



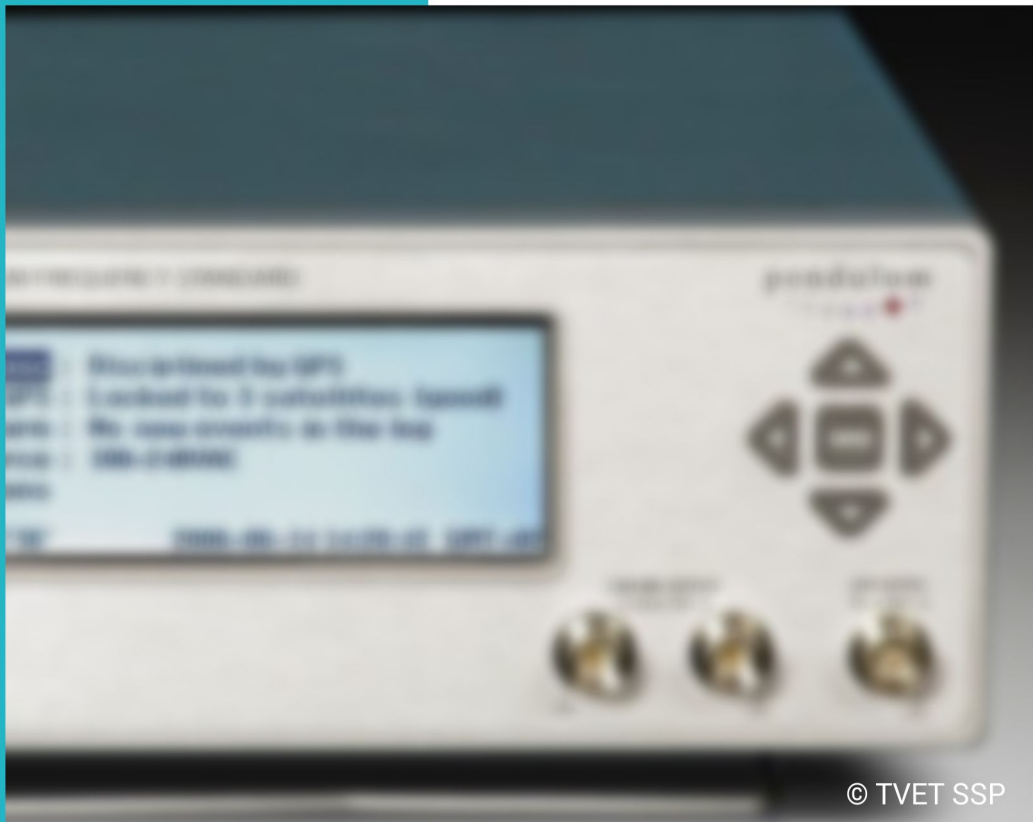
Co-funded by the European Union



Norwegian Embassy
Islamabad



PRECISION INSTRUMENTATION



ASSESSMENT PACKAGE
National Vocational Certificate Level 3

Version 1 - November, 2019



Implemented by

giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

Published by

National Vocational and Technical Training Commission
Government of Pakistan

Headquarter

Plot 38, Kirthar Road, Sector H-9/4, Islamabad, Pakistan
www.navttc.org

Responsible

Director General Skills Standard and Curricula, National Vocational and Technical Training Commission
National Deputy Head, TVET Sector Support Programme, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Layout & design

SAP Communications

Photo Credits

TVET Sector Support Programme

URL links

Responsibility for the content of external websites linked in this publication always lies with their respective publishers. TVET Sector Support Programme expressly dissociates itself from such content.

This document has been produced with the technical assistance of the TVET Sector Support Programme, which is funded by the European Union, the Federal Republic of Germany and the Royal Norwegian Embassy and has been commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ). The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH in close collaboration with the National Vocational and Technical Training Commission (NAVTTTC) as well as provincial Technical Education and Vocational Training Authorities (TEVTAs), Punjab Vocational Training Council (PVTC), Qualification Awarding Bodies (QABs)s and private sector organizations.

