



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 FOR CERTIFICATE IN BUILDING
CONSTRUCTION TECHNOLOGY

BCE BT 215: BUILDING TECHNOLOGY IV

Date: 4/12/2015

Time: 8:30 – 10:30 AM

INSTRUCTIONS

- This paper consists of five questions
- Question one is compulsory and carry 30 marks
- Answer any other two questions

- State two reasons for providing a concrete cover in reinforced concrete work. (2 marks)
 - State three purposes of bonding (3 marks)
 - The figure I below shows a layout of a squint corner in Flemish bond of one and a half brick thick wall. Sketch plans of alternate courses to show the bonding details. (5 marks)
 - State four functional requirements of formwork (4 marks)
 - State two structural requirements for stairs (2 marks)
 - Illustrate the building code requirements for minimum dimensions of each of the following in a public building stair
 - Width of stair (2 marks)
 - Tread (2 marks)
 - Headroom (2 marks)
 - State four principles of a good drainage (2 marks)
 - Using a line diagram, show the plan of a separate system of drainage (2 marks)
- The figure II below shows un bonded plan view of one and a half brick thick wall. Show the arrangement of alternative courses in English bond. (6 marks)
 - State two objectives of plastering (2marks)

- (iii) State four building code requirements for a stairway serving one dwelling . (4 marks)
- (b) Foul water from kitchen ,wc and shower of a dwelling house is to be drained in to septic tank .The total length of the drainage is 30m. if the drainage changes direction once, make a line diagram and indicate the position of the following:
- manholes
 - septic tank
 - services in the dwelling house (8 marks)
3. (a) (i) A straight flight of a private stair is to be constructed between two successive floors with a total rise of 2.775 and going of 3.500m. if one going is 250mm,Calculate
- The number of treads required (2 marks)
 - The height of one riser (2 marks)
- (ii) Outline the procedure of fixing glazed tiles on a wall (6marks)
- (b) With the aid of sketches briefly explain the following in drainage:
- Partially separate system (5 marks)
 - Combined system (5 marks)
4. (a) With the aid of a well labelled sketch illustrate the following terms as used in the stair.
- going (2 marks)
 - riser (2 marks)
 - tread (2 marks)
 - waist (2 marks)
 - landing (2 marks)
- (b) Briefly describe five general requirements of a stair. (10 marks)
5. (a) State five factors to be considered when selecting a floor finish. (5 marks)
- (b) Briefly differentiate between an in situ floor finish and an applied floor finish and give an example in each case. (5marks)
- (c) Sketch the formwork to be used to cast the upper floor concrete structure shown below figure III naming all the parts. (10marks)