

**SIR ARTHUR LEWIS COMMUNITY COLLEGE**

Division of Technical Education and Management Studies

**End of Course Exam**

Examination Session : April/May 2009  
Tutor(s) : Rosaline Isaac, Philip J Larodé.  
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 : 8<sup>th</sup> May  
Commencement Time : 1:00 pm  
Duration : 3 hours  
Invigilators : D. Combie & S. Yarde  
Room : TRT L1/L2

#B21

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 will not be permitted.
- 4) Do not detach sheets from the answer book.
- 5) Write only your ID number on your answer sheet.



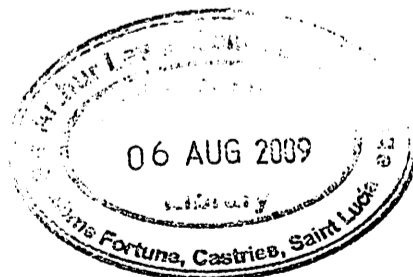
**QUESTION # 5**

- a) What are roof gutters? What purpose do they serve and what determines their size/capacity?  
(6 marks)
- b) Sketch and annotate a vertical section through a timber box gutter constructed alongside a one brick parapet wall.  
(9 marks)
- c) A reinforced concrete flat (square plan shape) roof with an elevated verge is to be drained by four outlets:
- i) Sketch and annotate the plan showing how you would drain the roof.
  - ii) Sketch, annotate and identify the outlet that is normally used for drainage on this type of roof.  
(10 marks)

**QUESTION # 6**

- a) Sketch the front view of a timber door and identify the following:  
i) Stile, ii) Bottom rail, iii) Glazing bars.  
(7 marks)
- b) Sketch and annotate the following:  
i) Framed, ledged and braced door, ii) Three panelled door, iii) Door lining,  
iv) Recessed door jamb.  
(8 marks)
- c) Using annotated sketches to illustrate describe the following:  
i) Casement window, ii) Sash window, iii) Pivot window, iv) Bay window,  
v) Dormer window.  
(10 marks)

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**END OF PAPER**



### 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) Sketch and annotate two methods, or forms of construction used to prevent water/moisture penetrating masonry or concrete walls. (4 marks)
- b) Sketch and annotate a vertical section through an insulated timber framed wall. (11 marks)
- c) Describe and explain the function/use of the following in wall construction:  
i) Concrete Block, ii) U-Value, iii) Pointing, iv) Lintel. (8 marks)

### QUESTION # 3

- a) Explain the following stair terms:  
i) Step, ii) Baluster, iii) Staircase, iv) Stairwell, v) Pitch. (5 marks)
- b) Sketch and annotate the following:  
i) Doglegged stair with half spaced landing, ii) Closed riser timber stair. (8 marks)
- c) A reinforced concrete string and trimmer stair consists of two landings separated by eight treads; the flight extends between two 150mm concrete block walls. Sketch a vertical longitudinal section through the stair and identify all elements/components and reinforcements. (12 marks)

### QUESTION # 4

- a) Sketch a single line plan view of an L shaped roof with hip and gable ends and identify the following members:  
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 and ridge details for a closed couple roof covered with plain clay tiles. The roof is supported by an insulated cavity wall and the projecting eaves soffit is closed. (11 marks)
- c) Using single line representation sketch and annotate the following:  
i) Fan truss, ii) Queen post truss (4 marks)

