

### Instruction Sheet for the Candidate

<b>Qualification</b>	Agricultural Machinery Mechanic (Level-5)
<b>Competency Standard</b>	Maintain pressurized irrigation system
<b>Purpose of Assessment</b>	Formative Assessment
<b>Candidate Details</b>	Name_____
	Registration/Roll Number_____
<b>Guidance for Candidate</b>	<p><b>To meet this standard, you are required to complete the following within 03 Hrs. time frame (for practical demonstration &amp; assessment):</b></p> <ul style="list-style-type: none"> <li>• Check Pumping System before operation</li> <li>• Check Pumping System during Startup</li> <li>• Check Pumping System after Startup</li> <li>• Check Pressure Gauges and System Flushing</li> <li>• Maintain Mains and Sub-Mains</li> <li>• Maintain laterals and emitting devices</li> </ul>
<b>Time: 03 Hrs.</b>	During a practical assessment, under observation by an assessor, you are required to
<b>Minimum Evidence Required</b>	<p><b>Check Pumping System before operation</b></p> <ol style="list-style-type: none"> <li>1. Maintain fuel, oil and water level in diesel engine</li> <li>2. Select appropriate type of fertilizer</li> <li>3. Check fertilizer level in the tank</li> <li>4. Carry out idle running of fertilizer pumps</li> <li>5. Check pipes for delivery of water and fertilizer</li> <li>6. Carryout cleanliness of valves, filter, nozzles etc.</li> <li>7. Carryout chlorination of water storage tank and pump</li> </ol> <p><b>Check Pumping System during Startup</b></p> <ol style="list-style-type: none"> <li>1. Verify that the pumps are functioning properly.</li> <li>2. Watch for unusual noises, vibrations and overheating that may develop in the pump drive due to pump malfunction</li> </ol> <p><b>Check Pumping System after Startup</b></p> <ol style="list-style-type: none"> <li>1. Check pressure and flow rate at pump outlets</li> <li>2. Check fertilizer and/or chlorine injection; check dosage.</li> <li>3. Check downstream filter pressure and make sure that pressure loss is within the acceptable limits.</li> <li>4. Check the system visually for bursts</li> <li>5. Select critical points in the irrigation system and measure the pressure at those points</li> </ol> <p><b>Check Pressure Gauges and System Flushing</b></p> <ol style="list-style-type: none"> <li>1. Start the pump and allow pressure to become stable</li> <li>2. Open the drain valves of hydrocyclone and screen filters</li> <li>3. Back wash the sand media filter</li> <li>4. Operate by pass valve to maintain pressure in the system</li> <li>5. Visit the field to rectify leakage/damage, if any</li> </ol>

	<ol style="list-style-type: none"> <li>6. As irrigation over, check the wetting patterns</li> <li>7. Remove the end caps of laterals (4-5) and flush for 1-2 minutes and also check impurities</li> <li>8. Flush the sub main to remove debris</li> <li>9. Check out system wear and tear</li> <li>10. Lubricate the pump and motor</li> </ol> <p><b>Maintain Mains and Sub-Mains</b></p> <ol style="list-style-type: none"> <li>1. Tight clumps near the system to tighten the mainline with the system, if leakage/breakage occurs</li> <li>2. Flush Mainline to remove any blockage in the mainline.</li> </ol> <p><b>Maintain laterals and emitting devices</b></p> <ol style="list-style-type: none"> <li>1. Identify damage or leakage of the lateral and emitting devices (drippers, mini/micro sprinklers etc.) by visual inspection.</li> <li>2. Fix the damages of the lateral by replacing the damaged portion of the lateral and attaching new portions</li> <li>3. Clean the emitting devices by opening and cleaning the device</li> </ol>
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### Self-Assessment Checklist

<b>Candidate Name</b>	
<b>Registration No.</b>	
<b>Qualification</b>	Agricultural Machinery Mechanic (Level-5)
<b>Competency Standard</b>	Maintain pressurized irrigation system
<b>Purpose of Assessment</b>	Formative Assessment
<b>Assessment Task</b>	<ul style="list-style-type: none"> <li>Check Pumping System before operation</li> <li>Check Pumping System during Startup</li> <li>Check Pumping System after Startup</li> <li>Check Pressure Gauges and System Flushing</li> <li>Maintain Mains and Sub-Mains</li> <li>Maintain laterals and emitting devices</li> </ul>

I can.....

