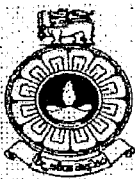


The Open University of Sri Lanka  
 Faculty of Engineering Technology  
 Bachelor of Science in Industrial Studies (Agriculture) Program



Final Examination- 2012/2013

AEX3232 Plant and Soil Science

Date : 31-07-2010  
 Time : 0930-1230  
 Duration : Three (03) hours

**SECTION 2: Answer any four (04) questions.**

- What do you mean by "Soil texture"?
  - Distinguish between soil texture and soil structure.
  - Briefly explain the importance of the knowledge of soil texture and soil structure in plant growth.
- Explain the factors influencing granular formation and development of soil.
- What is Cation Exchange Capacity?
  - What are the two (02) basic units responsible for the patterns of construction of the different clay minerals?
  - Kaolinite exhibits higher Cation Exchange Capacity than montmorillonite. Comment on the statement.
- Define the term, "Saline soil".
  - Discuss how you manage saline soils to obtain better plant growth.
- Write the short notes on the following,
  - Soil profile
  - Buffering capacity of soil
  - Deficiency symptoms of nitrogen(N), phosphorous(P) and Potassium(K)
- Define the term "fertilizer grade".
  - Give the classification of fertilizers using mode of action.
  - Calculate the quantities of fertilizers required to the following NPK fertilizer mixtures.

Crop	Grade	Source of Fertilizers		
		N	P	K
Chilli	13:11:6	AS	TSP	MOP
Leafy vegetables	14:12:14	Urea	TSP	MOP
Cocoa	14:11:14	Urea	RP	MOP

Relative % of nutrients:

Urea = 46 % N

TSP = 45 % P<sub>2</sub>O<sub>5</sub>

MOP = 60 % K<sub>2</sub>O

AS (Ammonium sulphate) = 18 N and 46 % P<sub>2</sub>O<sub>5</sub>

RP(Rock phosphate)= 28 % P<sub>2</sub>O<sub>5</sub>