

Knowledge Assessment

Qualification	National Vocational Certificate level 2 to 5, in Agriculture Sector (Soil, Water and Fertilizer Testing Lab Technician)
Competency Standard(s)	Perform Soil Saturation Percentage Test
Candidate Details	Name: _____ Registration/Roll Number: _____ Candidate Signature: _____
Assessment Outcome	<div style="display: flex; justify-content: space-around; align-items: center;"> COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> </div> Name of the Assessor: _____ Assessor's code: _____ Signature of the Assessor: _____

Candidate's response is not required to be identical, but similar concepts and/or keywords must be used. Oral questioning may be used to clarify candidate understanding of topic and its application.

Questions (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)		Satisfactory	Not Satisfactory
1.	Why is it important to have organic matter in soil?		
2.	What are the benefits of organic matter?		
3.	How we determine organic matter?		
	a) Walkley black method		

	b) Argentometric method c) Complexometric method d) Acid-base method		
4.	What is Walkey black method?		
5.	Which indicator used in Walkey black method?		
	a) Diphenylamine b) Methyl orange c) Diamine d) Potassium chromate		
6.	What is end point of Walkey black method?		
	a) Yellow b) Pink c) Green d) blue		
7.	Write down the formula for determination organic matter?		
8.	How do you calculate organic carbon from organic matter?		

Key

National Vocational Certificate level 1 to 5, in **Agriculture Sector (Soil, Water and Fertilizer Testing Lab Technician)**

Perform Soil Organic Matter Test

Questions (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)		Satisfactory	Not Satisfactory
1.	Why is it important to have organic matter in soil?		
	Organic matter includes any plant or animal material that returns to the soil and goes through the decomposition process. In addition to providing nutrients and habitat to organisms living in the soil, organic matter also binds soil particles into aggregates and improves the water holding capacity of soil.		
2.	What are the benefits of organic matter?		
	Of all the components of soil, organic matter is probably the most important and most misunderstood. Organic matter serves as a reservoir of nutrients and water in the soil, aids in reducing compaction and surface crusting, and increases water infiltration into the soil.		
3.	How we determine organic matter?		
	Walkley black method		
4.	What is Walkey black method?		
	This method quantifies the amount of oxidizable organic matter in which OM is oxidized with a known amount of chromate in the presence of sulfuric acid. The remaining chromate is determined spectrophotometrically at 600nm wavelength. The calculation of organic carbon is based on organic matter containing 58% carbon.		
5.	Which indicator used in Walkey black method?		
	Diphenylamine		
6.	What is end point of Walkey black method?		

	Green		
7.	Write down the formula for determination organic matter?		
	% O.M. = (mL for blank- mL for sample) x $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}(\text{N}) \times 0.69$ / Wt. of sample(g)		
8.	How do you calculate organic carbon from organic matter?		
	% Organic carbon = $\frac{\% \text{ organic matter}}{1.72}$		