



MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)

University Examinations 2015/2016

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

SECOND SEMESTER EXAMINATION FOR CERTIFICATE IN BUILDING

BCE BT 215: BUILDING TECHNOLOGY IV

Date: 25/4/2016

Time: 8:30-10:30 AM

INSTRUCTIONS

This paper consists of FIVE questions

Answer question one and other two questions in this paper

1.
 - a) Sketch and label each of the following drainage systems
 - (i) Combined (4 marks)
 - (i) Separate (4 marks)
 - b)
 - (i) Differentiate between a common and a private stair (4 marks)
 - (ii) List four types of stairs (4 marks)
 - c)
 - (i) Describe an arch as applied to openings in buildings (2 marks)
 - (ii) State three factors which determine the type of centre to be used for an arch construction (3 marks)
 - (iii) Sketch and label an elevation of a gauged segmental arch (3 marks)
 - d)
 - (i) List three functional requirements of a formwork (3 marks)
 - (ii) Outline three advantages of steel formwork over timber formwork (3marks)
2.
 - (a)
 - (i) outline four principles of a good drainage system (4 marks)
 - (ii) To a scale of 1:100 draw plans of courses 1 and 2 of the wall shown in figure 1, built in Flemish bond (6 marks)
 - (b)
 - (i) State four functional requirements of walls (4 marks)
 - (ii) Sketch and label a vertical section through a septic tank (6 marks)

3. (a) (i) state four building code requirements for a stairway serving one dwelling (4 marks)
- (ii) Sketch and label a cross section through a timber mould box to be used at an opening (6 marks)
- (b) (i) State three reasons for using a concrete cover (3 marks)
- (ii) Outline the procedure of fixing glazed tiles on a wall (7marks)
4. (a) (i) State three points where an inspection chamber may be required in a drainage system (3marks)
- (ii) Draw plans of alternative courses in one and half brick thick 45 degrees junction wall in English bond shown in figure 2 (7 marks)
- (b) Briefly describe the procedure of setting out a simple rectangular building (10 marks)
5. (a) (i) Define a lintel (2 marks)
- (ii) List four materials used in the construction of lintels (2 marks)
- (iii) Briefly differentiate the following types of spans –small, medium and large spans as used in openings in walls (3 marks)
- (b) (i) State four basic requirements of reinforcements (4 marks)
- (ii) Briefly describe how quarry tiles are laid on a hardened concrete base (6 marks)
- (iii) Define the following terms as used in stairs,
 - i. Going
 - ii. Rise
 - iii. Landing (3 marks)