

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
FACULTY OF THE BUILT ENVIRONMENT
BACHELOR OF QUANTITY SURVEYING (HONOURS) DEGREE
PART II SECOND SEMESTER EXAMINATIONS – MAY 2014
BUILDING CONSTRUCTION III – AQS 2201

TIME: 3 hours

Total marks: 100

Instruction to candidates

Answer question 1 and any other 3

Question 1

- a) Draw a section of the junction of a concrete column and a concrete main beam in a cast in situ framed building to indicate
- i) Location and shape of all reinforcing
 - ii) Kicker
 - iii) Starter bars
 - iv) Joining of column reinforcing (14 marks)
- b) Describe three methods of compacting concrete cast in situ. (6 marks)
- c) Describe the purposes of retaining walls (5 marks)

Question 2

- a) Draw a vertical cross-section through a concrete retaining wall and indicate:
- i) Toe
 - ii) Heel
 - iii) Weep hole
 - iv) Angle of response of soil (10 marks)
- b) Detail a drained cavity waterproofing system suitable for the basement wall. (15 marks)

Question 3

- a) With the aid of sketches, illustrate the two methods of pile underpinning (12 marks)
- b) Discuss the functional requirements for scaffolding (5 marks)
- c) With the aid of sketches, differentiate putlog and independent scaffoldings (8 marks)

Question 4

- a) With the aid of sketches, show how column formwork is positioned and secured when constructing a square concrete column. (15 marks)
- b) Identify and explain any two methods of demolition (10 marks)

Question 5

- a) Discuss the factors that should be taken into consideration when carrying out a demolition project in the city centre. (15 marks)
- b) Draw a cross section through the timber temporary support to be provided for a trench excavation measuring 2.00m deep by 0.90 m wide in firm sub-soil. Name and dimension all members. (10 marks)

END OF EXAMINATION