TWO questions from Section Two
4. Maximum marks for each part of a question are shown

SECTION ONE - COMPULSORY (TOTAL 30 MARKS)

1. a) Define the term 'foundation' and state its main purpose in a building (2 marks)
- b) State **three** methods of soil exploration/investigation (3 marks)
- c) Illustrate any **two** ways of ensuring safety during excavation (4 marks)
- d) State **four** factors to consider in choice of a building site (2 marks)
- e) Outline the procedure of setting out a building (3 marks)
- f) State **four** factors to consider in selection of an excavation method (2 marks)
- g) Sketch and label a corner profile board (4 marks)

- h) State at least **two** roles of each of the following members /parties in a building project
- i) Builder
 - ii) Clerk of works
 - iii) Quantity surveyor
 - iv) Project manager
 - v) General foreman
- (10 marks)

SECTION TWO: Answer any Two Questions (Total – 40 marks)

2. a) State **four** functional requirements of walls (4 marks)
- b) State **two** advantages and **two** disadvantages of cavity wall construction (4 marks)
- c) Define the term arch (2 marks)
- d) Illustrate the following types of windows and doors
- i) Bay window
 - ii) Vertical and Horizontal pivoted windows
 - iii) Dormer window
 - iv) The back side of a braced and ledged battened/match boarded door
 - v) An exposed side of a skeleton/hollow core flush door (10 marks)
3. a) Differentiate between a flat roof and a pitched roof (2 marks)
- b) Sketch a typical roof structure and label at least eight members (6 marks)
- c) Sketch and label both **plan** and **elevation** of the following
- i) Bifurcated stair
 - ii) Quarter-turn newel stair
 - ii) Geometrical stair (9 marks)
- d) State **three** advantages of RCC stairs over other materials (3 marks)

4. a) Illustrate **four** types of shallow foundation and label them accordingly (8 marks)
- b) With an aid of a sketch illustrate a section through a typical trench timbering in loose soil (4 marks)
- c) Sketch a section through a solid ground floor (8 marks)
5. a) Outline the procedure of determining the building load on foundation (4 marks)
- b) State the building code regulations on foundation (3 marks)
- c) Explain the following terms as used in foundations
- i) Bearing pressure
 - ii) Bearing capacity
 - iii) Settlement
 - iv) Back filling
 - v) Statutory instruments (5 marks)
- d) Illustrate **three** types of ground water drainage systems (3 marks)
- e) State **five** causes of foundation failure (5 marks)