



TECHNICAL UNIVERSITY OF MOMBASA

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SCHOOL OF ENGINEERING AND TECHNOLOGY  
DEPARTMENT OF BUILDING & CIVIL ENGINEERING  
UNIVERSITY EXAMINATION FOR:

BACHELOR OF TECHNOLOGY IN CIVIL ENGINEERING

**ECV 4516: CONSTRUCTION TECHNOLOGY**

END OF SEMESTER EXAMINATION

**SERIES: JANUARY 2025**

**TIME: 2 HOURS**

**Instructions to Candidates**

You should have the following for this examination

*-Answer Booklet, examination pass and student ID*

This paper consists of **five** questions.

Attempt question ONE (Compulsory) and any other TWO questions.

**Do not write on the question paper.**

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**QUESTION ONE (COMPULSORY) 20 Marks**

- a) Outline the following factors considered in foundation design;
  - i) Types of subsoil,
  - ii) Dead and superimposed loads. (12marks)
- b) Describe with the aid of sketches the construction of the following types of foundations, stating where each type is ideally applied;
  - i) Wide strip foundation,
  - ii) Deep strip foundation,
  - iii) Pad foundation
  - iv) Bored pile and driven pile foundations. (18marks)

**Question TWO, (20marks)**

- a) Outline the functional requirements of walls, (6marks)
- b) State the significance of D.P.C in wall construction, and list four materials applied in D.P.C. work (6marks)
- c) State the significance of bonding in brickwork and with the aid of suitable sketches outline the following types of bonds;

- i) English bond,
- ii) **Stretcher bond. (8marks)**

**Question THREE, (20marks)**

- a) With the aid of suitable sketches, state the building code requirements as pertains the following;
  - i) Risers and treads,
  - ii) Clearance,
  - iii) Balustrading,
  - iv) Width of the stairs. (8marks)
- c) For a building with a storey height of 3.2m inclusive of the floor thickness, Draw the plan and section of a concrete dogleg stair, showing all construction details (12marks)

**Question FOUR, (20marks)**

- a) Outline with the aid of sketches, the construction of suspended insitu concrete floor ( 8marks)
- b) Describe with the aid of suitable sketches the construction of the following types of floors;
  - i) Flat slab/ mushroom floor construction,
  - ii) Hollow clay pot concrete floor slab. (12marks)

**Question FIVE, (20marks)**

Show a typical layout for the supply and distribution of hot water, using the direct hot water system,, and indicate the necessary control valves.