Document Version

November, 2019
Islamabad, Pakistan

PRECISION INSTRUMENTATION



© TVET SSP

ASSESSMENT PACKAGE
National Vocational Certificate Level 3

Version 1 - November, 2019

Title of Qualification: National Vocational Certificate level 3 In Light Engineering Sector (Precision Instrumentation)	CS Code:	Level: 3	Version: 1
Competency Standard Title: Ensure Health, hygiene and safety of other individuals at work	Assessment Date (DD/MM/YY):		

Guidance for Candidate	To complete your assessment for this Competency Standard, you need to answer the questions on the following pages successfully.
------------------------	--

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: National Vocational Certificate level 3 In Light Engineering Sector (Precision Instrumentation)	CS Code:	Level: 3	Version: 1
Competency Standard Title: Ensure Health, hygiene and safety of other individuals at work	Assessment Date (DD/MM/YY):		

WRITTEN ASSESSMENT

Question	Candidate's answer
1. Name three special needs that workers may have at the workplace	
2. Name three documents pertaining to health, hygiene and safety at workplace	

Question	Candidate's answer
3. Define risk	
4. Define hazard	
5. What does MSDS stand for?	

Title of Qualification: Precision Instrumentation	CS Code: 0714001033	Level: 3	Version:
Competency Standard Title: Perform Benchwork	Assessment Date (DD/MM/YY):		

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> <ol style="list-style-type: none"> 1. Assessment Task 1: Perform sawing and filing as per drawing given in Annex A 2. Assessment Task 2: Perform hand tapping, counter sinking and counter boring as per given drawing in Annex A <p>And complete:</p> <ol style="list-style-type: none"> 3. Knowledge assessment test (Written or Oral) 4. 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>Assessment Task 1</p> <p>Performance Criteria 1: Apply relevant health and safety requirements during completion of task</p> <p>Performance Criteria 2: Select tools and equipment for the given task</p> <p>Performance Criteria 3: Perform sawing and filing operation as per given drawing</p> <p>Performance Criteria 4: Ensure housekeeping after completion of task</p>
	<p>Assessment Task 2</p> <p>Performance Criteria 1: Apply relevant health and safety requirements during completion of task</p> <p>Performance Criteria 2: Select tools and equipment for the given task</p> <p>Performance Criteria 3: Perform hand taping operation as per given drawing</p> <p>Performance Criteria 4: Perform counter boring operation as per given drawing</p> <p>Performance Criteria 5: Perform counter sinking operation as per given drawing</p> <p>Performance Criteria 6: Ensure housekeeping after completion of task</p>
	<p>Portfolios required at the time of assessment (if any) for</p> <p>Performance criteria 1 for the evaluation of portfolio: Submit note book or practical activity journal, completed during this specific module, for relevant activity with drawing/illustration.</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:.....

