

Knowledge Assessment

Qualification	National Vocational Certificate level 2 to 5, in Agriculture Sector (Soil, water and fertilizer testing lab technician)
Competency Standard	Perform Boron (Water-Soluble) in Fertilizers through Spectrophotometric Method)
Purpose of Assessment	Formative Assessment
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.	Name of instruments to test water soluble boron in fertilizer		
2.	Name of reagents to test water soluble boron in fertilizer		
3.	Which boron fertilizer is water insoluble?		
4.	Is boron toxic to humans?		
5.	Why we use blank test in spectrophotometer?		

6.	What are the three main components of a spectrophotometer?		
7.	What wavelength of spectrophotometer use for Boron test?		
	a) 410 nm b) 415 nm c) 420 nm d) 880 nm		
8.	What coloring agent is used in Boron test		
9.	What color will develop in Boron test in Hot water soluble Azomethine H test?		
10.	What is the calculation formula for phosphorus test?		

Key

National Vocational Certificate level 2 to 5, in Agriculture Sector (Soil, Water and Fertilizer Testing Lab Technician)		
Perform Boron (Water-Soluble) in Fertilizers through Spectrophotometric Method)		
Questions (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)		
		Satisfactory
		Not Satisfactory
1.	Name of instruments to test water soluble boron in fertilizer	
	1. Weighing balance 2. Spectrophotometer 3. Hot plate 4. Beaker 5. Watch glass/ funnel 6. volumetric flask 7. filter paper 8. cuvettes	
2.	Name of reagents to test water soluble boron in fertilizer	
	Ethylenediamine tetraacetate solution Ammonium acetate solution Azomethine-H solution Boron standard solution (B_2O_3)	
3.	Which boron fertilizer is water insoluble?	
	boron nitrite are completely water insoluble	
4.	Is boron toxic to humans?	
	Boron exposure over short periods of time can affect the stomach, intestines, liver, kidney, and brain and can eventually lead to death	
5.	Why we use blank test in spectrophotometer?	
	Spectrophotometer needs to be calibrated against a blank solution that measurements after it can use the blank solution's absorbance a zero reference.	
6.	What are the three main components of a spectrophotometer?	
	1. A light source 2. Optics to deliver and collect the light 3. Detector	
7.	What wavelength of spectrophotometer use for Boron test?	

	e) 410 nm f) 415 nm g) 420 nm h) 880 nm		
8.	What coloring agent is used in Boron test		
	Azomethine H		
9.	What color will develop in Boron test in Hot water soluble Azomethine H test?		
	Yellow color		
10.	What is the calculation formula for phosphorus test?		
	$\text{Phosphorus in soil (ppm)} = \text{ppm p} \times \frac{x A}{wt} \times \frac{50}{v} \dots$		