



TECHNICAL UNIVERSITY OF MOMBASA

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

DIPLOMA IN CIVIL ENGINEERING
DCE 2107: CONCRETE TECHNOLOGY 1

SPECIAL/SUPPLEMENTARY EXAMINATION
SERIES: MARCH 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 any Three questions.

Do not write on the question paper.

QUESTION ONE (20 Marks)

- a) Explain SIX properties of wet concrete (6 marks)
- b) Briefly explain THREE control tests done on Portland cement (6 marks)
- c) Explain with aid of sketches, the following concrete mixers
 - i. Tilting drum
 - ii. Pan mixer(8 marks)

QUESTION TWO (20 Marks)

- a) Briefly explain the function of water in the production of concrete (4 marks)
- b) Discuss SIX properties of coarse aggregates (6 marks)
- c) Briefly explain the slump test done on fresh concrete (10 marks)

QUESTION THREE (20 Marks)

- a) Explain THREE methods used to transport concrete vertically (6 marks)
- b) Explain SIX methods used to cure concrete (6 marks)
- c) Describe with aid of a neat sketch, the construction of a typical lintel formwork (8 marks)

QUESTION FOUR (20 Marks)

- a) Explain SIX advantages of a bar bending schedule (6 marks)
- b) Outline the production process of mass concrete of mix ratio 1:3:6 (6 marks)
- d) Explain the following concreting operations
 - i. Batching
 - ii. Placement (8 marks)

QUESTION FIVE (20 Marks)

- a) Outline THREE precautions taken when transporting concrete (3 marks)
- b) Briefly explain the following types of concrete mix
 - i. Designed mix
 - ii. Prescribed mix (6 marks)
- c) Explain the following terms as regards to reinforced concrete
 - i. Concrete cover
 - ii. Bond between steel and concrete (6 marks)
- d) Explain the maintenance carried out on concrete mixers (5 marks)