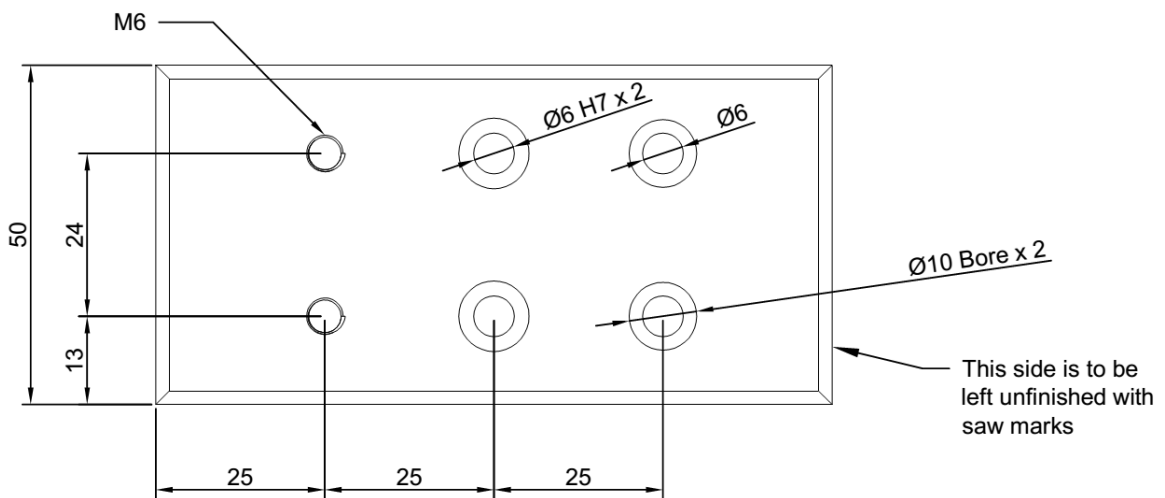
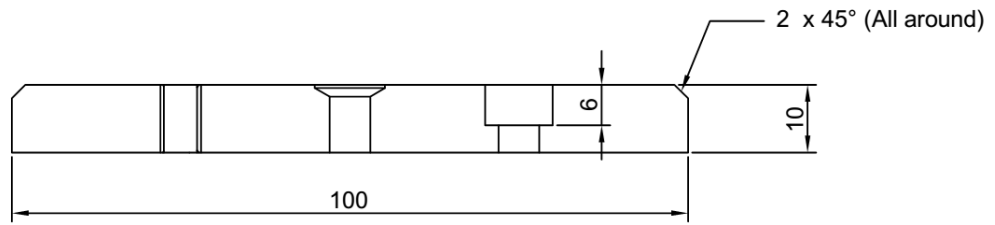
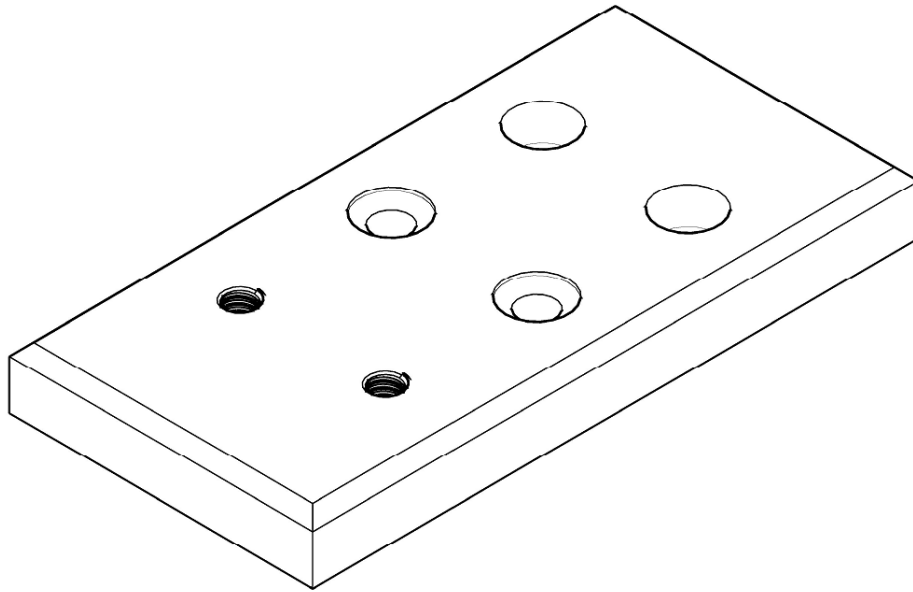
Assessment Summary (to be filled by the assessor)							
Activity	Method					Result	
	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Nature of Activity							
Practical Skill Demonstration			✓				
Knowledge Assessment	✓	✓					
Other Requirement				✓			

Each Assessment Task (with performance criteria)				
Assessment Task 1		Description of assessment task 1 Perform sawing and filing as per drawing given in Annex A		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1: Applied relevant health and safety requirements during completion of task			
2	Performance criteria 2: Selected tools and equipment for the given task			
3	Performance criteria 3: Performed sawing and filing operation as per given drawing			
4	Performance Criteria 4: Ensured housekeeping after completion of task			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 2		Description of assessment task 2 Perform hand tapping, counter sinking and counter boring as per drawing given in Annex A		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1: Applied relevant health and safety requirements during completion of task			
2	Performance criteria 2: Selected tools and equipment for the given task			
3	Performance Criteria 3: Performed hand tapping operation as per given drawing			
4	Performance Criteria 4: Performed counter boring operation as per given drawing			
5	Performance Criteria 5: Performed counter sinking operation as per given drawing			
6	Performance Criteria 6: Ensured housekeeping after completion of task			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Portfolio (if any)		Description of portfolio		
Current <input type="checkbox"/>	Sufficient <input type="checkbox"/>	Authentic <input type="checkbox"/>	Valid <input type="checkbox"/>	Reliable <input type="checkbox"/>
Portfolio meet the following performance standards:		Yes	No	Remarks
1	Performance criteria 1 Submitted log book or activity record (practical journal, project, pictures etc.) completed during the training.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Annexure – A



Note:
General Tolerance = ± 0.1
All dimensions are in mm

Title of Qualification: Precision Instrumentation	CS Code: 0714001034	Level: 3	Version: 1
Competency Standard Title: Fabricate Piping & Tubing System	Assessment Date (DD/MM/YY):		

