

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
FACULTY OF BUILT ENVIRONMENT
DEPARTMENT OF QUANTITY SURVEYING
BACHELOR OF QUANTITY SURVEYING (HONOURS) DEGREE
PART I EXAMINATIONS – DECEMBER 2013
BUILDING CONSTRUCTION I - AQS 1110

Time: 3 hours

Total marks: 100

Instruction to candidates

Answer question 1 and any other 3

Question 1

- a) Explain how traditional strip foundation of a detached dwelling would be designed, with reference to the depth below ground, the thickness, and the width of the foundation. (15 marks)
- b) Discuss the circumstances under which a strip foundation system for a two storey detached dwelling would not be appropriate. (10 marks)

Question 2

Site investigations form the basis for safe and economic design, and construction of a building. Explain the main activities which would normally occur during a site investigation for a low-rise domestic dwelling. (25 marks)

Question 3

- a) Explain the functional requirements of an external window. (8 marks)
- b) Name four types of materials used in the construction of external window frames, and discuss their advantages and disadvantages. (12 marks)
- c) With the aid of a sketch, identify the following component parts associated with windows:
- i) Casement.
 - ii) Jamb.
 - iii) Head.
 - iv) Mullion.
 - v) Transom.
- (5 marks)

Question 4

- a) Discuss the functional requirements of ground floors in residential construction. (10 marks)
- b) A suspended timber ground floor should be constructed paying special attention to the construction materials and method of construction. Using a well annotated sketch show a

cross section through a suspended timber ground floor with a concrete strip foundation up to and including floor finishes. (8 marks)

- a) Identify the precautions that have to be observed in the construction of a suspended timber ground floor.

(7 marks)

Question 5

- a) Explain why lateral restraint is provided to trussed pitched roofs.

(10 marks)

- b) With the aid of sketches describe how lateral restraint is achieved in the construction of a trussed pitched roof at the following locations:

i. At the gable wall

ii. At eaves (i.e. rafter- tie beam junction with wall plate)

(15 marks)

END OF EXAMINATION