

Instruction Sheet for the Candidate

Qualification	National Vocational Certificate in Metal Forming & Processing Level 5
Competency Standard	Perform optical emission spectroscopic analysis
Purpose of Assessment	Formative Assessment
Candidate Details	Name _____ Registration/Roll Number _____
Guidance for Candidate	<p>To meet this standard, you are required to complete the following within 04 Hrs. time frame (for practical demonstration & assessment):</p> <ul style="list-style-type: none"> • CU1. Prepare the Sample of emission spectroscopy • CU2. Perform Calibration and standardization • CU3. Perform the Test
Time: 04 Hrs.	During a practical assessment, under observation by an assessor, you are required to
Minimum Evidence Required	<p>CU1. Prepare the Sample of emission spectroscopy</p> <p>P1. Cut the sample as per standard</p> <p>P2. Clean the surface of sample with emery paper to remove rust</p> <p>P3. Make the surface of sample smooth and flat</p> <p>P4. Resin the sample with water</p> <p>P5. Clean with alcohol and dry.</p> <p>CU2. Perform Calibration and standardization</p> <p>P1. Energize the Optical Emission Spectrometer as per standard</p> <p>P2. Set the pressure of inert gas (Argon)</p> <p>P3. Switch ON the filter machine</p> <p>P4. Power ON the computer and open analytical software</p> <p>P5. Clean the electrode chamber with metal wire brush</p> <p>P6. Place the calibration block in electrode chamber</p> <p>P7. Clamp the calibration block</p> <p>P8. Start the spark for specific time</p> <p>P9. Record and compare the results with calibration certificate</p> <p>P10. Remove the calibration block and place at designated place</p> <p>CU3. Perform the Test</p> <p>P1. Ensure the pressure of gas (Argon)</p> <p>P2. Ensure the working of filter machine</p> <p>P3. Open the analytical software</p>

	<p>P4. Clean the electrode chamber with metal wire brush</p> <p>P5. Place the sample in electrode chamber</p> <p>P6. Clamp the sample as per SOPs</p> <p>P7. Ignite the spark for specific time</p> <p>P8. Record and evaluate the results</p> <p>P9. Perform printout of the results</p> <p>P10. Shut down the software</p> <p>P11. Switch off the filter machine</p> <p>P12. Remove the sample and store as per requirements</p>
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Self-Assessment Checklist

Candidate Name	
Registration No.	
Qualification	National Vocational Certificate in Metal Forming & Processing Level 5
Competency Standard	Perform optical emission spectroscopic analysis
Purpose of Assessment	Formative Assessment
Assessment Task	<ul style="list-style-type: none"> • CU1. Prepare the Sample of emission spectroscopy • CU2. Perform Calibration and standardization • CU3. Perform the Test

I can.....

Performance Criteria	Yes	No
P1. Cut the sample as per standard	<input type="checkbox"/>	<input type="checkbox"/>
P2. Clean the surface of sample with emery paper to remove rust	<input type="checkbox"/>	<input type="checkbox"/>
P3. Make the surface of sample smooth and flat	<input type="checkbox"/>	<input type="checkbox"/>
P4. Resin the sample with water	<input type="checkbox"/>	<input type="checkbox"/>
P5. Clean with alcohol and dry.	<input type="checkbox"/>	<input type="checkbox"/>
P6. Energize the Optical Emission Spectrometer as per standard	<input type="checkbox"/>	<input type="checkbox"/>
P7. Set the pressure of inert gas (Argon)	<input type="checkbox"/>	<input type="checkbox"/>
P8. Switch ON the filter machine	<input type="checkbox"/>	<input type="checkbox"/>
P9. Power ON the computer and open analytical software	<input type="checkbox"/>	<input type="checkbox"/>
P10. Clean the electrode chamber with metal wire brush	<input type="checkbox"/>	<input type="checkbox"/>
P11. Place the calibration block in electrode chamber	<input type="checkbox"/>	<input type="checkbox"/>
P12. Clamp the calibration block	<input type="checkbox"/>	<input type="checkbox"/>
P13. Start the spark for specific time	<input type="checkbox"/>	<input type="checkbox"/>
P14. Record and compare the results with calibration certificate	<input type="checkbox"/>	<input type="checkbox"/>
P15. Remove the calibration block and place at designated place	<input type="checkbox"/>	<input type="checkbox"/>
P16. Ensure the pressure of gas (Argon)	<input type="checkbox"/>	<input type="checkbox"/>
P17. Ensure the working of filter machine	<input type="checkbox"/>	<input type="checkbox"/>
P18. Open the analytical software	<input type="checkbox"/>	<input type="checkbox"/>
P19. Clean the electrode chamber with metal wire brush	<input type="checkbox"/>	<input type="checkbox"/>