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>5. Assessment Task 1: Make welded joint through arc welding</p> <p>6. Assessment Task 2: Perform brazing of pipes / tubes.</p> <p>And complete:</p> <p>7. Knowledge assessment test (Written or Oral)</p> <p>8. Portfolios at the time of assessment (if any)</p>
Minimum Evidence Required	<p>During a practical assessment, under observation by an assessor, you will complete:</p> <p>Assessment Task 1</p> <p>Performance Criteria 1: Arrange tools/ equipment/ material as per job requirement.</p> <p>Performance Criteria 2: Ensure safety precautions & use PPEs</p> <p>Performance Criteria 3: Measure pipes as per job requirement</p> <p>Performance Criteria 4: Mark pipes as per job requirement</p> <p>Performance Criteria 5: Cut pipes as per job requirement</p> <p>Performance Criteria 6: Ensure bevel on pipe edges as per standard</p> <p>Performance Criteria 7: Align and fit pipe fittings as per standard.</p> <p>Performance Criteria 8: Adjust electric current for welding plant.</p> <p>Performance Criteria 9: Ensure level of both pipes and keep distance as per required standard</p> <p>Performance Criteria 10: Perform welding</p>
	<p>Assessment Task 2</p> <p>Performance Criteria 1: Arrange tools/ equipment/ material as per job requirement</p> <p>Performance Criteria 2: Ensure safety precautions</p> <p>Performance Criteria 3: Measure pipe/tube as per job requirement</p> <p>Performance Criteria 4: Mark pipe/tube as per job requirement</p> <p>Performance Criteria 5: Cut pipe/tube as per job requirement</p> <p>Performance Criteria 6: Clean pipe/tube surface by emery paper</p> <p>Performance Criteria 7: Perform brazing according to standard</p> <p>Performance Criteria 8: Clean brazing area by emery paper</p>
	<p>Portfolios required at the time of assessment (if any) for</p> <p>Performance criteria for the evaluation of portfolio:</p> <ol style="list-style-type: none"> 1. Submit note book or practical activity journal 2. Certificates/ Experience Letter indicating relevant technical expertise (where applicable) 3. Related work job completed during specific module

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	
	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Nature of Activity							
Practical Skill Demonstration			✓				
Knowledge Assessment	✓	✓					
Other Requirement				✓			
Each Assessment Task (with performance criteria)							
Assessment Task 1			Description of assessment task 1 Make welded joint through arc welding				
During the practical assessment, candidate demonstrated the following:					Yes	No	Remarks
1	Performance Criteria 1: Arranged tools/ equipment/ material as per job requirement						
2	Performance Criteria 2: Ensured safety precautions & use PPE						
3	Performance Criteria 3: Measured pipe as per job requirement						
4	Performance Criteria 4: Marked pipe as per job requirement						
5	Performance Criteria 5: Cut pipe as per job requirement						
6	Performance Criteria 6: Ensured bevel on pipe/edges as per standard						
7	Performance Criteria 7: Aligned and fit pipe fittings as per standard						
8	Performance Criteria 8: Adjusted electric current for welding plant						
9	Performance Criteria 9: Ensured level of both pipes and keep distance as per required standard						
10	Performance Criteria 10: Performed welding						
Competent <input type="checkbox"/>			Not Yet Competent <input type="checkbox"/>				

Assessment Task 2		Description of assessment task 2 Perform brazing of pipe		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance Criteria 1: Arranged tools/ equipment/ material as per job requirement			
2	Performance Criteria 2: Ensured safety precautions			
3	Performance Criteria 3: Measured pipe/tube as per job requirement			
4	Performance Criteria 4: Marked pipe/tube as per job requirement			
5	Performance Criteria 5: Cut pipe/tube as per job requirement			
6	Performance Criteria 6: Cleaned pipe/tube surface by emery paper			
7	Performance Criteria 7: Performed brazing according to standard			
8	Performance Criteria 8: Cleaned brazing area by emery paper			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Portfolio (if any)		Description of portfolio Performance criteria for the evaluation of portfolio		
Current <input type="checkbox"/>		Sufficient <input type="checkbox"/>		Authentic <input type="checkbox"/>
		Valid <input type="checkbox"/>		Reliable <input type="checkbox"/>
Portfolio meet the following performance standards:		Yes	No	Remarks
1	Performance Criteria 1: Submit note book or practical activity journal			
2	Performance Criteria 2: Certificates/ Experience Letter indicating relevant technical expertise (where applicable)			
3	Performance Criteria 3: Related work job completed during specific module			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Title of Qualification: National Vocational Certificate level 3 In Light Engineering Sector (Precision Instrumentation)	CS Code: 0714001034	Level: 3	Version: 1
Competency Standard Title: Fabricate Piping & Tubing System	Assessment Date (DD/MM/YY):		

Guidance for Candidate	To complete your assessment for this Competency Standard, you need to answer the questions on the following pages successfully.
------------------------	--

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: National Vocational Certificate level 3 In Light Engineering Sector (Precision Instrumentation)	CS Code:	Level: 3	Version: 1
Competency Standard Title: Fabricate Piping & Tubing System	Assessment Date (DD/MM/YY):		

