



NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

FACULTY OF THE BUILT ENVIRONMENT

DEPARTMENT OF ARCHITECTURE

BUILDING CONSTRUCTION I

BAR 2102

Examination Paper

December 2024

This examination paper consists of 3 pages

Time Allowed: 4 hours
Total Marks: 100
Examiner's Name: Mr. B. Masuku

INSTRUCTIONS

- 1. Answer Question 1 and any other two (2) questions.*
- 2. Special Requirements: A1 Sheets, T-squares, Drawing Boards, Masking Tape.*
- 3. Use an appropriate scale for drawings. Marks will be awarded to neatly presented work.*
- 4. Illustrate answers with sketches. You can either draw in pencil or technical pen.*

MARK ALLOCATION

QUESTION	MARKS
1.	50
2.	25
3.	25
4.	25
TOTAL	100

QUESTION 1

- a. List any five functions of a roofing system. (5)
- b. Describe any 5 forms of steel trussing you have studied. (5)
- c. Using appropriate scales, draw and explain crucial details of the following types of roofs:
- i. Butterfly roof , (5)
 - ii. Tensile roof , (5)
 - iii. Hipped roof , (5)
 - iv. Flat concrete roof, (5)
 - v. Parapet monopitch roof, (5)
 - vi. Skylight. (5)
- d. With the aid of scaled drawings, design two types of green roofing systems explaining using illustrations how they work. (10)

QUESTION 2

- a. Give any four factors to be considered during the site acquisition process and elaborate. (8)
- b. Name and explain any five architectural drawings used on site for the execution of work. (5)
- c. Mention any four other professionals involved in the building industry besides the architect and clearly explain their roles. (4)
- d. During preliminary site works the site has to be secured and this can be done by erecting a fence around the site or hoarding units on the street sides of the site
- i. Draw a vertical section of a hoarding unit and give the necessary dimensions and sizes. (5)
 - ii. Give three reasons why it is important to erect hoarding along the street side of a site. (3)

QUESTION 3

- a. Name any four temporary facilities to be put up at a site for the execution of works and state their purpose. (4)
- b. Write brief notes on the storage of the following on site.
 - i. Timber,
 - ii. Bricks,
 - iii. Tiles,
 - iv. Sanitary fittings. (8)
- c. Explain and illustrate with aid of a diagram the setting out of a square building using the builder's square and the profile boards. (10)
 - i. Draw a diagram to show a typical corner profile board. (3)

QUESTION 4

- a. Define a foundation and state its purpose. (4)
 - i. What are the functional requirements of a foundation? (3)
 - ii. Mention any five factors to be considered to determine the foundation type to be used for any particular building. (5)
- b. With aid of a diagram illustrate a reinforced concrete strip foundation. (5)
- c. Which type of a foundation would you classify under deep foundations? Illustrate and state under which circumstances they could be used. (8)