



TECHNICAL UNIVERSITY OF MOMBASA

SCHOOL OF ENGINEERING AND TECHNOLOGY

Department of BUILDING & Civil engineering

UNIVERSITY EXAMINATION FOR:

BACHELOR OF SCIENCE IN CIVIL ENGINEERING

ECV 4513 : WATER RESOURCES ENGINEERING 11

SPECIAL/SUPPLEMENTARY EXAMINATION

SERIES: MARCH 2025

TIME: 2 HOURS

PAPER B

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) 30 Marks

- a) Explain four types of drought (12 marks)
- b) Explain the importance of Water Law in water resources management (10 marks)
- c) Outline the advantages and disadvantages of ground water as a reservoir (8 marks)

ANSWER ANY TWO QUESTIONS FROM THIS SECTION

QUESTION TWO (20 Marks)

- a) Name and explain the water harvesting methods (12 marks)
- b) Explain four severe drought (8 marks)

QUESTION THREE (20 Marks)

- a) Write on
 - i) Water self-sufficiency versus water as a social good
 - ii) Integration of land and water management
 - iii) Integration of surface water and ground water (12 marks)

- b) Explain the roles of government in drought management (8 marks)

QUESTION FOUR (20 Marks)

- a) Explain the concerns of integrated water resources management (12 marks)
b) Outline the challenges faced by integrated water resources managers (8 marks)

QUESTION FIVE (20 Marks)

- a) Five the drought mitigation tools (10 marks)
b) Sketch the layered disaster risk management including finance from different sources (10 marks)