WRITTEN ASSESSMENT

Question	Candidate's answer
6. The bending point should be _____ mm from the end of the tube.	
7. Write any 2 type of flanges	

Question	Candidate's answer
8. State 3 types of pipe joints	
9. Name 2 types of flange joints	
10. State difference between soldering and brazing	
11. Define T-joint	
12. MIG welding is the process of gas welding. a) True b) False	

Title of Qualification: Precision Instrumentation	CS Code: 0714001035	Level: 3	Version: 1
Competency Standard Title: Install & Commission Instruments	Assessment Date (DD/MM/YY):		

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>9. Assessment Task 1: Install & Commission Pressure Instruments 10. Assessment Task 2: Re-commission Process Loop</p> <p>And complete:</p> <p>11. Knowledge assessment test (Written or Oral) 12. Portfolios at the time of assessment (if any)</p>
Minimum Evidence Required	<p>During a practical assessment, under observation by an assessor, you will complete:</p>
	<p>Assessment Task 1</p> <p>Performance Criteria 1: Perform site/workspace inspection as per drawing Performance Criteria 2: Analyse process instrument to be installed. Performance Criteria 3: Apply standard techniques necessary for installation procedures as per manual. Performance Criteria 4: Inspect installed components for damage. Performance Criteria 5: Ensure that the installed instrument is intact and working properly Performance Criteria 6: Generate an output report as per standard Performance Criteria 7: Ensure housekeeping and safe working practices at all time.</p>
	<p>Assessment Task 2</p> <p>Performance Criteria 1: Make visual inspection for faults in the system Performance Criteria 2: Verify installation as per SOPs. Performance Criteria 3: Ensure that the connections/ terminations are secure Performance Criteria 4: Perform test run Performance Criteria 5: Perform sensory inspection Performance Criteria 6: Verify accurate signal transmission for satisfactory measurement and transmission Performance Criteria 7: Identify modifications and improvements required in the system Performance Criteria 8: Validate specification & procedure as per manual/ SOP Performance Criteria 9: Finalize documentation and report to relevant personnel.</p>

	<p>Portfolios required at the time of assessment (if any) for</p> <p>Performance criteria for the evaluation of portfolio:</p> <ol style="list-style-type: none">4. Submit notebook or practical activity journal5. Certificates/ Experience Letter indicating relevant technical expertise (where applicable)6. Related work job completed during specific module
--	---

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	
	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Nature of Activity							
Practical Skill Demonstration			✓				
Knowledge Assessment	✓	✓					
Other Requirement				✓			
Each Assessment Task (with performance criteria)							
Assessment Task 1			Description of assessment task 1 Install & Commission Pressure Instruments				
During the practical assessment, candidate demonstrated the following:					Yes	No	Remarks
1	Performance criteria 1: Performed site/workspace inspection as per drawing						
2	Performance Criteria 2: Analysed process instrument to be installed.						
3	Performance Criteria 3: Applied standard techniques necessary for installation procedures as per manual.						
4	Performance Criteria 4: Inspect installed components for damage.						
5	Performance Criteria 5: Ensured that the installed instrument is intact and working properly						
6	Performance Criteria 6: Generated an output report as per standard						
7	Performance Criteria 7: Ensured good housekeeping and safe working practices at all time.						
Competent <input type="checkbox"/>			Not Yet Competent <input type="checkbox"/>				

Assessment Task 2		Description of assessment task 2 Re-commission Process Loop		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1: Make visual inspection for faults in the system			
2	Performance Criteria 2: Verify installation as per SOPs.			
3	Performance Criteria 3: Ensure that the connections/ terminations are secure			
4	Performance Criteria 4: Perform test run			
5	Performance Criteria 5: Perform sensory inspection			
6	Performance Criteria 6: Verify accurate signal transmission for satisfactory measurement and transmission			
7	Performance Criteria 7: Identify modifications and improvements required in the system			
8	Performance Criteria 8: Validate specification & procedure as per manual/ SOP			
9	Performance Criteria 9: Finalize documentation and report to relevant personnel			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Portfolio (if any)		Description of portfolio Performance criteria for the evaluation of portfolio		
Current <input type="checkbox"/>		Sufficient <input type="checkbox"/>		Authentic <input type="checkbox"/>
		Valid <input type="checkbox"/>		Reliable <input type="checkbox"/>
Portfolio meet the following performance standards:		Yes	No	Remarks
1	Performance Criteria 1: Submit notebook or practical activity journal			
2	Performance Criteria 2: Certificates/ Experience Letter indicating relevant technical expertise (where applicable)			
3	Performance Criteria 3: Related work job completed during specific module			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Title of Qualification: Precision Instrumentation	CS Code: 0714001035	Level: 3	Version: 1
Competency Standard Title: Install & Commission Instruments	Assessment Date (DD/MM/YY):		

