



TECHNICAL UNIVERSITY OF MOMBASA

SCHOOL OF ENGINEERING AND TECHNOLOGY

Department of BUILDING & Civil engineering

UNIVERSITY EXAMINATION FOR:

BACHELOR OF TECHNOLOGY IN CIVIL ENGINEERING

ECV 4215 BUILDING TECHNOLOGY 1

END OF SEMESTER EXAMINATION

SERIES: JANUARY 2025

TIME: 2 HOURS

PAPER A

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.

QUESTION ONE (COMPULSORY) 20 Marks

- a) Explain the operation of transferring measurement from the plan of a building to foundation trench in wall construction (8 marks)
- b) Outline the roles of the following professionals in building sites
 - i) Clerk of works
 - ii) Quantity Surveyor
 - iii) Structural Engineer (6 marks)
- c) Outline the importance of Occupational Safety Health Act(OSHA) in building technology (6 marks)

ANSWER ANY TWO QUESTIONS FROM THIS SECTION

QUESTION TWO (20 Marks)

- a) Explain the procedure of constructing a slab of solid ground floor (10 marks)
- b) Outline the following
 - i) Mass concrete underpinning
 - ii) Four reasons of underpinning (10 marks)

QUESTION THREE (20 Marks)

- a) Explain the procedure of constructing a block wall using strip foundation (8 marks)
- b) Explain the following types of cofferdam
 - i) Rock fill dam
 - ii) Earthen dams (8 marks)
- c) Explain the demerits of unbounded block wall (4 marks)

QUESTION FOUR (20 Marks)

- a) Prepare a bar bending schedule (BBS) for a column footing. Size of the footing 1.5msquare. Thickness of footing 0.45m. Spacing of bars, 0.15m centre to centre. Diameter of reinforcement bars 12mm both main and distribution bars. Concrete cover is 0.15mm (10 marks)
- b) Explain the construction of basement (10 marks)

QUESTION FIVE (20 Marks)

- a) Differentiate the following
 - i) Timbering from shoring
 - ii) Scaffolding from formwork
 - iii) Cofferdam from gabions (6 marks)
- b) Explain the procedure of setting out rectangular building using 3 : 4 : 5 method (6 marks)
- c) Explain pile foundation as used in building technology (8 marks)