<b>Performance Criteria</b>	<b>Yes</b>	<b>No</b>
1. Check fuel, oil and water level in diesel engine	<input type="checkbox"/>	<input type="checkbox"/>
2. Select appropriate type of fertilizer	<input type="checkbox"/>	<input type="checkbox"/>
3. Check fertilizer level in the tank	<input type="checkbox"/>	<input type="checkbox"/>
4. Carry out idle running of fertilizer pumps	<input type="checkbox"/>	<input type="checkbox"/>
5. Check pipes for delivery of water and fertilizer	<input type="checkbox"/>	<input type="checkbox"/>
6. Carryout cleanliness of valves, filter, nozzles etc.	<input type="checkbox"/>	<input type="checkbox"/>
7. Carryout chlorination of water storage tank and pump	<input type="checkbox"/>	<input type="checkbox"/>
8. Verify that the pumps are functioning properly.	<input type="checkbox"/>	<input type="checkbox"/>
9. Watch for unusual noises, vibrations and overheating that may develop in the pump drive due to pump malfunction	<input type="checkbox"/>	<input type="checkbox"/>
10. Check pressure and flow rate at pump outlets	<input type="checkbox"/>	<input type="checkbox"/>
11. Check fertilizer and/or chlorine injection; check dosage.	<input type="checkbox"/>	<input type="checkbox"/>

12. Check downstream filter pressure and make sure that pressure loss is within the acceptable limits.	<input type="checkbox"/>	<input type="checkbox"/>
13. Check the system visually for bursts	<input type="checkbox"/>	<input type="checkbox"/>
14. Select critical points in the irrigation system and measure the pressure at those points	<input type="checkbox"/>	<input type="checkbox"/>
15. Start the pump and allow pressure to become stable	<input type="checkbox"/>	<input type="checkbox"/>
16. Open the drain valves of hydro cyclone and screen filters	<input type="checkbox"/>	<input type="checkbox"/>
17. Back wash the sand media filter	<input type="checkbox"/>	<input type="checkbox"/>
18. Operate by pass valve to maintain pressure in the system	<input type="checkbox"/>	<input type="checkbox"/>
19. Visit the field to rectify leakage/damage, if any	<input type="checkbox"/>	<input type="checkbox"/>
20. As irrigation over, check the wetting patterns	<input type="checkbox"/>	<input type="checkbox"/>
21. Remove the end caps of laterals (4-5) and flush for 1-2 minutes and also check impurities	<input type="checkbox"/>	<input type="checkbox"/>
22. Flush the sub main to remove debris	<input type="checkbox"/>	<input type="checkbox"/>
23. Check out system wear and tear	<input type="checkbox"/>	<input type="checkbox"/>
24. Lubricate the pump and motor	<input type="checkbox"/>	<input type="checkbox"/>
25. Tight clumps near the system to tighten the mainline with the system, if leakage/breakage occurs	<input type="checkbox"/>	<input type="checkbox"/>
26. Flush Mainline to remove any blockage in the mainline.	<input type="checkbox"/>	<input type="checkbox"/>
27. Identify damage or leakage of the lateral and emitting devices (drippers, mini/micro sprinklers etc.) by visual inspection.	<input type="checkbox"/>	<input type="checkbox"/>
28. Fix the damages of the lateral by replacing the damaged portion of the lateral and attaching new portions	<input type="checkbox"/>	<input type="checkbox"/>
29. Clean the emitting devices by opening and cleaning the device.	<input type="checkbox"/>	<input type="checkbox"/>

