



MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)
University Examinations for 2015/2016

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

SECOND SEMESTER EXAMINATION CERTIFICATE IN BUILDING
CONSTRUCTION TECHNOLOGY

BCEBT215: BUILDING TECHNOLOGY IV

Date: 9/8/2016

Time: 2:00 – 4:00 PM

Instructions:

- *This paper comprises of **five** questions*
 - *Question **one** is **compulsory** and carry 30 marks*
 - *Answer any **other two** questions*
- 1 (a) Outline FOUR principles of a good drainage system (4marks)
- (b) With the aid of labelled sketches show each of the following types of stairs in plan
- (i) Dog-leg stair (3 marks)
- (ii) Quarter turn stair with winders (3 marks)
- (c) (i) Define a lintel (2 marks)
- (ii) List three materials used in the construction of a lintel. (3 marks)
- (iii) Outline FIVE requirements of a good formwork (5 marks)
- (d) (i) Sketch and label a vertical through a septic tank (5 marks)
- (ii) Briefly describe how ceramic wall tiles are laid (5 marks)
2. (a) (i) State THREE points where an inspection chamber may be required in a drainage system. (3 marks)

- (ii) Use a line diagram to show the plan of a separate system of drainage (7 marks)
 - (b)
 - (i) State FOUR functional requirements of walls. (4 marks)
 - (ii) illustrate the building code requirements for the following in a public building
 - Width of stair
 - Tread
 - Headroom (6 marks)
- 3.
 - (a)
 - (i) Briefly describe how to lay clay tiles on a hardened concrete Floor. (5 marks)
 - (ii) Briefly explain FIVE requirements of reinforcement bars (5 marks)
 - (b)
 - (i) With the aid of a well labelled sketch describe a simple lintel formwork . (5 marks)
 - (ii) Define the term ARCH . (2 marks)
 - (iii) Sketch and label a soldier arch. (3 marks)
- 4.
 - (a)
 - (i) With the aid of sketches briefly explain the following in drainage
 - combined system (3 marks)
 - partially separate system (3 marks)
 - (ii) State TWO reasons for providing cover to reinforcements (2 marks)
 - (b)
 - (i) A straight flight of a private stair is to be constructed between two consecutive floors with total rise of 2.775m and going of 3.000m if one going is 250mm

Calculate –

- the number of treads required

- the height of one riser (4 marks)

(ii) With the aid of sketches describe how one and half brick squint wall is bonded in English bond. (6 marks)

5 (a) Briefly describe the following terms as used in stairs

-going

-rise

-landing

-headroom

-tread (10 marks)

(b) (i) Briefly explain why floor and wall tiling has become very popular finish in finishing of walls and floors. (4 marks)

(ii) State SIX factors governing the choice of a wall finish. (6 marks)