

## Self-Assessment Checklist

<b>Candidate Name</b>	
<b>Registration No.</b>	
<b>Qualification</b>	National Vocational Certificate level 3, in Agriculture Sector (Soil, water and fertilizer testing lab technician)
<b>Competency Standards</b>	<ol style="list-style-type: none"> <li>1. Prepare Regents for analysis</li> <li>2. Prepare solutions</li> <li>3. Prepare culture media</li> <li>4. Perform soil texture class identification through hydrometer</li> <li>5. Perform soil saturation percentage test</li> <li>6. Perform soil organic matter test</li> <li>7. Perform humic acid contents in solid fertilizer by gravimetric method</li> </ol>
<b>Assessment Task</b>	<ol style="list-style-type: none"> <li>1. Perform following task <ul style="list-style-type: none"> <li>▪ Prepare reagents/solutions/culture media for lab test</li> <li>▪ Analyze soil sample for texture, saturation percentage and organic matter contents</li> <li>▪ Analyze the Humic acid sample for the quality assessment of the fertilizer</li> </ul> </li> </ol>

I can.....

Performance Criteria	Yes	No
1. Arrange apparatus and chemicals required for reagents/solutions preparation as per requirement.	<input type="checkbox"/>	<input type="checkbox"/>
2. Follow proper safety precautions to handle laboratory equipment and harmful chemicals	<input type="checkbox"/>	<input type="checkbox"/>
3. Disinfect laboratory tools and equipment as per standards	<input type="checkbox"/>	<input type="checkbox"/>
4. Make reagents/solutions as per SOP.	<input type="checkbox"/>	<input type="checkbox"/>
5. Handle reagents/solutions as per procedure.	<input type="checkbox"/>	<input type="checkbox"/>
6. Make standard solution as per test procedure.	<input type="checkbox"/>	<input type="checkbox"/>
7. Standardize prepared solution as per requirement.	<input type="checkbox"/>	<input type="checkbox"/>
8. Determine concentration of unknown solutions using standard formula	<input type="checkbox"/>	<input type="checkbox"/>
9. Perform calculation using formula according to procedure.	<input type="checkbox"/>	<input type="checkbox"/>
10. Make stock solution (ppm) as per test procedure.	<input type="checkbox"/>	<input type="checkbox"/>

11. Prepare working solutions of specified dilutions as per test method.	<input type="checkbox"/>	<input type="checkbox"/>
12. Maintain records in lab log books as per lab format	<input type="checkbox"/>	<input type="checkbox"/>
13. Make coloring reagent solution as per method.	<input type="checkbox"/>	<input type="checkbox"/>
14. Mix media ingredients in solvent as per procedure	<input type="checkbox"/>	<input type="checkbox"/>
15. Pour media into vessels as required	<input type="checkbox"/>	<input type="checkbox"/>
16. Cover the Media as per procedure	<input type="checkbox"/>	<input type="checkbox"/>
17. Load sterilizers (autoclave) as per its capacity	<input type="checkbox"/>	<input type="checkbox"/>
18. Ensure fixation of sterilization unit as per requirement	<input type="checkbox"/>	<input type="checkbox"/>
19. Monitor sterilization process as per procedure	<input type="checkbox"/>	<input type="checkbox"/>
20. Add necessary additives before pouring as per procedure	<input type="checkbox"/>	<input type="checkbox"/>
21. Pour media in specified container (Petri dish) under aseptic condition	<input type="checkbox"/>	<input type="checkbox"/>
22. Label prepared reagent/ solutions/media according to its composition and batch	<input type="checkbox"/>	<input type="checkbox"/>
23. Store prepared reagent/ solutions/media at required temperature	<input type="checkbox"/>	<input type="checkbox"/>
24. Check sample label for required test.	<input type="checkbox"/>	<input type="checkbox"/>
25. Maintain Laboratory room temperature as per requirement.	<input type="checkbox"/>	<input type="checkbox"/>
26. Arrange equipment as per requirement.	<input type="checkbox"/>	<input type="checkbox"/>
27. Set up instruments in accordance with the standard work instructions	<input type="checkbox"/>	<input type="checkbox"/>
28. Ensure required standard solutions for each process	<input type="checkbox"/>	<input type="checkbox"/>
29. Conduct pre-use and safety checks	<input type="checkbox"/>	<input type="checkbox"/>
30. Process sample for soil texture class identification as per standard test method.	<input type="checkbox"/>	<input type="checkbox"/>
31. Process sample and analyze soil saturation percentage as per standard test method.	<input type="checkbox"/>	<input type="checkbox"/>
32. Analyze sample to evaluate soil organic matter through standard test method	<input type="checkbox"/>	<input type="checkbox"/>
33. Prepare and analyze fertilizer sample to assess humic acid contents as per standard test procedure	<input type="checkbox"/>	<input type="checkbox"/>

