



MACHAKOS UNIVERSITY

University Examination 2018/2019

SCHOOL OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF BUILDING AND CIVIL ENGINEERING
FIRST YEAR SEMESTER TWO EXAMINATION FOR CRAFT
CERTIFICATE IN BUILDING TECHNOLOGY MODULE ONE
1704/103 BUILDING CONSTRUCTION 1 AND DRAWING

DATE: 17/4/2019

TIME: 2:30 – 5:30

INSTRUCTIONS:

You should have the following for this examination:

- **Answer booklet**
- **Scientific Calculator /Mathematical table**
- **Drawing instruments**

This paper consists of Eight Questions in TWO Sections A and B

- **Answer FIVE questions choosing TWO questions from section A, TWO questions from section B and ONE question from either sections**
- **All questions carry equal marks**
- **Maximum marks for each part of questions are shown**
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SECTION A: Answer at least TWO questions from this section

1. a) i) Compare and contrast environmental considerations in relation to a building location (5 marks)
ii) Briefly describe the evolution of the built environment (5 marks)
- b) With well labeled sketches, show the detail of the following types of foundations
 - i) Traditional strip foundation (5 marks)
 - ii) Wide strip foundation. (5 marks)
2. a) List four functional requirements of a good foundation (8 marks)

- b) With the aid of neat sketches, differentiate between a brick wall in Flemish and English bonds (12 marks)
3. a) State five functions of a wall (10 marks)
- b) Explain the following terms as applied to walls:
- i) Plastering and Rendering (4 marks)
- ii) Pointing and jointing (4 marks)
- c) Briefly explain the term “Settlement” (2 marks)
4. a) List Four Functions of hardcore under a floor slab
- b) Make neat sketches of the following types of single roofs (16 marks)
- i) lean to roof
- ii) couple roof
- iii) closed couple roof
- iv) collar roof

SECTION B TECHNICAL DRAWING

5. a) Draw a rectangle of sides 65mm and 38mm and convert it into a square of equivalent area using geometrical method. (5 marks)
- b) Construct a regular pentagon of sides 42mm. (5 marks)
- c) Fig 5 shows the layout of a crank mechanism in which **OB** rotates about **O** and **A** slides as shown. Draw the locus of point **C** for one revolution of the crank pin. (10 marks)
6. Fig 6 shows orthographic views of a block. Assemble the views and draw in isometric projection, making corner **C** the lowest point. (20 marks)
7. Fig 7 shows a pictorial view of a cast iron block. Draw the following views in **FIRST ANGLE** projection;
- i) A front elevation in the direction of arrow **F**,
- ii) Right end elevation,
- iii) Plan . (20 marks)
8. Fig 8 shows two views of a wooden block and its perspective layout. Copy the given layout and draw the block in one-point perspective. (20 marks)