P20.	Place the sample in electrode chamber	<input type="checkbox"/>	<input type="checkbox"/>
P21.	Clamp the sample as per SOPs	<input type="checkbox"/>	<input type="checkbox"/>
P22.	Ignite the spark for specific time	<input type="checkbox"/>	<input type="checkbox"/>
P23.	Record and evaluate the results	<input type="checkbox"/>	<input type="checkbox"/>
P24.	Perform printout of the results	<input type="checkbox"/>	<input type="checkbox"/>
P25.	Shut down the software	<input type="checkbox"/>	<input type="checkbox"/>
P26.	Switch off the filter machine	<input type="checkbox"/>	<input type="checkbox"/>
P27.	Remove the sample and store as per requirements	<input type="checkbox"/>	<input type="checkbox"/>

Candidate's Signature_____ Assessor's Signature_____

Date: _____

Assessors Judgment Guide

Qualification	National Vocational Certificate in Metal Forming & Processing Level 5
Competency Standard	Perform optical emission spectroscopic analysis
Purpose of Assessment	Formative Assessment
Candidate Details	Name: _____ Registration/Roll Number: _____ Signature: _____
Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> 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

Assessment Task		<ul style="list-style-type: none"> • CU1. Prepare the Sample of emission spectroscopy • CU2. Perform Calibration and standardization • CU3. Perform the Test 		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Cut the sample as per standard			
2.	Clean the surface of sample with emery paper to remove rust			
3.	Make the surface of sample smooth and flat			
4.	Resin the sample with water			
5.	Clean with alcohol and dry.			
6.	Energize the Optical Emission Spectrometer as per standard			
7.	Set the pressure of inert gas (Argon)			
8.	Switch ON the filter machine			
9.	Power ON the computer and open analytical software			
10.	Clean the electrode chamber with metal wire brush			
11.	Place the calibration block in electrode chamber			
12.	Clamp the calibration block			
13.	Start the spark for specific time			
14.	Record and compare the results with calibration certificate			
15.	Remove the calibration block and place at designated place			
16.	Ensure the pressure of gas (Argon)			
17.	Ensure the working of filter machine			
18.	Open the analytical software			
19.	Clean the electrode chamber with metal wire brush			

20.	Place the sample in electrode chamber			
21.	Clamp the sample as per SOPs			
22.	Ignite the spark for specific time			
23.	Record and evaluate the results			
24.	Perform printout of the results			
25.	Shut down the software			
26.	Switch off the filter machine			
27.	Remove the sample and store as per requirements			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Knowledge Assessment

Qualification	National Vocational Certificate in Metal Forming & Processing Level 5
Competency Standard	Perform optical emission spectroscopic analysis
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.	What is the principle of OES?		
2.	What does OES measure?		
3.	Describe the properties of inert gases.		

4.	Describe different parts of optical emission spectrometer.		
5.	Define spark.		
6.	Define ionization.		

Feedback to the Candidate
Candidate's Signature _____ Assessor's Signature _____