

Self-Assessment Checklist

Candidate Name	
Registration No.	
Qualification	National Vocational Certificate level 4, in Agriculture Sector (Soil, water and fertilizer testing lab technician)
Competency Standards	<ul style="list-style-type: none"> • Handling of sophisticated level Equipment 1 • Perform Calcium & Magnesium test of water by Titrimetric Method • Perform Carbonates & Bicarbonates test by Titrimetric Method • Perform Chloride (Cl) test by Titrimetric Method • Perform Sodium (Na) test for water by Flame-Photometric Method • Perform Potassium (K) test by Flame-Photometric Method • Perform Boron (Water-Soluble) in Fertilizers through Spectrophotometre • Perform Soil Boron Test • Perform Soil Extractable Phosphorus Test • Perform Soil Extractable Potassium Test • Perform Total phosphorus in soil, liquid and mixed fertilizer by titrimetric method
Assessment Task	Perform following task <ul style="list-style-type: none"> • Configure and run sophisticated instruments such as Block Digestion Unit, Pipette Dispenser, Flame Photometer, Vacuum Filtration Device, and Water Distillation Unit. • Analyse water sample for Ca+Mg, CO₃, HCO₃, Cl, Na and K contents • Analyse soil sample for boron, phosphorus and potassium contents • Analyse fertilizer sample for Boron and Phosphorus contents

I can.....

Performance Criteria	Yes	No
1. Ensure cleanliness of equipment before and after use	<input type="checkbox"/>	<input type="checkbox"/>
2. Ensure availability of standard operating procedure for every equipment	<input type="checkbox"/>	<input type="checkbox"/>
3. Maintain 'Repair and Maintenance history sheet' for each specific equipment as per given standard	<input type="checkbox"/>	<input type="checkbox"/>
4. Ensure proper placing of equipment after use as per lab protocols	<input type="checkbox"/>	<input type="checkbox"/>

5. Follow safety guidelines as per equipment manual	<input type="checkbox"/>	<input type="checkbox"/>
6. Follow SOPs for operating specific equipment as given in manuals	<input type="checkbox"/>	<input type="checkbox"/>
7. Inspect equipment properly before and after use	<input type="checkbox"/>	<input type="checkbox"/>
8. Perform intermediate checks of equipment according to set instructions before use as per requirement	<input type="checkbox"/>	<input type="checkbox"/>
9. Monitor all errors and record data as instructed	<input type="checkbox"/>	<input type="checkbox"/>
10. Perform basic troubleshoot as prescribed	<input type="checkbox"/>	<input type="checkbox"/>
11. Calibrate instruments as per given procedures in manuals	<input type="checkbox"/>	<input type="checkbox"/>
12. Check sample label for required test	<input type="checkbox"/>	<input type="checkbox"/>
13. Keep sample at required temperature	<input type="checkbox"/>	<input type="checkbox"/>
14. Ensure availability of standard solutions according to test procedure	<input type="checkbox"/>	<input type="checkbox"/>
15. Set equipment according to test requirement	<input type="checkbox"/>	<input type="checkbox"/>
16. Wash all glassware as per lab procedure	<input type="checkbox"/>	<input type="checkbox"/>
17. Standardize required solution with specified work instructions	<input type="checkbox"/>	<input type="checkbox"/>
18. Conduct pre-use and safety checks	<input type="checkbox"/>	<input type="checkbox"/>
19. Process water sample and calculate Ca and Mg contents as per standard test method	<input type="checkbox"/>	<input type="checkbox"/>
20. Process water sample and perform carbonate and bicarbonate test as per standard test method	<input type="checkbox"/>	<input type="checkbox"/>
21. Determine chloride contents in water sample as per standard test method	<input type="checkbox"/>	<input type="checkbox"/>
22. Perform standard test procedure to calculate Na and K contents in water sample	<input type="checkbox"/>	<input type="checkbox"/>
23. Calculate boron contents in soil sample by following standard test protocol	<input type="checkbox"/>	<input type="checkbox"/>
24. Prepare fertilizer sample to obtain water soluble boron contents	<input type="checkbox"/>	<input type="checkbox"/>
25. Process prepared fertilizer sample as per standard testing procedure to calculate boron contents	<input type="checkbox"/>	<input type="checkbox"/>
26. Prepare soil sample to assess phosphorus contents according	<input type="checkbox"/>	<input type="checkbox"/>