Guidance for Candidate	To complete your assessment for this Competency Standard, you need to answer the questions on the following pages successfully.
------------------------	--

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: Precision Instrumentation	CS Code:	Level: 3	Version: 1
Competency Standard Title: Install & Commission Instruments	Assessment Date (DD/MM/YY):		

WRITTEN ASSESSMENT

Question	Candidate's answer
13. The _____ of a vapor pressure thermometer is a functioning element. a) bulb b) pointer c) bourdon tube d) none of these	

Question	Candidate's answer
<p>14. Flapper nozzle is used in a _____ controller.</p> <p>a) electronic b) hydraulic c) pneumatic d) none of these</p>	
<p>15. The temperature of tempering oil baths maintained at 400°C during heat treatment of steel is measured by a/an _____ thermocouple.</p> <p>a) iron-constantan b) chromel-alumel c) platinum-platinum/rhodium d) None of these</p>	
<p>16. Which of the following is the dynamic characteristics of an instrument?</p> <p>a) Sensitivity b) Dead zone c) Reproducibility d) Fidelity</p>	
<p>17. Working principle of radiation pyrometer is based on the</p> <p>a) Kirchhoff's law b) Wien's law c) Stefan-Boltzman law d) Seebeck effect</p>	
<p>18. A measuring system consists of</p> <p>a) Sensors b) Variable conversion elements c) Signal processing elements d) All of these</p>	
<p>19. All Level Transmitters to be checked only with water</p> <p>a) True b) False</p>	
<p>20. Name two types of pressure.</p>	

Title of Qualification: Precision Instrumentation	CS Code: 0714001036	Level: 3	Version: 1
Competency Standard Title: Calibrate Instruments	Assessment Date (DD/MM/YY):		

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>13. Assessment Task 1: Calibrate Temperature Instruments 14. Assessment Task 2: Calibrate Pressure Instruments</p> <p>And complete:</p> <p>15. Knowledge assessment test (Written or Oral) 16. Portfolios at the time of assessment (if any)</p>
Minimum Evidence Required	<p>During a practical assessment, under observation by an assessor, you will complete:</p> <p>Assessment Task 1</p> <p>Performance Criteria 1: Plan and organize standard/master calibrator necessary for calibration.</p> <p>Performance Criteria 2: Prepare standard/master calibrator necessary for calibration</p> <p>Performance Criteria 3: Check and verify instrument reliability or any damage.</p> <p>Performance Criteria 4: Ensure proper working of temperature calibration apparatus.</p> <p>Performance Criteria 5: Install and set-up standard/master calibrator required for calibration activities (i.e. software/hardware)</p> <p>Performance Criteria 6: Perform calibration tasks as per standards.</p> <p>Performance Criteria 7: Verify performance of instrument as per reference standards prior to use and adjust calibrate if necessary.</p> <p>Performance Criteria 8: Document test results as per SOP</p> <p>Performance Criteria 9: Ensure good housekeeping & safe working practices at all times</p>

	<p>Assessment Task 2</p> <p>Performance Criteria 1: Plan and organize standard/master calibrator necessary for calibration.</p> <p>Performance Criteria 2: Prepare standard/master calibrator necessary for calibration</p> <p>Performance Criteria 3: Check and verify instrument reliability or any damage.</p> <p>Performance Criteria 4: Ensure proper working of temperature calibration apparatus.</p> <p>Performance Criteria 5: Install and set-up standard/master calibrator required for calibration activities (i.e. software/hardware)</p> <p>Performance Criteria 6: Perform calibration tasks as per standards.</p> <p>Performance Criteria 7: Verify performance of instrument as per reference standards prior to use and adjust calibrate if necessary.</p> <p>Performance Criteria 8: Document test results as per SOP</p> <p>Performance Criteria 9: Ensure good housekeeping & safe working practices at all times</p>
	<p>Portfolios required at the time of assessment (if any) for</p> <p>Performance criteria for the evaluation of portfolio:</p> <ol style="list-style-type: none"> 7. Submit note book or practical activity journal 8. Certificates/ Experience Letter indicating relevant technical expertise (where applicable) 9. Related work job completed during specific module

