



# **MACHAKOS UNIVERSITY**

**University Examinations for 2019/2020 Academic Year**

**SCHOOL OF ENGINEERING AND TECHNOLOGY**

**DEPARTMENT OF BUILDING AND CIVIL ENGINEERING**

**FIRST YEAR THIRD SEMESTER EXAMINATION FOR**

**DIPLOMA IN BUILDING TECHNOLOGY**

**DIPLOMA IN CIVIL ENGINEERING**

**2705/2707/105: BUILDING CONSTRUCTION 1**

**DATE: 14/12/2020**

**TIME: 8.30-11.30 AM**

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## **INSTRUCTIONS TO CANDIDATES**

**Answer ALL questions**

1.
  - a) Outline three methods of soil investigations (6 marks)
  - b) Illustrate three methods of obtaining a level building ground from a sloppy site (4 marks)
  - c)
    - i) Figure 1 shows the sketch plan of a building, illustrate the method of setting out the building for excavations and walls (10 marks)
2.
  - a) With the aid of a sketch explain the perimeter trench method of dewatering (6 marks)
  - b) State and label the following typical foundation drawings indicating the drawing code requirements;
    - i) strip foundation
    - ii) deep strip foundation
    - iii) stepped foundation
    - iv) pad foundation (8 marks)
  - b)
    - i) Sketch and label a vertical section of raft foundation through a cavity wall up to the ground level (6 marks)
3.
  - a) Outline four functional requirements of a damp course (4 marks)
  - b) List two advantages and two disadvantages of block wall as over brick walls (2 marks)

- c) A line diagram of a typical window is show below .sketch and label the horizontal section A-A (4 marks)
- d) State the building code requirements for the following parts of fire place marked a,b,c,d,e, and **figure 3** (3 marks)
- e) i) Figure four shows the sketch plan of drying room. Sketch and label section B-B if floor is a suspended timber ground floor (4 marks)
- ii) Outline three advantages of solid ground floors over suspended timber (3 marks)
4. a) i) list four suitable materials for damp proof membrane (2 marks)
- ii) Outline three reasons why a cavity wall may be preferred to a solid wall (3 marks)
- iii) Sketch the following types of joint finish in brick work
- i) flush joint
- ii) recessed joint
- iii) weather joint
- iv) keyed joint
- v) weather pointing joint (5 marks)
- b) With the aid of a diagram describe the construction of a solid ground floor (10 marks)
5. a) Illustrate the diagram of a parapet wall (3 marks)
- b) i) Give three functional requirements of a wall (3 marks)
- ii) State six objectives of site investigations (6 marks)
- c) i) Differentiate the following terms starting the mix in each case
- ii) Plastering from rendering (4 marks)
- iii) Pointing and jointing (4 marks)