to standard method		
27. Perform standard analysis on prepared sample to calculate phosphorus content of soil	<input type="checkbox"/>	<input type="checkbox"/>
28. Perform standard method to calculate soil potassium contents	<input type="checkbox"/>	<input type="checkbox"/>
29. Perform total phosphorus calculation test in soil, liquid and mixed fertilizer by following standard titrimetric method	<input type="checkbox"/>	<input type="checkbox"/>
30. Calculate end results according to defined procedure	<input type="checkbox"/>	<input type="checkbox"/>
31. Run Laboratory Control samples as per standard	<input type="checkbox"/>	<input type="checkbox"/>
32. Perform replicate/re-testing as per lab standards	<input type="checkbox"/>	<input type="checkbox"/>
33. Record quality control data as per lab procedure	<input type="checkbox"/>	<input type="checkbox"/>
34. Note down Results on analyst workbook	<input type="checkbox"/>	<input type="checkbox"/>
35. Record the results on result record form and submit to reporting section	<input type="checkbox"/>	<input type="checkbox"/>
36. Clear and restore work area	<input type="checkbox"/>	<input type="checkbox"/>
37. Maintain pH of sample at required value	<input type="checkbox"/>	<input type="checkbox"/>
38. Ensure PPE required for analysis	<input type="checkbox"/>	<input type="checkbox"/>
39. Handle acids as per MSDS.	<input type="checkbox"/>	<input type="checkbox"/>
40. Ensure safety parameters for each instruments	<input type="checkbox"/>	<input type="checkbox"/>

Candidate's Signature_____

Assessor's Signature_____

Date: _____

Instruction Sheet for the Candidate

Qualification	National Vocational Certificate level 4, in Agriculture Sector (Soil, water and fertilizer testing lab technician)
Competency Standard(s)	<ul style="list-style-type: none">• Handling of sophisticated level Equipment 1• Perform Calcium & Magnesium test of water by Titrimetric Method• Perform Carbonates & Bicarbonates test by Titrimetric Method• Perform Chloride (Cl) test by Titrimetric Method• Perform Sodium (Na) test for water by Flame-Photometric Method• Perform Potassium (K) test by Flame-Photometric Method• Perform Boron (Water-Soluble) in Fertilizers through Spectrophotometre• Perform Soil Boron Test• Perform Soil Extractable Phosphorus Test• Perform Soil Extractable Potassium Test• Perform Total phosphorus in solid, liquid and mixed fertilizer by titrimetric method

Assessors Judgment Guide

Qualification	National Vocational Certificate level-4, in Electronics Sector(Satellite Dish Installer)
Competency Standard(s)	<ul style="list-style-type: none"> Handling of sophisticated level Equipment 1 Perform Calcium & Magnesium test of water by Titrimetric Method Perform Carbonates & Bicarbonates test by Titrimetric Method Perform Chloride (Cl) test by Titrimetric Method Perform Sodium (Na) test for water by Flame-Photometric Method Perform Potassium (K) test by Flame-Photometric Method Perform Boron (Water-Soluble) in Fertilizers through Spectrophotometre Perform Soil Boron Test Perform Soil Extractable Phosphorus Test Perform Soil Extractable Potassium Test Perform Total phosphorus in solid, liquid and mixed fertilizer by titrimetric method
Candidate Details	<p>Name: _____</p> <p>Registration/Roll Number: _____ 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: _____</p>

Candidate Details	Name_____ Registration/Roll Number_____
Guidance for Candidate	<p>To meet this standard you are required to complete the following within 4Hrs (for practical demonstration & assessment):</p> <p>Perform following task</p> <ol style="list-style-type: none"> Configure and run sophisticated instruments such as Block Digestion Unit, Pippette Dispenser, Flame Photometer, Vacuum Filtration Device, and Water Distillation Unit. Analyse water sample for Ca+Mg, CO₃, HCO₃, Cl, Na and K contents Analyse soil sample for boron, phosphorus and potassium contents Analyse fertilizer sample for Boron and Phosphorus contents
Time: 4Hrs	<p>During a practical assessment, under observation by an assessor, you are required to</p> <ul style="list-style-type: none"> Configure and run sophisticated instruments such as Block Digestion Unit, Pippette Dispenser, Flame Photometer, Vacuum Filtration Device, and Water Distillation Unit. Analyse water sample for Ca+Mg, CO₃, HCO₃, Cl, Na and K contents Analyse soil sample for boron, phosphorus and potassium contents Analyse fertilizer sample for Boron and Phosphorus contents Use
	<p>Demonstrate the following criteria:</p> <ol style="list-style-type: none"> Ensure cleanliness of equipment before and after use Ensure availability of standard operating procedure for every equipment Maintain 'Repair and Maintenance history sheet' for each specific equipment as per given standard Ensure proper placing of equipment after use as per lab protocols Follow safety guidelines as per equipment manual Follow SOPs for operating specific equipment as given in manuals Inspect equipment properly before and after use Perform intermediate checks of equipment according to set instructions before use as per requirement Monitor all errors and record data as instructed Perform basic troubleshoot as prescribed Calibrate instruments as per given procedures in manuals Check sample label for required test Keep sample at required temperature Ensure availability of standard solutions according to test procedure Set equipment according to test requirement Wash all glassware as per lab procedure Standardize required solution with specified work instructions Conduct pre-use and safety checks

