



TECHNICAL UNIVERSITY OF MOMBASA

SCHOOL OF ENGINEERING AND TECHNOLOGY
Department of BUILDING & Civil engineering
UNIVERSITY EXAMINATION FOR:

BACHELOR OF TECHNOLOGY IN CIVIL ENGINEERING

TCV 4211: CONSTRUCTION TECHNOLOGY I

SPECIAL/SUPPLEMENTARY EXAMINATION

SERIES: JULY 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.

QUESTION ONE (COMPULSORY) 20 Marks

- a) Define dewatering in construction and explain its significance. (4 marks)
- b) Explain the strip foundation construction process, including the purpose of concrete blinding. (10 marks)
- c) Describe the difference between end-bearing piles and friction piles, providing examples of when each is appropriate. (6 marks)

ANSWER ANY TWO QUESTIONS FROM THIS SECTION

QUESTION TWO (20 marks)

- a) Define site layout in the context of construction and discuss its primary objectives. (5 marks)
- b) Define and sketch a mobile scaffold and list two precautions for safely moving them on-site. (10 marks)
- c) Define building construction, and describe two activities involved in the process. (5 marks)



QUESTION THREE (20 Marks)

- a) Describe the needle and pile method of underpinning and discuss its suitability for weak soil areas. (8 marks)
- b) List and describe three methods of temporary groundwater exclusion used in dewatering. (12 marks)

QUESTION FOUR (20 Marks)

- a) List FIVE demolition methods, and for each, identify one scenario where it would be the most effective choice. (10 marks)
- b) Explain the island method of basement excavation, including the role of struts in this method. (5 marks)
- c) Discuss the impact of weather on site layout planning and provide two strategies to mitigate weather-related challenges. (5 marks)

QUESTION FIVE (20 Marks)

- a) Draw a well labelled sketch of a buttress retaining wall and explain the difference between active and passive earth pressures on retaining walls. (7 marks)
- b) Discuss three types of building classifications based on occupancy, providing examples for each. (9 marks)
- c) Identify four precautions to consider when constructing on filled ground. (4 marks)