34. Perform digestion in fume hood as per standard method	<input type="text"/>	<input type="text"/>
35. Run Laboratory Control samples as per standard.	<input type="text"/>	<input type="text"/>
36. Perform replicate/re-testing as per lab standards.	<input type="text"/>	<input type="text"/>
37. Record quality control data as per lab procedure.	<input type="text"/>	<input type="text"/>
38. Prepare quality control charts of quality assurance activities according to lab procedure	<input type="text"/>	<input type="text"/>
39. Calculate all results using standard formula and Note down textural class using USDA textural triangle.	<input type="text"/>	<input type="text"/>
40. Submit the results to lab In-charge	<input type="text"/>	<input type="text"/>
41. Clear and restore work area	<input type="text"/>	<input type="text"/>
42. Ensure calibration of instrument if required.	<input type="text"/>	<input type="text"/>

Candidate's Signature\_\_\_\_\_

Signature\_\_\_\_\_

Date: \_\_\_\_\_

Assessor's

## Instruction Sheet for the Candidate

Qualification	National Vocational Certificate level 2, in Agriculture Sector (Soil, water and fertilizer testing lab technician)
Competency Standard(s)	<ol style="list-style-type: none"> <li>1. Prepare Regents for analysis</li> <li>2. Prepare solutions</li> <li>3. Prepare culture media</li> <li>4. Perform soil texture class identification through hydrometer</li> <li>5. Perform soil saturation percentage test</li> <li>6. Perform soil organic matter test</li> <li>7. Perform humic acid contents in solid fertilizer by gravimetric method.</li> </ol>
Candidate Details	Name _____ Registration/Roll Number _____
Guidance for Candidate	<p><b>To meet this standard, you are required to complete the following within the given time frame (for practical demonstration &amp; assessment):</b></p> <p>Perform following task</p> <ul style="list-style-type: none"> <li>▪ Prepare reagents/solutions/culture media for lab test</li> <li>▪ Analyze soil sample for texture, saturation percentage and organic matter contents</li> <li>▪ Analyze the Humic acid sample for the quality assessment of the fertilizer</li> </ul>
Time: 4 Hrs	During a practical assessment, under observation by an assessor, you are required to

Minimum Evidence Required	<ul style="list-style-type: none"> <li>▪ Prepare reagents/solutions/culture media for lab test</li> <li>▪ Analyze soil sample for texture, saturation percentage and organic matter contents</li> <li>▪ Analyze the Humic acid sample for the quality assessment of the fertilizer</li> </ul> <p>Demonstrating the following criteria:</p> <ol style="list-style-type: none"> <li>1. Arrange apparatus and chemicals required for reagents/solutions preparation as per requirement.</li> <li>2. Follow proper safety precautions to handle laboratory equipment and harmful chemicals</li> <li>3. Disinfect laboratory tools and equipment as per standards</li> <li>4. Make reagents/solutions as per SOP.</li> <li>5. Handle reagents/solutions as per procedure.</li> <li>6. Make standard solution as per test procedure.</li> <li>7. Standardize prepared solution as per requirement.</li> <li>8. Determine concentration of unknown solutions using standard formula</li> <li>9. Perform calculation using formula according to procedure.</li> <li>10. Make stock solution (ppm) as per test procedure.</li> <li>11. Prepare working solutions of specified dilutions as per test method.</li> <li>12. Maintain records in lab log books as per lab format</li> <li>13. Make coloring reagent solution as per method.</li> <li>14. Mix media ingredients in solvent as per procedure</li> <li>15. Pour media into vessels as required</li> <li>16. Cover the Media as per procedure</li> <li>17. Load sterilizers (autoclave) as per its capacity</li> <li>18. Ensure fixation of sterilization unit as per requirement</li> <li>19. Monitor sterilization process as per procedure</li> <li>20. Add necessary additives before pouring as per procedure</li> <li>21. Pour media in specified container (Petri dish) under aseptic condition</li> <li>22. Label prepared reagent/ solutions/media according to its composition and batch</li> </ol>
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	<p>23. Store prepared reagent/ solutions/media at required temperature</p> <p>24. Check sample label for required test.</p> <p>25. Maintain Laboratory room temperature as per requirement.</p> <p>26. Arrange equipment as per requirement.</p> <p>27. Set up instruments in accordance with the standard work instructions</p> <p>28. Ensure required standard solutions for each process</p> <p>29. Conduct pre-use and safety checks</p> <p>30. Process sample for soil texture class identification as per standard test method.</p> <p>31. Process sample and analyze soil saturation percentage as per standard test method.</p> <p>32. Analyze sample to evaluate soil organic matter through standard test method</p> <p>33. Prepare and analyze fertilizer sample to assess humic acid contents as per standard test procedure</p> <p>34. Perform digestion in fume hood as per standard method</p> <p>35. Run Laboratory Control samples as per standard.</p> <p>36. Perform replicate/re-testing as per lab standards.</p> <p>37. Record quality control data as per lab procedure.</p> <p>38. Prepare quality control charts of quality assurance activities according to lab procedure</p> <p>39. Calculate all results using standard formula and Note down textural class using USDA textural triangle.</p> <p>40. Submit the results to lab In-charge</p> <p>41. Clear and restore work area</p> <p>42. Ensure calibration of instrument if required.</p>
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## Assessors Judgment Guide