	<ol style="list-style-type: none"> 19. Process water sample and calculate Ca and Mg contents as per standard test method 20. Process water sample and perform carbonate and bicarbonate test as per standard test method 21. Determine chloride contents in water sample as per standard test method 22. Perform standard test procedure to calculate Na and K contents in water sample 23. Calculate boron contents in soil sample by following standard test protocol 24. Prepare fertilizer sample to obtain water soluble boron contents 25. Process prepared fertilizer sample as per standard testing procedure to calculate boron contents 26. Prepare soil sample to assess phosphorus contents according to standard method 27. Perform standard analysis on prepared sample to calculate phosphorus content of soil 28. Perform standard method to calculate soil potassium contents 29. Perform total phosphorus calculation test in soil, liquid and mixed fertilizer by following standard titrimetric method 30. Calculate end results according to defined procedure 31. Run Laboratory Control samples as per standard 32. Perform replicate/re-testing as per lab standards 33. Record quality control data as per lab procedure 34. Note down Results on analyst workbook 35. Record the results on result record form and submit to reporting section 36. Clear and restore work area 37. Maintain pH of sample at required value 38. Ensure PPE required for analysis 39. Handle acids as per MSDS. 40. Ensure safety parameters for each instruments
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Assessment Summary (to be filled by the assessor)							
Activity	Method					Result	
Nature of Activity	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Practical Skill Demonstration			✓				
Knowledge Assessment		✓					
Other Requirement							

Observation Checklist

Assessment Task		Perform following task <ul style="list-style-type: none">• Configure and run sophisticated instruments such as Block Digestion Unit, Pippette Dispenser, Flame Photometer, Vacuum Filtration Device, and Water Distillation Unit.• Analyse water sample for Ca+Mg, CO₃, HCO₃, Cl, Na and K contents• Analyse soil sample for boron, phosphorus and potassium contents• Analyse fertilizer sample for Boron and Phosphorus contents Use		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Ensured cleanliness of equipment before and after use			
2.	Ensured availability of standard operating procedure for every equipment			
3.	Maintained ‘Repair and Maintenance history sheet’ for each specific equipment as per given standard			
4.	Ensured proper placing of equipment after use as per lab protocols			
5.	Followed safety guidelines as per equipment manual			
6.	Followed SOPs for operating specific equipment as given in manuals			
7.	Inspected equipment properly before and after use			
8.	Performed intermediate checks of equipment according to set instructions before use as per requirement			
9.	Monitored all errors and record data as instructed			
10.	Performed basic troubleshoot as prescribed			
11.	Calibrated instruments as per given procedures in manuals			
12.	Checked sample label for required test			
13.	Kept sample at required temperature			
14.	Ensured availability of standard solutions according to test procedure			
15.	Set equipment according to test requirement			

16.	Washed all glassware as per lab procedure			
17.	Standardized required solution with specified work instructions			
18.	Conducted pre-use and safety checks			
19.	Processed water sample and calculate Ca and Mg contents as per standard test method			
20.	Processed water sample and perform carbonate and bicarbonate test as per standard test method			
21.	Determined chloride contents in water sample as per standard test method			
22.	Performed standard test procedure to calculate Na and K contents in water sample			
23.	Calculated boron contents in soil sample by following standard test protocol			
24.	Prepared fertilizer sample to obtain water soluble boron contents			
25.	Processed prepared fertilizer sample as per standard testing procedure to calculate boron contents			
26.	Prepared soil sample to assess phosphorus contents according to standard method			
27.	Performed standard analysis on prepared sample to calculate phosphorus content of soil			
28.	Performed standard method to calculate soil potassium contents			
29.	Performed total phosphorus calculation test in soil, liquid and mixed fertilizer by following standard titrimetric method			
30.	Calculated end results according to defined procedure			
31.	Run Laboratory Control samples as per standard			
32.	Performed replicate/re-testing as per lab standards			
33.	Recorded quality control data as per lab procedure			
34.	Noted down Results on analyst workbook			
35.	Recorded the results on result record form and submit to reporting section			

