

## Instruction Sheet for the Candidate

<b>Qualification</b>	Agricultural machinery operator ( Level-3)
<b>Competency Standard</b>	Maintain Cooling 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>• Replace the Radiator</li> <li>• Replace the Water Pump</li> <li>• Replace the Thermostate valve</li> <li>• Replace the coolant</li> <li>• Remove the temperature gauge</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>Replace the Radiator</b></p> <ol style="list-style-type: none"> <li>1. Open the Drain plug</li> <li>2. Remove the upper &amp; lower house pipe</li> <li>3. Remove the fan shroud</li> <li>4. Open the radiator bolt</li> <li>5. Remove the Radiator from Prime Mover</li> <li>6. Install the radiator</li> <li>7. Clamp the upper &amp; lower house pipes</li> </ol> <p><b>Replace the Water Pump</b></p> <ol style="list-style-type: none"> <li>1. Remove the drive belt by losing belt adjuster</li> <li>2. Drain the Coolant from Radiator</li> <li>3. Remove the housing pipe</li> <li>4. Remove the nuts/bolts from water pump housing</li> <li>5. Remove the Water pump from housing</li> <li>6. Clean the surface of cylinder block and water pump housing</li> <li>7. Insert gasket in the housing</li> </ol>

	<p>8. Install the Water pump in housing</p> <p><b>Replace the Thermostate valve</b></p> <ol style="list-style-type: none"> <li>1. Open the Drain Plug</li> <li>2. Remove the upper Hose pipe from thermostat housing</li> <li>3. Remove the housing of thermostat valve by opening bolt</li> <li>4. Remove &amp; inspect working the thermostat valve</li> <li>5. Clean the housing surface with scraper</li> <li>6. Insert new gasket in the housing</li> <li>7. Install the thermostat valve</li> <li>8. Install the thermostat housing and upper hose pipe</li> </ol> <p><b>Replace the coolant</b></p> <ol style="list-style-type: none"> <li>1. Remove radiator cap</li> <li>2. Remove the drain plug on idling speed of engine</li> <li>3. Remove all the rusted coolant from cooling system</li> <li>4. Install the drain plug of radiator</li> <li>5. Top up the cooling system with coolant</li> </ol> <p><b>Remove the temperature gauge</b></p> <ol style="list-style-type: none"> <li>1. Remove the connection of Temperature gauge</li> <li>2. Replace the temperature gauge</li> <li>3. Remove the rusting / dust from the switch</li> <li>4. Connect the temperature gauge and ground it</li> <li>5. Install the temperature gauge</li> </ol>
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## Self-Assessment Checklist

<b>Candidate Name</b>	Agricultural machinery operator ( Level-3)
<b>Registration No.</b>	
<b>Qualification</b>	Information Communication Technology (ICT) Level-5
<b>Competency Standard</b>	Maintain Cooling system
<b>Purpose of Assessment</b>	Formative Assessment
<b>Assessment Task</b>	<ul style="list-style-type: none"> <li>Replace the Radiator</li> <li>Replace the Water Pump</li> <li>Replace the Thermostate valve</li> <li>Replace the coolant</li> <li>Remove the temperature gauge</li> </ul>

I can.....

<b>Performance Criteria</b>	<b>Yes</b>	<b>No</b>
1. Open the Drain plug	<input type="checkbox"/>	<input type="checkbox"/>
2. Remove the upper & lower house pipe	<input type="checkbox"/>	<input type="checkbox"/>
3. Remove the fan shroud	<input type="checkbox"/>	<input type="checkbox"/>
4. Open the radiator bolt	<input type="checkbox"/>	<input type="checkbox"/>
5. Install the radiator	<input type="checkbox"/>	<input type="checkbox"/>
6. Clamp the upper & lower house pipes	<input type="checkbox"/>	<input type="checkbox"/>
7. Remove the driver belt by losing belt adjuster	<input type="checkbox"/>	<input type="checkbox"/>
8. Drain the Coolant from Radiator	<input type="checkbox"/>	<input type="checkbox"/>
9. Remove the nuts/bolts from water pump housing	<input type="checkbox"/>	<input type="checkbox"/>
10. Remove the nuts/bolts from water pump housing	<input type="checkbox"/>	<input type="checkbox"/>
11. Clean the surface of cylinder block and water pump housing	<input type="checkbox"/>	<input type="checkbox"/>
12. Insert gasket in the housing	<input type="checkbox"/>	<input type="checkbox"/>
13. Install the Water pump in housing	<input type="checkbox"/>	<input type="checkbox"/>
14. Remove the upper Hose pipe from thermostat housing	<input type="checkbox"/>	<input type="checkbox"/>