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

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

### Assessors Judgment Guide

<b>Qualification</b>	Agricultural Machinery Mechanic (Level-5)
<b>Competency Standard</b>	Maintain pressurized irrigation system
<b>Purpose of Assessment</b>	Formative Assessment
<b>Candidate Details</b>	Name: _____ Registration/Roll Number: _____ Signature: _____
<b>Assessment Outcome</b>	<div><b>COMPETENT</b><input type="checkbox"/></div> <div><b>NOT YET COMPETENT</b><input type="checkbox"/></div> <div><b>Name of the Assessor</b> _____</div> <div><b>Assessor's code:</b> _____</div> <div><b>Signature:</b> _____</div>

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

<b>Assessment Task</b>		<ul style="list-style-type: none"><li>• Check Pumping System before operation</li><li>• Check Pumping System during Startup</li><li>• Check Pumping System after Startup</li><li>• Check Pressure Gauges and System Flushing</li><li>• Maintain Mains and Sub-Mains</li><li>• Maintain laterals and emitting devices</li></ul>		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Check fuel, oil and water level in diesel engine			
2.	Select appropriate type of fertilizer			
3.	Check fertilizer level in the tank			
4.	Carry out idle running of fertilizer pumps			
5.	Check pipes for delivery of water and fertilizer			
6.	Carryout cleanliness of valves, filter, nozzles etc.			
7.	Carryout chlorination of water storage tank and pump			
8.	Verify that the pumps are functioning properly.			
9.	Watch for unusual noises, vibrations and overheating that may develop in the pump drive due to pump malfunction			
10.	Check pressure and flow rate at pump outlets			
11.	Check fertilizer and/or chlorine injection; check dosage.			
12.	Check downstream filter pressure and make sure that pressure loss is within the acceptable limits.			
13.	Check the system visually for bursts			
14.	Select critical points in the irrigation system and measure the pressure at those points			

15.	Start the pump and allow pressure to become stable			
16.	Open the drain valves of hydrocyclone and screen filters			
17.	Back wash the sand media filter			
18.	Operate by pass valve to maintain pressure in the system			
19.	Visit the field to rectify leakage/damage, if any			
20.	As irrigation over, check the wetting patterns			
21.	Remove the end caps of laterals (4-5) and flush for 1-2 minutes and also check impurities			
22.	Flush the sub main to remove debris			
23.	Check out system wear and tear			
24.	Lubricate the pump and motor			
25.	Tight clumps near the system to tighten the mainline with the system, if leakage/breakage occurs			
26.	Flush Mainline to remove any blockage in the mainline.			
27.	Identify damage or leakage of the lateral and emitting devices (drippers, mini/micro sprinklers etc.) by visual inspection.			
28.	Fix the damages of the lateral by replacing the damaged portion of the lateral and attaching new portions			
29.	Clean the emitting devices by opening and cleaning the device.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		



### Knowledge Assessment

<b>Qualification</b>	Agricultural Machinery Mechanic (Level-5)
<b>Competency Standard</b>	Maintain pressurized irrigation system
<b>Purpose of Assessment</b>	Formative Assessment
<b>Candidate Details</b>	Name: _____ Registration/Roll Number: _____ Candidate Signature: _____
<b>Assessment Outcome</b>	<div style="display: flex; justify-content: space-around; align-items: center;"> <span><b>COMPETENT</b> <input type="checkbox"/></span> <span><b>NOT YET COMPETENT</b> <input type="checkbox"/></span> </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.	What kind of irrigation falls under pressurized system?		
2.	What is the discharge range of emitter?		

3.	What does chlorination mean?		

<b>Feedback to the Candidate</b>	
<b>Candidate's Signature</b> _____	<b>Assessor's Signature</b> _____