

**SIR ARTHUR LEWIS COMMUNITY COLLEGE****Division of Technical Education and Management Studies****End of Course Exam**

Examination Session : **May 2013**

Tutor(s) : **Philip J Larodé, Mae St. Clair**

Programme Title : **Architectural Technology I  
Construction Engineering I  
Quantity Surveying I**

Programme Codes : **3BD-ART-AD  
3BD-CON-AD  
3BD-QUS-AD**

**Course Title** : **Building Technology II**

Course Code : **BLT106**

Exam Date : **13<sup>th</sup> May**

Commencement Time : **9:00am**

Duration : **3 hours**

Invigilators : **Stephen Auguste  
Nathan Hyacinth  
Pauline Erlinger-Ford**

Room : **CHE-1R-02**

**YOU SHOULD HAVE THE FOLLOWING FOR THIS EXAMINATION****Pen, Pencil, Eraser****INSTRUCTIONS**

- 1) Answer any four (4) questions.
- 2) Start each new question on a clean page.
- 3) Borrowing and lending of equipment is not allowed.
- 4) Do not detach sheets from the answer booklet.
- 5) Write only your ID number on your answer sheet.

### QUESTION # 1

- a) Sketch and annotate the vertical section through a timber ground floor at its junction with a 250mm cavity foundation wall; in your sketch include a mass concrete strip footing. (10 marks)
- b) Explain the function of the following in concrete floor construction:  
i) Hardcore fill, ii) Mesh reinforcement (top), iii) Damp proof membrane,  
iv) Sand/Ash blinding, v) Floor slab. (5 marks)
- c) Using annotated sketches to illustrate (including reinforcements) explain the terms:  
i) One-way suspended reinforced concrete floor slab.  
ii) Two-way suspended reinforced concrete floor slab. (10 marks)

### QUESTION # 2

- a) Describe the following types of wall:  
i) Load bearing wall, ii) Non-load bearing wall, iii) Separating walls,  
iv) Division walls. (8 marks)
- b) Using an annotated sketch to illustrate, explain the function of an attached pier. (6 marks)
- c) Sketch a vertical section through a brick and block cavity wall from foundation to eaves; the wall has a window. (11 marks)

### QUESTION # 3

- a) Describe the following stair requirements:  
i) Strength and Stability, ii) Fire Resistance. (6 marks)
- b) Sketch and annotate the detail through a 'Closed Riser' timber stair to show wedges and blocks. Also, explain the purpose of the wedges and blocks. (9 marks)
- c) Sketch and annotate a reinforced concrete 'Cranked Slab' stair with eight (8) treads. Show all reinforcements. (10 marks)

### QUESTION # 4

- a) Sketch a single line plan view of an L shaped roof with hip and gable ends and identify the following:  
i) Hipped end, ii) Gable end, iii) Ridge beam, iv) Hip rafter, v) Valley rafter,  
vi) Common rafter, vii) Jack rafter, viii) Fascia board, ix) Barge board. (10 marks)
- b) Sketch and annotate the eaves detail for a timber pitched roof of local construction with a roof covering of corrugated galvanised iron sheets. The ceiling is exposed rafters and the eaves is closed. (10 marks)
- c) Using an annotated sketch, show the effects of lateral wind forces on a pitched roof with a slope less than 30 degrees and projecting eaves. (5 marks)

**QUESTION # 5**

- a) Sketch and annotate the following:  
i) Framed, ledged and braced door, ii) Three panelled door. (6 marks)
- b) Draw the external elevation of a window and identify the following:  
i) Side hung casement, ii) Fixed light, iii) Vent light casement,  
iv) Head, sill and mullions. (10 marks)
- c) Using annotated sketches to illustrate, describe the following:  
i) Vertical sliding sash windows, ii) 60° Bay windows, iii) Internal dormer windows. (9 marks)

**QUESTION # 6**

- a) Using an annotated sketch to illustrate, describe:  
i) Claddings, ii) Infill Panels. (8 marks)
- b) Using an annotated sketch, show how you would attach clay tiles to a 10" reinforced concrete wall. (8 marks)
- c) Curtain walling can be obtained with main support members extending in two different directions; use an annotated sketch to show the two types. Also, is curtain walling a facing, cladding or infill panel? (9 marks)

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**END OF PAPER**