



ZIMBABWE

**MINISTRY OF HIGHER AND TERTIARY EDUCATION,
INNOVATION, SCIENCE AND TECHNOLOGY
DEVELOPMENT**

**HIGHER EDUCATION EXAMINATIONS COUNCIL
(HEXCO)**

NATIONAL CERTIFICATE

IN

IRRIGATION AND WATER RESOURCES ENGINEERING

MODULE: Water Resources Management

PAPER NO: 384/22/M04

DURATION: 3 Hours

NOVEMBER/ DECEMBER 2025 EXAMINATION

REQUIREMENTS

INSTRUCTIONS TO CANDIDATE

1. Answer any five (5) questions.
2. Start each question on a new page.
3. Do not write on question paper.
4. Do not tear off any papers from the Answer script.
5. Each question carries equal marks.

This paper consists of 3 printed pages.

QUESTION 1

- a) Define the term “Watershed”. (2 marks)
- b) Comment on the characteristics determining watershed delineation. (18 marks)

QUESTION 2

Discuss the various factors affecting a storm hydrograph (both physical and human induced). (20 marks)

QUESTION 3

Riverbank cultivation refers to the agricultural practice of growing crops along the banks of rivers. Explain the advantages of riverbank cultivation. Highlight challenges and environmental impacts of this activity. (20 marks)

QUESTION 4

- a) Explain the term “River channelling”. (2 marks)
- b) Describe the primary methods of river channelling and their purpose. (18 marks)
- Comment on the impacts of these methods.

QUESTION 5

With the aid of a well labelled diagram, explain the following components of:

- | | | |
|------|----------------|-----------|
| i) | Rising limb | (2 marks) |
| ii) | Lag time | (2 marks) |
| iii) | Peak discharge | (2 marks) |
| iv) | Falling limb | (2 marks) |
| v) | Base flow | (2 marks) |
| vi) | Time to peak | (2 marks) |
| vii) | Point of rise | (2 marks) |

(6 marks for diagram)

• QUESTION 6

Discuss the various natural and human induced factors affecting water levels in a water body. (20 marks)

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