36.	Cleared and restore work area			
37.	Maintained pH of sample at required value			
38.	Ensured PPE required for analysis			
39.	Handled acids as per MSDS.			
40.	Ensured safety parameters for each instruments			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Feedback to the Candidate	
<div>Candidate's Signature_____Assessor's Signature_____</div>	

Annexure A

General Information <i>(must be completed)</i>			
Date when this survey was conducted			
Approximate intended installation date			
This site survey was conducted by:			
Name:			
Country:			
Telephone:		Mobile:	
Fax:			
Email:			

Section 1: Preliminary Engineering Details									
Site latitude:	°	'	"	[N/S]	Site longitude:	°	'	"	[E/W]
<i>To determine the site coordinates use a GPS. Please enter as degrees, minutes, seconds. Must be accurate to within approximately 20 miles / 30 Km .</i>									
Magnetic variation at site:				° [E/W]					
>> Proposed Satellite & Orbital Slot:						°El:		°Az:	
Magnetic variation at site:				° [E/W]					
>> Alternative Satellite & Orbital Slot:						°El:		°Az:	
>> Type of Service:				<input type="checkbox"/> C band		<input type="checkbox"/> Ku band			

>> iDirect platform notes:					
Customer Interface:	Ethernet				
>> Proposed Antenna size:	<input type="checkbox"/> <1.2m	<input type="checkbox"/> 1.2m	<input type="checkbox"/> 1.8m	<input type="checkbox"/> 2.4m	<input type="checkbox"/> 3.7m

Section 2: Building / Site Information

Proposed Antenna mount: (<input checked="" type="checkbox"/> check as applicable)	
Non-penetrating roof mount (NPRM)	
<i>If NPRM, can the roof support the weight (up to 2000Kg for 2.4m antenna)?</i>	
Non-penetrating ground mount (NPGM)	
Ground level pole mount set in concrete	
Ground level pole mount bolted to wall	
Custom mount	
<i>Description / drawings of custom mount to be attached, if applicable.</i>	

Where is the building/site located:		<input type="checkbox"/> Town (center)	<input type="checkbox"/> Outside Town
Building external wall composition (e.g. glass, brick, concrete, etc):			
Is the antenna easily visible to the public:		<input type="checkbox"/> Yes	<input type="checkbox"/> No
Is the antenna safe from unauthorized access:		<input type="checkbox"/> Yes	<input type="checkbox"/> No
Is sufficient roof / floor space available (if roof mount is specified):		<input type="checkbox"/> Yes	<input type="checkbox"/> No
(For 2.4m Antenna NPRM / NPGM at least 5m x 5m)			
Is the roof / floor flat (maximum inclination 5°):		<input type="checkbox"/> Yes	<input type="checkbox"/> No
Roof / Soil composition:			
Building electrical grounding available at the antenna position:		<input type="checkbox"/> Yes	<input type="checkbox"/> No
Lightning protection available :		<input type="checkbox"/> Yes	<input type="checkbox"/> No
Building/ site height:	Stories:	Height:	
Method of transporting dish to the roof:	<input type="checkbox"/> By hands	<input type="checkbox"/> Elevator	<input type="checkbox"/> Crane
Roof access:			m ²
Section 3: Expected Obstructions / Possible Interference			

Sight towards the satellite (As seen from the position of the antenna):		<input type="checkbox"/> Restricted	<input type="checkbox"/> Free
If Restricted, please explain:			
Interference by RF transmitters (GSM, radio, TV, microwave)			
		<input type="checkbox"/> Yes	<input type="checkbox"/> No
If Yes, indicate frequency and level [dBm]:			
Interference by high voltage lines, power and telephone cables			
		<input type="checkbox"/> Yes	<input type="checkbox"/> No
Other possible sources for interference (fans, elevators, etc.)			
		<input type="checkbox"/> Yes	<input type="checkbox"/> No

Section 4: Electrical Wiring

Section 4 is designed for gathering information about the electrical wiring including inter facility (IFL) and customer interface cabling. Pay special attention to any cable ducts or trays, and wall/floor penetrations that may be required.

