

Knowledge Assessment

Qualification	National Vocational Certificate level 2 to 5, in Agriculture Sector (Soil, Water and Fertilizer Testing Lab Technician)
Competency Standard(s)	<ol style="list-style-type: none"> 1. Prepare Regents for analysis 2. Prepare solutions 3. Prepare culture media 4. Perform soil texture class identification through hydrometer 5. Perform soil saturation percentage test 6. Perform soil organic matter test 7. Perform humic acid contents in solid fertilizer by gravimetric method
Candidate Details	<p>Name: _____</p> <p>Registration/Roll Number: _____ Candidate Signature: _____</p>
Assessment Outcome	<p> COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> </p> <p>Name of the Assessor: _____ Assessor's code: _____</p> <p>Signature of the Assessor: _____</p>

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.	Define Buffering Capacity?		

2.	What is hydrometer?		
3.	Define Indicators?		
4.	Define Molar solutions?		
5.	What is the use of Textural Triangle?		
6.	When is the best time to take soil samples?		

Key

National Vocational Certificate level 2 to 5, in **Agriculture Sector (Soil, Water and Fertilizer Testing Lab Technician)**

1. Prepare Regents for analysis
2. Prepare solutions
3. Prepare culture media
4. Perform soil texture class identification through hydrometer
5. Perform soil saturation percentage test
6. Perform soil organic matter test
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Questions (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)		Satisfactory	Not Satisfactory
1.	Define Buffering Capacity?		
	Buffer capacity (β) is defined as the amount of a strong acid or a strong base that has to be added to 1 litre of a buffer to cause pH change of 1.0 pH unit: The buffer capacity depends on the amounts of substance of the weak acid and its conjugated base in the buffer.		
2.	What is hydrometer?		
	A hydrometer is an instrument used for measuring the relative density of liquids based on the concept of buoyancy. They are typically calibrated and graduated with one or more scales such as specific gravity.		
3.	Define Indicators?		
	Indicators are chemical compounds that tell us whether a substance is acidic or basic by changing its colour. When added to an acidic solution or a basic solution, indicators change their colour and this change in colour is different for the acids and bases.		
4.	Define Molar solutions?		
	Molar solution is a solution in which 1 mole of a compound is dissolved in a total volume of 1 litre. Gram molecular weight (GMW) expressed in molarity. The molecular weight of sodium chloride (NaCl) is 58.44, so one-gram molecular weight (= 1 mole) is 58.44g		
5.	What is the use of Textural Triangle?		
	The soil texture triangle is one of the tools that soil scientists use to visualize and understand the meaning of soil texture names. The textural triangle is a diagram which shows how each of these 12 textures is classified based on the percent of sand, silt, and clay in each.		
6.	When is the best time to take soil samples?		
	Soil samples can be taken any time throughout the year for checking pH, phosphorus and potassium status. Collect soil samples 1-2 months before planting. Early spring is a good time to take soil samples for summer crops, and summer is a good time to sample for fall and winter crops. This allows time for lime recommended to		

	react with the soil and change the pH before the crop is planted. To assess soil available nitrogen, sample as close to planting as possible.		
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