



MACHAKOS UNIVERSITY

University Examinations 2016/2017

SCHOOL OF ENGINEERING AND TECHNOLOGY DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

SECOND YEAR SECOND SEMESTER EXAMINATION FOR CERTIFICATE IN BUILDING CONSTRUCTION TECHNOLOGY BCE BT 215 BUILDING TECHNOLOGY IV

DATE:

TIME:

INSTRUCTIONS

Answer Question One and Any Other Two Questions

1.
 - a)
 - i Briefly describe how floor tiles are laid on a hardened concrete base (4 marks)
 - ii State four requirements of a good formwork (4 marks)
 - iii State two structural requirements for stairs (2 marks)
 - b)
 - i Outline four principles of a good drainage system (4 marks)
 - ii Briefly explain why a concrete lintel is composed of steel and concrete (4 marks)
 - iii Sketch and label a straight arch (4 marks)
 - c) With the aid of sketches show each of the following types of stairs
 - i Quarter turn stair with winders (3 marks)
 - ii Dog leg stair (3 marks)
2.
 - a) Briefly describe the following terms as used in stairs
 - i. Rise
 - ii. Tread
 - iii. Going
 - iv. Landing
 - v. Headroom (10 marks)

- b) Briefly describe the how one and half brick squint wall is bonded in Flemish bond (6 marks)
 - c) State three functions of a floor finish (3 marks)
 - d) State two functions of stairs (1 mark)
3. a) With the aid of sketches briefly explain the following types of drainage systems
- i Partially separate system (4 marks)
 - ii Combined system (4 marks)
- b) i State two reasons for providing cover to reinforcements (2 marks)
- ii Describe an arch as applied in openings in buildings (2 marks)
- iii Sketch and label a vertical section through a septic tank (6 marks)
- c) State two advantages of of steel form work over timber form work (2 marks)
4. a) Briefly differentiate the following types of spans
- i. Small span
 - ii. Medium span
 - iii. Large span (3 marks)
- b) i. State three points where an inspection chamber may be required in a drainage system (3 marks)
- ii. Write down four building code requirements for a stairway serving one dwelling (4 marks)
- c) i. State six factors to be considered when selecting a floor finish (6 marks)
- ii. A straight flight of a private is to be constructed between two successive floors with a total rise of 2775mm and going of 3500mm if one going is 250mm calculate-the height of one riser (2 marks)
- the number of treads required (2 marks)
5. a) Use a line diagram to show the of a separate system of drainage (7 marks)
- b) Briefly differentiate between a wall and a column (4 marks)
- c) i) Briefly explain five requirements of reinforcements (5 marks)
- ii) With the aid of sketches describe how a one and half brick acute angle wall is bonded in English bond (4 marks)