



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

END OF SEMESTER EXAMINATION
SERIES: AUGUST 2024
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 the following concreting operations
 - i. Batching
 - ii. Compaction (6 marks)
- b) Discuss SIX properties of fresh concrete (6 marks)
- c) Discuss the compaction factor test for workability of concrete (8 marks)

QUESTION TWO (20 Marks)

- a) Explain the following means of transporting concrete
 - i. Monorail
 - ii. Tremies (6 marks)
- b) Discuss THREE methods of curing concrete in hot weather (6 marks)
- c) Outline the construction procedure for a typical lintel formwork (8 marks)

QUESTION THREE (20 Marks)

- a) Outline FIVE requirements of a good formwork (5 marks)
- b) Explain SIX properties of aggregates (6 marks)
- c) Discuss THREE types of drum concrete mixers (9 marks)

QUESTION FOUR (20 Marks)

- a) Outline the production process of plain concrete (6 marks)
- b) Outline SIX advantages of a Bar Bending Schedule (6 marks)
- c) Discuss FOUR types of cement concrete admixtures (8 marks)

QUESTION FIVE (20 Marks)

- a) Discuss THREE control tests done on Portland cement (6 marks)
- b) Briefly explain the function of reinforcement in reinforced concrete (6 marks)
- c) Briefly explain the following types of concrete mix
 - i. Designed mix
 - ii. Prescribed mix (8 marks)