

Instruction Sheet for the Candidate

Qualification	National Vocational Certificate in Metal Forming & Processing Level 5
Competency Standard	Perform Non-Destructive Testing
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. Determine the surface defects of specimen using dye penetrant technique • CU2. Determine the defects of given specimen using magnetic particle testing technique • CU3. Determine the defects of metallic specimen using eddy current testing technique • CU4. Determine the defects of specimen using ultrasonic technique • CU5. Determine the defects of given specimen by using radiographic testing technique
Time: 04 Hrs.	During a practical assessment, under observation by an assessor, you are required to
Minimum Evidence Required	<p>CU1. Determine the surface defects of specimen using dye penetrant technique</p> <p>P1. Perform pre-cleaning of samples</p> <p>P2. Apply dye penetrant on the specimen</p> <p>P3. Remove the excess dye penetrant</p> <p>P4. Apply the developer on the specimen</p> <p>P5. Inspect the specimen for defects</p> <p>P6. Interpret the results</p> <p>P7. Record the results</p> <p>CU2. Determine the defects of given ferromagnetic specimen using magnetic particle testing technique</p> <p>P1. Perform pre-cleaning of given ferromagnetic samples.</p> <p>P2. Select the working mode of the equipment</p> <p>P3. Apply magnetic field to the specimen</p> <p>P4. Apply ferromagnetic medium with respect to type of test (Dry or Wet)</p>

	<p>P5. Remove the excess ferromagnetic medium.</p> <p>P6. Interpret the indications.</p> <p>P7. Evaluate the results.</p> <p>CU3. Determine the defects of given metallic specimen by using eddy current testing technique</p> <p>P1. Perform pre-cleaning of given metallic samples.</p> <p>P2. Select the working mode of the equipment</p> <p>P3. Place the specimen on insulator table</p> <p>P4. Test the specimen as per SOPs</p> <p>P5. Note the values of resultant current of the coil</p> <p>P6. Interpret and record the results</p> <p>CU4. Determine the defects of specimen by using ultrasonic technique</p> <p>P1. Perform pre-cleaning of given samples.</p> <p>P2. Select 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 as per SOPs</p> <p>P8. Record the graph peaks on the display</p> <p>P9. Interpret the graph peaks</p> <p>P10. Record the results</p> <p>CU5. Determine the defects of given specimen by radiography technique</p> <p>P1. Perform pre-cleaning of given metallic samples.</p> <p>P2. Select the working mode of the radiographic equipment</p> <p>P3. Inspect all safety facilities as per standard</p> <p>P4. Set the position of photographic film</p> <p>P5. Place the specimen at specific position in front of photographic film</p> <p>P6. Pass the rays through the specimen</p> <p>P7. Develop the photographic film</p> <p>P8. Inspect the image of specimen</p> <p>P9. Record the results</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 Non-Destructive Testing
Purpose of Assessment	Formative Assessment
Assessment Task	<ul style="list-style-type: none"> • CU1. Determine the surface defects of specimen using dye penetrant technique • CU2. Determine the defects of given specimen using magnetic particle testing technique • CU3. Determine the defects of metallic specimen using eddy current testing technique • CU4. Determine the defects of specimen using ultrasonic technique • CU5. Determine the defects of given specimen by using radiographic testing technique

I can.....

Performance Criteria	Yes	No
P1. Perform pre-cleaning of samples	<input type="checkbox"/>	<input type="checkbox"/>
P2. Apply dye penetrant on the specimen	<input type="checkbox"/>	<input type="checkbox"/>
P3. Remove the excess dye penetrant	<input type="checkbox"/>	<input type="checkbox"/>
P4. Apply the developer on the specimen	<input type="checkbox"/>	<input type="checkbox"/>
P5. Inspect the specimen for defects	<input type="checkbox"/>	<input type="checkbox"/>
P6. Interpret the results	<input type="checkbox"/>	<input type="checkbox"/>
P7. Record the results	<input type="checkbox"/>	<input type="checkbox"/>
P8. Perform pre-cleaning of given ferromagnetic samples.	<input type="checkbox"/>	<input type="checkbox"/>
P9. Select the working mode of the equipment	<input type="checkbox"/>	<input type="checkbox"/>
P10. Apply magnetic field to the specimen	<input type="checkbox"/>	<input type="checkbox"/>
P11. Apply ferromagnetic medium with respect to type of test (Dry or Wet)	<input type="checkbox"/>	<input type="checkbox"/>
P12. Remove the excess ferromagnetic medium.	<input type="checkbox"/>	<input type="checkbox"/>
P13. Interpret the indications.	<input type="checkbox"/>	<input type="checkbox"/>
P14. Evaluate the results.	<input type="checkbox"/>	<input type="checkbox"/>
P15. Perform pre-cleaning of given metallic samples.	<input type="checkbox"/>	<input type="checkbox"/>
P16. Select the working mode of the equipment	<input type="checkbox"/>	<input type="checkbox"/>

