

Assessment Evidence Guide

For

“Diploma in Metallurgy and Metal casting”

Level-5

Module name
(Summative Assessment)

8th -12th March 2021



**National Vocational & Technical
Training Commission**

Title of Qualification: Diploma in Metallurgy and Metal casting	CS Code:	Level: 5	Version: 01
Competency Standard Title: Perform Etching Operation Perform Microscopic Examination Operation Perform dye penetrant, magnetic and ultrasonic test Perform optical emission spectroscopic analysis	Assessment Date (DD/MM/YY): Assessment Time: 5 Hours		

Candidate Details	Name: Registration/Roll Number:.....
Guidance for Candidate	<p>To meet this standard, you are required to complete the following within the given time frame (for practical demonstration & assessment):</p> <p>Assessment Task 1: Candidate is required to: Perform Chemical Etching Operation</p> <p>Assessment Task 2: Candidate is required to: Perform Microscopic Examination Operation</p> <p>Assessment Task 4: Candidate is required to: Determine the defects of specimen by using ultrasonic technique</p> <p>Assessment Task 5: Candidate is required to: Perform the optical emission spectroscopic analysis Test</p> <p>And complete:</p> <ol style="list-style-type: none"> 1. Knowledge assessment test (Written or Oral) 2. Portfolios at the time of assessment (if any)

Minimum Evidence Required	<p>During a practical assessment, under observation by an assessor, you will complete:</p> <p>Performance Criteria</p> <p>P1. Identify etching solution specifications according to metallographic standard and type of specimen.</p> <p>P2. Adopt standard safety practice and procedure for handling acid chemicals.</p> <p>P3. Make etching solution in china dish as per requirement.</p> <p>P4. Dip the specimen into solution with the help of tong for several time until its shine become dim.</p> <p>P5. Wash with distil water then clean with alcohol.</p> <p>P6. Dry the specimen with air dryer.</p> <p>P1. Place the specimen onto the stage of Metallurgical microscope.</p> <p>P2. Power on source light and adjust its intensity.</p> <p>P3. Select the magnification power by adjusting eye piece number (50 to 1000X)</p> <p>P4. Adjusting the stage with the help of nobs to make clear microstructure of specimen.</p> <p>P5. Capture the picture of microstructure with the help of camera.</p> <p>Save the image in computer for further study.</p> <p>P1. Perform pre-cleaning of samples.</p> <p>P2. Inspect the working mode of the equipment</p> <p>P3. Switch ON the ultrasonic testing equipment</p> <p>P4. Calibrate the ultrasonic equipment with respect to calibration block</p> <p>P5. Select the probe according to the specimen</p> <p>P6. Apply couplant gel on the given specimen</p> <p>P7. Test the given specimen</p> <p>P8. Observe the peaks.</p> <p>Interpret the peaks and record the results</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>
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	<p>P5. Place the sample in electrode chamber</p> <p>P6. Clamp the sample</p> <p>P7. Start the spark for specific time</p> <p>P8. Note and evaluate the results</p> <p>P9. print 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>
	<p>Portfolios required at the time of assessment (if any) for</p>

Continued on following page

Assessors Judgment Guide (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

Candidate Details	Name: Registration/Roll Number: Candidate Signature:
Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor: Assessor's code: Signature of the Assessor:

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							

Each Assessment Task (with performance criteria)				
Assessment Task 1		Description of assessment task 1		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
	P1. Label the identification number to recognize specimen identity.			
	P2. Perform proper documentation with date & time in log book.			
	P3. Record the initial conditions of Specimen.			
	P4. Use the measuring tool for marking.			
	P5. Mark the cutting area with permanent marker, to be sectioned or cut.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 2		Description of assessment task 2		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Title of Qualification:	CS Code:	Level:	Version: 01
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Competency Standard Title:	Assessment Date (DD/MM/YY):
	Assessment Time: 30 min

Guidance for Candidate	To complete your assessment for this Competency Standard, you need to answer the questions on the following pages successfully.
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Assessors Guide (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

Candidate Details	Name:.....Registration/Roll Number: Candidate Signature:
Written Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor:Assessor's code: Signature of the Assessor:

Title of Qualification:	CS Code:	Level:	Version: 01
Competency Standard Title:	Assessment Date (DD/MM/YY): Assessment Time: 30 min		

WRITTEN ASSESSMENT

Question	Candidate's answer
1. What is purpose of coating?	<ul style="list-style-type: none"> • To protect metal surface • Lifetime • Enhance materiel properties
2.	
3.	
4.	
5.	
6.	
7.	

Question	Candidate's answer
8.	
9.	