DTEMS PAST PAPERS
TECHNICAL

SIR ARTHUR LEWIS COMMUNITY COLLEGE

Division of Technical Education and Management Studies

End of Course Exam

Examination Session	: **December 2007**
Tutor(s)	: **Rosaline Isaac, Philip J Larodé & James Joseph**
Programme Title	: **Architectural Technology** **Construction Engineering** **Quantity Surveying**
Programme Codes	: **3BD-ART-AD** **3BD-COE-AD** **3BD-QUS-AD**
Course Title	: **Building Technology I**
Course Code	: **BLT105**
Exam Date	: **6th December**
Commencement Time	: **9:00 am**
Duration	: **3 hours.**
Invigilators	: **T Monrose, D Combie, S. Yarde & K. Depradine.**
Room(s)	: **TRT-L1/L2 & TRT-R4**

#B9

YOU SHOULD HAVE THE FOLLOWING FOR THIS EXAMINATION

Pen, Pencil & Eraser

INSTRUCTIONS

1) **Write only your ID NUMBER (no name) on your answer booklet.**
2) **Answer any four (4) questions.**
3) **Start each new question on a clean page.**
4) **Do not detach sheets from the answer booklet.**
5) **Borrowing and lending of equipment is not permitted.**

QUESTION #1

a) Identify the outer elements of the building fabric and for each element describe two critical or usually important requirements; no requirement can be described more than once. *(8 marks)*

b) Identify four different building materials commonly used in modern construction and briefly describe their application in buildings. *(7 marks)*

c) Sketch and annotate the method of load transfer for:

i) A skeletal structure, **ii)** A solid structure.
Sketches must depict structures common to St. Lucia. *(10 marks)*

QUESTION # 2

a) Diagrammatically, show the traditional stages of the construction process. *(8 marks)*

b) Draw the organisational chart for a traditional client organisation. *(8 marks)*

c) Describe the following:

i) Tender Sum, **ii)** Priced Bills of Quantities, **iii)** Project Programme. *(9 marks)*

QUESTION # 3

a) Explain the following terms as applied in 'preliminary site work':
i) Boundary, **ii)** Set back, **iii)** Open space. *(9 marks)*

b) Identify and explain two factors that must be considered in the type of site security fence selected. *(6 marks)*

c) Sketch and annotate the vertical cross-section through a 'vertical free-standing hoarding'. *(10 marks)*

QUESTION # 4

a) You have been hired to set out the foundation for an 'L' shaped framed structure to be erected on a rectangular parcel of land. Sketch the setting out plan to show the following:

i) Road, **ii)** Boundary line, **iii)** Boundary pegs, **iv)** Column positions,
v) Profile boards, **vi)** Site datum, **vii)** Building line, **viii)** Diagonal checks.
(11 marks)

b) Identify and sketch two instruments that can be used to establish 90° angles during the setting out of a building. *(8 marks)*

c) Explain the purpose of: **i)** Diagonal checks, **ii)** Profile/Batter boards. *(6 marks)*

QUESTION # 5

a) State four reasons that make timbering to trenches and pits necessary. *(8 marks)*

b) Use a well annotated sketch to show how you would provide timbering to a shallow trench in firm soil. *(11 marks)*

c) Use a well annotated sketch to show two methods of providing safety barriers around trenches. *(6 marks)*

QUESTION # 6

a) Gravels and sands are coarse-grained soils whilst silts and clays are fine-grained soils. Compare the two categories in terms of:

i) Cohesion, **ii)** Compressibility, **iii)** Permeability. *(9 marks)*

b) Sketch and annotate a cross-section through a normal reinforced concrete strip foundation and a wide reinforced concrete strip foundation. Explain the positioning of main reinforcement. *(10 marks)*

c) Use annotated sketches to show how load is distributed by:

i) Friction piles **ii)** end bearing piles *(6 marks)*

END OF PAPER