P17. Place the specimen on insulator table	<input type="checkbox"/>	<input type="checkbox"/>
P18. Test the specimen as per SOPs	<input type="checkbox"/>	<input type="checkbox"/>
P19. Note the values of resultant current of the coil	<input type="checkbox"/>	<input type="checkbox"/>
P20. Interpret and record the results	<input type="checkbox"/>	<input type="checkbox"/>
P21. Perform pre-cleaning of given samples.	<input type="checkbox"/>	<input type="checkbox"/>
P22. Select the working mode of the equipment	<input type="checkbox"/>	<input type="checkbox"/>
P23. Switch ON the ultrasonic testing equipment	<input type="checkbox"/>	<input type="checkbox"/>
P24. Calibrate the ultrasonic equipment with respect to calibration block	<input type="checkbox"/>	<input type="checkbox"/>
P25. Select the probe according to the specimen	<input type="checkbox"/>	<input type="checkbox"/>
P26. Apply couplant gel on the given specimen	<input type="checkbox"/>	<input type="checkbox"/>
P27. Test the given specimen as per SOPs	<input type="checkbox"/>	<input type="checkbox"/>
P28. Record the graph peaks on the display	<input type="checkbox"/>	<input type="checkbox"/>
P29. Interpret the graph peaks	<input type="checkbox"/>	<input type="checkbox"/>
P30. Record the results	<input type="checkbox"/>	<input type="checkbox"/>
P31. Perform pre-cleaning of given metallic samples.	<input type="checkbox"/>	<input type="checkbox"/>
P32. Select the working mode of the radiographic equipment	<input type="checkbox"/>	<input type="checkbox"/>
P33. Inspect all safety facilities as per standard	<input type="checkbox"/>	<input type="checkbox"/>
P34. Set the position of photographic film	<input type="checkbox"/>	<input type="checkbox"/>
P35. Place the specimen at specific position in front of photographic film	<input type="checkbox"/>	<input type="checkbox"/>
P36. Pass the rays through the specimen	<input type="checkbox"/>	<input type="checkbox"/>
P37. Develop the photographic film	<input type="checkbox"/>	<input type="checkbox"/>
P38. Inspect the image of specimen	<input type="checkbox"/>	<input type="checkbox"/>
P39. Record the results	<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 Non-Destructive Testing
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. Determine the surface defects of specimen using dye penetrant technique • CU2. Determine the defects of given specimen using magnetic particle testing technique • CU3. Determine the defects of metallic specimen using eddy current testing technique • CU4. Determine the defects of specimen using ultrasonic technique • CU5. Determine the defects of given specimen by using radiographic testing technique 		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Perform pre-cleaning of samples			
2.	Apply dye penetrant on the specimen			
3.	Remove the excess dye penetrant			
4.	Apply the developer on the specimen			
5.	Inspect the specimen for defects			
6.	Interpret the results			
7.	Record the results			
8.	Perform pre-cleaning of given ferromagnetic samples.			
9.	Select the working mode of the equipment			
10.	Apply magnetic field to the specimen			
11.	Apply ferromagnetic medium with respect to type of test (Dry or Wet)			
12.	Remove the excess ferromagnetic medium.			
13.	Interpret the indications.			
14.	Evaluate the results.			
15.	Perform pre-cleaning of given metallic samples.			
16.	Select the working mode of the equipment			
17.	Place the specimen on insulator table			
18.	Test the specimen as per SOPs			
19.	Note the values of resultant current of the coil			
20.	Interpret and record the results			
21.	Perform pre-cleaning of given samples.			

22.	Select the working mode of the equipment			
23.	Switch ON the ultrasonic testing equipment			
24.	Calibrate the ultrasonic equipment with respect to calibration block			
25.	Select the probe according to the specimen			
26.	Apply couplant gel on the given specimen			
27.	Test the given specimen as per SOPs			
28.	Record the graph peaks on the display			
29.	Interpret the graph peaks			
30.	Record the results			
31.	Perform pre-cleaning of given metallic samples.			
32.	Select the working mode of the radiographic equipment			
33.	Inspect all safety facilities as per standard			
34.	Set the position of photographic film			
35.	Place the specimen at specific position in front of photographic film			
36.	Pass the rays through the specimen			
37.	Develop the photographic film			
38.	Inspect the image of specimen			
39.	Record the results			
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 Non-Destructive Testing
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 are the types of non destructive testing?		
2.	Where is NDT used?		

3.	What is the difference between destructive and non-destructive testing?		
4.	What are the advantages of using NDT?		

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