Standard in country voltage:	<input type="checkbox"/> 110-115 V, 60Hz		
	<input type="checkbox"/> 220-240 V, 50 Hz		
Installation voltage: (will be used at the site)	<input type="checkbox"/> 110-115 V, 60Hz		
	<input type="checkbox"/> 220-240 V, 50 Hz		
Primary electrical power source:	<input type="checkbox"/> City power/ national grid		
	<input type="checkbox"/> Gas / diesel generator		
	<input type="checkbox"/> Solar / wind / hydro		
Typical length and frequency of average power outages (primary source):			
Is the primary power source earthed?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Secondary electrical power source:	<input type="checkbox"/> City power/ national grid		
	<input type="checkbox"/> Gas / diesel generator		
	<input type="checkbox"/> Solar / wind / hydro		
Is battery backup power to be provided?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Is a pure sine wave inverter already installed? (converts DC to AC power – must be adequate for 24/7 operation)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Is the voltage stabilized?	<input type="checkbox"/> No		
	<input type="checkbox"/> Yes, relay stepped		
	<input type="checkbox"/> Yes, servo controlled		
Is good quality surge protection installed?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Who is installing / upgrading the electrical systems?			
Will the antenna be equipped with a de-ice system:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Power connection available at the antenna:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Total length of cable run from antenna to indoor equipment:		Meter/feet	
Trench and/or conduit required:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Has the building an existing cable entrance:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Do wall and floor penetrations have to be made:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
By local law. What type of cable is required:	<input type="checkbox"/> Non	<input type="checkbox"/> *Plenum	<input type="checkbox"/> No law

Section 5: Indoor Equipment

Give a brief description of the proposed location of the indoor equipment: <i>(Please attach photograph)</i>			
<input type="checkbox"/> Computer room	<input type="checkbox"/> Telephone room	<input type="checkbox"/> Storage room	
<input type="checkbox"/> Other <i>(please describe)</i>			
Can the indoor equipment be maintained within an acceptable operating temperature range (0°C - 45°C, 32°F - 113°F)		<input type="checkbox"/> Yes	<input type="checkbox"/> No
Is the IDU location safe from unauthorized access:		<input type="checkbox"/> Yes	<input type="checkbox"/> No
Is standard AC power available for the equipment:		<input type="checkbox"/> Yes	<input type="checkbox"/> No
Is an (existing) UPS (Uninterruptible Power Supply) available:		<input type="checkbox"/> Yes	<input type="checkbox"/> No
If Yes, <i>what's its capacity:</i>		Can it be used for	<input type="checkbox"/> Yes <input type="checkbox"/> No

Distance between the IDU and the required Ethernet output

Meter/feet

The interface cable between the IDU and customer's equipment is normally the responsibility of the customer.

Give a brief description of the environmental conditions of the IDU location:		
<input type="checkbox"/> Normal temperature <i>(See above)</i>	<input type="checkbox"/> Properly ventilated	<input type="checkbox"/> Air conditioned
Section 8: Remarks, Sketches, and Photographs		
Since this form does not support the insert of pictures please create your own file and include as many		

photographs and/or sketches as necessary.

Please include whatever useful information is available such as:

- **Orientation of The Building;**
- **Antenna Location / Roof Plan;**
- **Satellite Arc View;**
- **Indoor Unit Location;**
- **Cable Run Layout;**
- **Any (Copies) of Constructional Drawings;**
- **Etc.**

Remarks

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Signature of Site Surveyor: _____

Annexure B:

FAULT REPORT FOR SATELLITE TV

Please complete all fields marked*

1. Customer Information

Customer reference/Fault report no.

Customer*

Area*

Network*

Reported by*

Phone*

Mobile*

Report date*

Fault date*

2. Installation, product and fault description

Product name*

Station no (e.g switch id)*

Serial no.*

Fault report no.

Full description of the fault
and any further useful
information*

Installation description:
(Equipment primary and
secondary voltage etc.)

Measures taken by
the customer/Other

Remarks

3. Actions taken					
Received by	Date	Sent to SE	Date	Received by (SE)	Guarantee commitment
Replacement sent to of replacement customer		Serial no			-
					If no, customer informed
Any other					
measures					
taken					
Probable					
cause of					
failure					Signature Date
Issue classification		-			
Measures taken or necessary to rectify the fault					
Customer	Customer agrees to	Date	Scrapped		
	Functional test contacted	repair			
	complete				
-	-	-	-		
	-				
4. Invoice information					
Exchang					
ed					
compon					
ents Man					
hours (h)					

Complete List of Tools, Equipment and Machines

- Marking punch
 - Measuring tape
 - Phase tester
 - Spirit Level
 - Vernier caliper
 - Wire gauge
 - Satellite Finder
 - Multi-meter
 - Digital Compass
 - Wire Tester
 - LAN Tester
 - Emergency lamp
 - Clamp meter.
 - Bench voice.
- Report format
- Micrometers