<b>Qualification</b>	National Vocational Certificate level 2, in Agriculture Sector (Soil, water and fertilizer testing lab technician)						
<b>Competency Standard(s)</b>	Implement Network Security						
<b>Candidate Details</b>	Name: _____ Registration/Roll Number: _____ Signature: _____						
<b>Assessment Outcome</b>	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor _____ Assessor's code: _____ Signature: _____						
<b>Assessment Summary (to be filled by the assessor)</b>							
<b>Activity</b>	<b>Method</b>					<b>Result</b>	
Nature of Activity	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Practical Skill Demonstration			✓				
Knowledge Assessment		✓					
Other Requirement							

## Observation Checklist

<b>Assessment Task</b>		Perform following task  1. Prepare reagents/solutions/culture media for lab test 2. Analyze soil sample for texture, saturation percentage and organic matter contents 3. Analyze the Humic acid sample for the quality assessment of the fertilizer		
<b>During the practical assessment, candidate demonstrated the following:</b>		<b>Yes</b>	<b>No</b>	<b>Remarks</b>
1.	Arranged apparatus and chemicals required for reagents/solutions preparation as per requirement.			
2.	Followed proper safety precautions to handle laboratory equipment and harmful chemicals			
3.	Disinfected laboratory tools and equipment as per standards			
4.	Made reagents/solutions as per SOP.			
5.	Handled reagents/solutions as per procedure.			
6.	Made standard solution as per test procedure.			
7.	Standardized prepared solution as per requirement.			
8.	Determined concentration of unknown solutions using standard formula			
9.	Performed calculation using formula according to procedure.			
10.	Made stock solution (ppm) as per test procedure.			
11.	Prepared working solutions of specified dilutions as per test method.			
12.	Maintained records in lab log books as per lab format			
13.	Made coloring reagent solution as per method.			
14.	Mixed media ingredients in solvent as per			



	procedure			
15.	Poured media into vessels as required			
16.	Covered the Media as per procedure			
17.	Loaded sterilizers (autoclave) as per its capacity			
18.	Ensured fixation of sterilization unit as per requirement			
19.	Monitored sterilization process as per procedure			
20.	Added necessary additives before pouring as per procedure			
21.	Poured media in specified container (Petri dish) under aseptic condition			
22.	Labeled prepared reagent/ solutions/media according to its composition and batch			
23.	Stored prepared reagent/ solutions/media at required temperature			
24.	Checked sample label for required test.			
25.	Maintained Laboratory room temperature as per requirement.			
26.	Arranged equipment as per requirement.			
27.	Set up instruments in accordance with the standard work instructions			
28.	Ensured required standard solutions for each process			
29.	Conducted pre-use and safety checks			
30.	Processed sample for soil texture class identification as per standard test method.			
31.	Processed sample and analyze soil saturation percentage as per standard test method.			
32.	Analyzed sample to evaluate soil organic matter through standard test method			
33.	Prepared and analyze fertilizer sample to assess humic acid contents as per standard test procedure			

34.	Performed digestion in fume hood as per standard method			
35.	Run Laboratory Control samples as per standard.			
36.	Performed replicate/re-testing as per lab standards.			
37.	Recorded quality control data as per lab procedure.			
38.	Prepared quality control charts of quality assurance activities according to lab procedure			
39.	Calculated all results using standard formula and Note down textural class using USDA textural triangle.			
40.	Submitted the results to lab In-charge			
41.	Cleared and restore work area			
42.	Ensured calibration of instrument if required.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

<b>Feedback to the Candidate</b>	
Candidate's Signature_____	Assessor's Signature_____