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 Calibrate Temperature Instruments				
During the practical assessment, candidate demonstrated the following:					Yes	No	Remarks
1	Performance criteria 1: Planed and organized standard/master calibrator necessary for calibration.						
2	Performance criteria 2: Prepared standard/master calibrator necessary for calibration						
3	Performance Criteria 3: Checked and verify instrument reliability or any damage.						
4	Performance Criteria 4: Ensured proper working of temperature calibration apparatus.						
5	Performance Criteria 5: Installed and set-up standard/master calibrator required for calibration activities (i.e. software/hardware)						
6	Performance Criteria 6: Performed calibration tasks as per standards.						
7	Performance Criteria 7: Verified performance of instrument as per reference standards prior to use and adjust calibrate if necessary.						
8	Performance Criteria 8: Documented test results as per SOP						
9	Performance Criteria 9: Ensured good housekeeping & safe working practices at all times						
Competent <input type="checkbox"/>			Not Yet Competent <input type="checkbox"/>				

Assessment Task 2		Description of assessment task 2 Calibrate Pressure Instruments		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1: Planed and organized standard/master calibrator necessary for calibration.			
2	Performance Criteria 2: Prepared standard/master calibrator necessary for calibration			
3	Performance Criteria 3: Checked and verify instrument reliability or any damage.			
4	Performance Criteria 4: Ensured proper working of temperature calibration apparatus.			
5	Performance Criteria 5: Installed and set-up standard/master calibrator required for calibration activities (i.e. software/hardware)			
6	Performance Criteria 6: Performed calibration tasks as per standards.			
7	Performance Criteria 7: Verified performance of instrument as per reference standards prior to use and adjust calibrate if necessary.			
8	Performance Criteria 8: Documented test results as per SOP			
9	Performance Criteria 9: Ensured good housekeeping & safe working practices at all times			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Portfolio (if any)		Description of portfolio Performance criteria for the evaluation of portfolio		
Current <input type="checkbox"/>	Sufficient <input type="checkbox"/>	Authentic <input type="checkbox"/>	Valid <input type="checkbox"/>	Reliable <input type="checkbox"/>
Portfolio meet the following performance standards:		Yes	No	Remarks
1	Performance Criteria 1: Submit note book or practical activity journal			
2	Performance Criteria 2: Certificates/ Experience Letter indicating relevant technical expertise (where applicable)			
3	Performance Criteria 3: Related work job completed during specific module			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Title of Qualification: Precision Instrumentation	CS Code: 0714001036	Level: 3	Version: 1
Competency Standard Title: Calibrate Instruments	Assessment Date (DD/MM/YY):		

Guidance for Candidate	To complete your assessment for this Competency Standard, you need to answer the questions on the following pages successfully.
------------------------	--

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: Precision Instrumentation	CS Code:	Level: 3	Version: 1
Competency Standard Title: Calibrate Instruments	Assessment Date (DD/MM/YY):		

WRITTEN ASSESSMENT

Question	Candidate's answer
21. What instrument is used to re-calibrate pressure gauge? a) Dead weight tester b) Manometer c) Level gauge d) None of them	
22. What is calibration?	

Question	Candidate's answer
23. What is mean by range of an instrument?	
24. What is resolution?	
25. Accuracy of an measuring instrument indicates the a) Closeness of the output reading to the true value b) Ratio of output value to the input value c) Change in output with each change in input d) Degree of freedom from random errors	
26. The absolute difference between the highest and lowest range-limit is the range of an instrument? a) True b) False	

Title of Qualification: Precision Instrumentation	CS Code:	Level: 3	Version: 1
Competency Standard Title: Integrated Evidence Guide	Assessment Date (DD/MM/YY):		

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>17. Assessment Task 1: Fabricate mounting plate using drilling, sawing operation. Bend a tube according to drawing and braze on the drilled hole.</p> <p>18. Assessment Task 2: Calibrate pressure instrument using master calibrator and Install calibrated instrument.</p> <p>And complete:</p> <p>19. Knowledge assessment test (Written or Oral)</p> <p>20. Portfolios at the time of assessment (if any)</p>
Minimum Evidence Required	<p>During a practical assessment, under observation by an assessor, you will complete:</p> <p>Assessment Task 1</p> <p>Performance Criteria 1: Select appropriate tools / equipment as per job requirement</p> <p>Performance Criteria 2: Ensure safety precautions & use PPEs</p> <p>Performance Criteria 3: Select appropriate marking tool and mark the job as per drawing</p> <p>Performance Criteria 4: Perform sawing as per standard procedures</p> <p>Performance Criteria 5: Perform drilling operation as per standard procedure</p> <p>Performance Criteria 6: Perform bending operation as per given job</p> <p>Performance Criteria 7: Perform brazing operation as per standard procedure</p> <p>Performance Criteria 8: Ensure good housekeeping and safe working practices at all time</p>
	<p>Assessment Task 2</p> <p>Performance Criteria 1: Select standard/master calibrator necessary for calibration</p> <p>Performance Criteria 2: Prepare standard/master calibrator necessary for calibration</p> <p>Performance Criteria 3: Ensure proper working of pressure calibration apparatus.</p> <p>Performance Criteria 4: Install and set-up standard/master calibrator required for calibration activities (i.e. software/hardware)</p> <p>Performance Criteria 5: Perform calibration tasks as per standards.</p> <p>Performance Criteria 6: Verify performance of instrument as per reference standards prior to use and adjust calibrate if necessary.</p> <p>Performance Criteria 7: Read drawing for installation of calibrated instrument</p> <p>Performance Criteria 8: Apply standard techniques necessary for installation</p> <p>Performance Criteria 9: Ensure that the installed instrument is intact and working properly</p> <p>Performance Criteria 10: Ensure good housekeeping & safe working practices at all times</p>