15. Remove the upper Hose pipe from thermostat housing	<input type="checkbox"/>	<input type="checkbox"/>
16. Remove the housing of thermostat valve by opening bolt	<input type="checkbox"/>	<input type="checkbox"/>
17. Remove & inspect working the thermostat valve	<input type="checkbox"/>	<input type="checkbox"/>
18. Clean the housing surface with scraper	<input type="checkbox"/>	<input type="checkbox"/>
19. Insert new gasket in the housing	<input type="checkbox"/>	<input type="checkbox"/>
20. Install the thermostat valve	<input type="checkbox"/>	<input type="checkbox"/>
21. Install the thermostat housing and upper hose pipe	<input type="checkbox"/>	<input type="checkbox"/>
22. Remove radiator cap	<input type="checkbox"/>	<input type="checkbox"/>
23. Remove the drain plug on idling speed of engine	<input type="checkbox"/>	<input type="checkbox"/>
24. Remove all the rusted coolant from cooling system	<input type="checkbox"/>	<input type="checkbox"/>
25. Install the drain plug of radiator	<input type="checkbox"/>	<input type="checkbox"/>
a. Top up the cooling system with coolant	<input type="checkbox"/>	<input type="checkbox"/>
26. Remove the connection of Temperature gauge	<input type="checkbox"/>	<input type="checkbox"/>
27. Replace the temperature gauge	<input type="checkbox"/>	<input type="checkbox"/>
28. Remove the rusting / dust from the switch	<input type="checkbox"/>	<input type="checkbox"/>
29. Connect the temperature gauge and ground it	<input type="checkbox"/>	<input type="checkbox"/>
30. Install the temperature gauge	<input type="checkbox"/>	<input type="checkbox"/>

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

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

## Assessors Judgment Guide

<b>Qualification</b>	Agricultural machinery operator ( Level-3)
<b>Competency Standard</b>	Maintain Cooling system
<b>Purpose of Assessment</b>	Formative Assessment
<b>Candidate Details</b>	Name: _____ Registration/Roll Number: _____ Signature: _____
<b>Assessment Outcome</b>	<div style="display: flex; justify-content: space-between; 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: _____

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>• Replace the Radiator</li> <li>• Replace the Water Pump</li> <li>• Replace the Thermostate valve</li> <li>• Replace the coolant</li> <li>• Remove the temperature gauge</li> </ul>		
<b>During the practical assessment, candidate demonstrated the following:</b>		<b>Yes</b>	<b>No</b>	<b>Remarks</b>
1.	Open the Drain plug			
2.	Remove the upper & lower house pipe			
3.	Remove the fan shroud			
4.	Open the radiator bolt			
5.	Install the radiator			
6.	Clamp the upper & lower house pipes			
7.	Remove the driver belt by losing belt adjuster			
8.	Drain the Coolant from Radiator			
9.	Remove the nuts/bolts from water pump housing			
10.	Remove the nuts/bolts from water pump housing			
11.	Clean the surface of cylinder block and water pump housing			
12.	Insert gasket in the housing			
13.	Install the Water pump in housing			
14.	Remove the upper Hose pipe from thermostat housing			
15.	Remove the upper Hose pipe from thermostat housing			
16.	Remove the housing of thermostat valve by opening bolt			
17.	Remove & inspect working the thermostat valve			
18.	Clean the housing surface with scraper			

19.	Insert new gasket in the housing			
20.	Install the thermostat valve			
21.	Install the thermostat housing and upper hose pipe			
22.	Remove radiator cap			
23.	Remove the drain plug on idling speed of engine			
24.	Remove all the rusted coolant from cooling system			
25.	Install the drain plug of radiator			
26.	Top up the cooling system with coolant			
27.	Remove the connection of Temperature gauge			
28.	Replace the temperature gauge			
29.	Remove the rusting / dust from the switch			
30.	Connect the temperature gauge and ground it			
Competent <input type="checkbox"/>		Install the temperature gauge		

## Knowledge Assessment

<b>Qualification</b>	Agricultural machinery operator ( Level-3)
<b>Competency Standard</b>	Maintain Cooling system
<b>Purpose of Assessment</b>	Formative Assessment
<b>Candidate Details</b>	Name: _____ Registration/Roll Number: _____ Candidate Signature: _____
<b>Assessment Outcome</b>	<b>COMPETENT</b> <input type="checkbox"/> <b>NOT YET COMPETENT</b> <input type="checkbox"/> 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.

<b>Questions</b> (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)		<b>Satisfactory</b>	<b>Not Satisfactory</b>
1.	Types of cooling systems?		
2.	Define Coolant cycle?		
3.	Engine Efficiency w.r.t. cooling process and ambient temperature?		



	Working principle of various components of cooling system		
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Feedback to the Candidate	
Candidate's Signature_____	Assessor's Signature _____