SIR ARTHUR LEWIS COMMUNITY COLLEGE

EXAMINATION SESSION	:	APR 2013
TUTOR(S)	:	M.ST. CLAIR
PROGRAMME TITLE	:	CONSTRUCTION ENGINEERING
		QUANTITY SURVEYING
PROGRAMME CODE(S)	:	3BD-CON-AD
		3BD-QUS-AD
COURSE TITLE	:	CIVIL TECHNOLOGY
COURSE CODE	:	BLT 107
CLASS (ES)	:	CONSTRUCTION ENGINEERING
		QUANTITY SURVEYING
DATE	:	MAY 13TH, 2013
COMMENCEMENT TIME	:	1:00PM
DURATION	:	3Hrs
INVIGILATOR (S)	:	A. CARRAZANA
		F. JOSEPH
ROOM (S)	:	TRB-R4
INSTRUCTIONS	:	

Answer any four (4) questions of the six (6) questions.

Write only your ID number on each page of the answer sheet.

You should have the following: pen, pencil, eraser, and ruler.

1a. In not more than five (5) lines, explain the following types of compaction.

i. Vibro-compaction ii. Dynamic compaction iii. Surcharge loading

[9 marks]

b. Explain the process of mechanical stabilization and chemical stabilization giving examples, in ten (10) lines or less.

[10 marks]

c. Explain the term geo-synthetic stabilization listing the fabrics that are normally used in not more than five (5) lines.

[6 marks]

2. a. Use a fully annotated diagram to show the pressures and resistances that act on a retaining wall.

[10 marks]

b. With the aid of a well annotated diagram and in not more than five (5) lines explain the term "plastic failure", stating a possible remedy.

[10 marks]

c. How are diaphragm retaining walls constructed?

[5 marks]

3. a. List the steps required to lay water-bound macadam.

{8 marks]

b. What are the purposes of a base course when surfacing and what materials can be used for this course?

[11 marks]

c. What are the ways in which roads can be classified generally and locally?

[6 marks]

4. a. Produce a fully labeled sketch of a rural road section.

[10 marks]

b. Briefly describe the five (5) types of joints that can be used in rigid pavement construction.

[5 marks]

c.i. Given that rainfall in Mon Repos is 65 mm/h, the area to be drained has an area of 6000 m^2 and the surfacing made of asphalt, calculate the volume of water to be drained.

Surface permeability = 0.85

ii. Produce a fully annotated diagram of a street gully.

[10 marks]

5. a. With the aid of a well labeled diagram, explain the textural classification system for soils.

[10 marks]

b. Show a well labeled sketch of a section through a flexible road pavement.

[10 marks]

c. What defects can be found in a rigid pavement?

[5 marks]

6. a. Briefly describe the following types of wastewater.

i. Domestic ii. Industrial iii. Groundwater iv. Meteorological

[8 marks]

b. Draw and label fully the wastewater treatment chart.

[10 marks]

c. Explain in not more than ten (10) lines what a landfill is and how it works.

[7 marks]