



**NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY**  
**FACULTY OF THE BUILT ENVIRONMENT**  
**DEPARTMENT OF ARCHITECTURE**  
**DEPARTMENT OF LANDSCAPE ARCHITECTURE AND URBAN DESIGN**  
**BUILDING CONSTRUCTION II**  
**AAR 2202**

**Examination Paper**

**May 2017**

This examination paper consists of 3 pages

**Time Allowed:**            **4 hours (B.A.S.)**            **3 hours (B.P.E.M.)**

**Total Marks:**            **100**

**Special Requirements:** **A1 Sheets, T-squares, Drawing Boards, Masking Tape (B.A.S. Students).**

**Examiner's Name:**        **Miss M. V. Mudombo**

**INSTRUCTIONS**

1. **BAS** Answer Section A and any other two (2) questions in Section B. Use an appropriate scale for drawings. **BPEM** Answer any four (4) questions in Section B.
2. Illustrate answers with sketches. You can either draw in pencil or technical pen. Marks will be awarded to neatly presented work.

**MARK ALLOCATION**

<b>QUESTION</b>	<b>MARKS</b>
1.	<b>50</b>
2.	<b>25</b>
3.	<b>25</b>
4.	<b>25</b>
5.	<b>25</b>
6.	<b>25</b>
<b>TOTAL</b>	<b>100</b>

## SECTION A

### QUESTION 1

- a. Describe using sketches the various types of concrete stair supports that you have studied. [10]
- b. A client has requested you to design a dog-leg staircase to be located in the lobby of their office building. It shall be an open riser concrete and steel stair connecting the ground floor with first floor. Assuming floor to floor height is 3m, design and provide the following detailed drawings of the stair in appropriate scales:
  - i. Floor Plan [10]
  - ii. Section [20]
  - iii. Elevation [10]

## SECTION B

### QUESTION 2

- a. Identify any 5 floor finishes that you have studied [5]
- b. Using sketches, explain the application of the finishes identified in a. [10]
- c. Discuss the performance of the finishes identified in a. [10]

### QUESTION 3

- a. Define the 3 types of cladding systems. [6]
- b. Draw typical details of the following:
  - i. Glass curtain walling system [5]
  - ii. Timber cladding [5]
  - iii. Concrete cladding [5]
- c. Explain with the use of diagrams the rain screen principle and detail a typical rain screen cladding system. [9]

### QUESTION 4

- a. Sketch out in floor plan any 5 door operating mechanisms. [5]
- b. Draw a typical battened, ledged and braced door showing the various components that make up this door. [10]
- c. Using detailed sketches compare the application and performance of a timber door frame and a steel door frame [10]

### QUESTION 5

- a. Define a window and list 3 of its principal functions. [5]
- b. Describe with detailed sketches how an aluminum-framed window prevents water penetration into a building interior. [10]
- c. Draw a typical straight flight timber stair detailing the regulations pertaining to various stair components. [10]

### QUESTION 6

- a. What factors influence the design and location of a typical domestic fireplace? [5]
- b. With the aid of detailed typical vertical cross sections, compare the application and performance of the masonry and prefabricated fireplaces. [20]