



NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

FACULTY OF INDUSTRIAL TECHNOLOGY

DEPARTMENT OF CIVIL AND WATER ENGINEERING

COMPUTER APPLICATION IN CIVIL ENGINEERING

TCW 2104

Main Examinations paper

December 2015

This examination paper consists of 4 pages

Time Allowed: 3 hours

Total Marks: 100

Examiner's Name: Mrs S. Nhandara

INSTRUCTIONS

1. The examination consists of one (1) question which carries 100 marks
2. Use your I.D No. only
3. No names will be accepted

MARK ALLOCATION

QUESTION	MARKS
1	100
TOTAL	100

QUESTION 1

The drawing shown below is for the ground floor plan of a double storey building. Produce the following drawings:

1. Ground Floor Plan
 2. Foundation Plan
 3. Section Y-Y
 4. Section Z - Z
-

Notes:

All dimensions are in (mm)

Foundations

a. Pile Foundations

- i. All external pile cap dimensions: L- 2000
W- 1000
D- 600

File caps supported by 2No. piles dia.- 300, depth-15 000

- ii. All internal pile cap dimensions: L – 3400
W – 3000
D- 900

Piles supported by 4 No. piles dia. – 450, depth -15 000

b. Columns

Circular columns – 650mm dia.

Rectangular columns – 300x450

c. Beams

External beams – 300x1020

Internal beams – 300x600

d. Apron

Width – 1500

Slope – 1:200

T₀ – 200

e. Ground floor slab

Slab is suspended

Slab thickness – 200

f. Staircase

Tread width – 500

Landing width – 2200

Rise – 175

Waist - 180

g. Use your own scale, dimension, line types and color.

h. Save your work on the memory stick provided and submit it to the invigilator.