	<p>Portfolios required at the time of assessment (if any) for</p> <p>Performance criteria for the evaluation of portfolio:</p> <ol style="list-style-type: none">10. Submit note book or practical activity journal11. Certificates/ Experience Letter indicating relevant technical expertise (where applicable)12. Related work job completed during specific module
--	---

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	
	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Nature of Activity							
Practical Skill Demonstration			✓				
Knowledge Assessment	✓	✓					
Other Requirement				✓			
Each Assessment Task (with performance criteria)							
Assessment Task 1			Description of assessment task 1 Fabricate mounting plate using drilling, sawing operation. Bend a tube according to drawing and braze on the drilled hole.				
During the practical assessment, candidate demonstrated the following:					Yes	No	Remarks
1	Performance Criteria 1: Selected appropriate tools / equipment as per job requirement						
2	Performance Criteria 2: Ensured safety precautions & use PPEs						
3	Performance Criteria 3: Selected appropriate marking tool and mark the job as per drawing						
4	Performance Criteria 4: Performed sawing as per standard procedures						
5	Performance Criteria 5: Performed drilling operation as per standard procedure						
6	Performance Criteria 6: Performed bending operation as per given job						
7	Performance Criteria 7: Performed brazing operation as per standard procedure						
8	Performance Criteria 8: Ensured good housekeeping and safe working practices at all time						
Competent <input type="checkbox"/>				Not Yet Competent <input type="checkbox"/>			

Assessment Task 2		Description of assessment task 2 Calibrate pressure instrument using master calibrator and Install calibrated instrument.		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance Criteria 1: Selected standard/master calibrator necessary for calibration			
2	Performance Criteria 2: Prepared standard/master calibrator necessary for calibration			
3	Performance Criteria 3: Ensured proper working of pressure calibration apparatus.			
4	Performance Criteria 4: Installed and set-up standard/master calibrator required for calibration activities (i.e. software/hardware)			
5	Performance Criteria 5: Performed calibration tasks as per standards.			
6	Performance Criteria 6: Verified performance of instrument as per reference standards prior to use and adjust calibrate if necessary.			
7	Performance Criteria 7: Read drawing for installation of calibrated instrument			
8	Performance Criteria 8: Applied standard techniques necessary for installation			
9	Performance Criteria 9: Ensured that the installed instrument is intact and working properly			
10	Performance Criteria 10: Ensured good housekeeping & safe working practices at all times			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Portfolio (if any)		Description of portfolio Performance criteria for the evaluation of portfolio		
Current <input type="checkbox"/>		Sufficient <input type="checkbox"/>		Authentic <input type="checkbox"/>
		Valid <input type="checkbox"/>		Reliable <input type="checkbox"/>
Portfolio meet the following performance standards:		Yes	No	Remarks
1	Performance Criteria 1: Submit note book or practical activity journal			
2	Performance Criteria 2: Certificates/ Experience Letter indicating relevant technical expertise (where applicable)			
3	Performance Criteria 3: Related work job completed during specific module			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

WRITTEN ASSESSMENT

Question	Candidate's answer
27. Least count of Vernier caliper ?	
28. What material is used of cutting blade use for mild steel?	
29. Where we apply micrometer?	
30. With the help of annealing process we can harden the material? a) YES b) NO	
31. Calibration can be performed with the help of calibrator and master reference gauge ? a) YES b) NO	
32. What should be the direction of teeth of hacksaw blade while sawing?	
33. The _____ of a vapor pressure thermometer is a functioning element. a) bulb b) pointer c) bourdon tube d) none of these	
34. All Level Transmitters to be checked only with water a) True b) False	

