



QUALIFICATION FILE

Assistant Instrumentation Mechanic (Metal Sector)

- ☒ Short Term Training (STT) ☐ Long Term Training (LTT) ☒ Apprenticeship
☐ Upskilling ☐ Dual/Flexi Qualification ☒ For ToT ☒ For ToA

☒ General ☒ Multi-skill (MS) ☐ Cross Sectoral (CS) ☐ Future Skills ☐ OEM

NCrF/NSQF Level: 3

Submitted By:

Indian Iron and Steel Sector Skill Council (IISSC)

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Section 1: Basic Details

1.	Qualification Name	Assistant Instrumentation Mechanic (Metal Sector)																			
2.	Sector/s	Iron and Steel																			
3.	Type of Qualification: ☐ New ☒ Revised ☐ Has Electives/Options ☐ OEM	NQR Code & version of existing/previous qualification: 2022/IS/ISSSC/06819 / v4.0	Qualification Name of existing/previous version: Assistant Instrumentation Mechanic (Metal Sector) / v5.0																		
4.	a. OEM Name b. Qualification Name (Wherever applicable)	NA																			
5.	National Qualification Register (NQR) Code & Version (Will be issued after NSQC approval)	QG-03-IS-03881-2025-V2-ISSSC	6. NCrF/NSQF Level: 3																		
7.	Award (Certificate/Diploma/Advance Diploma/ Any Other) (Wherever applicable specify multiple entry/exits also & provide details in annexure)	Certificate																			
8.	Brief Description of the Qualification	The individual in this role performs installation, maintenance, testing and calibration of measuring and control equipment.																			
9.	Eligibility Criteria for Entry for Student/Trainee/Learner/Employee	a. Entry Qualification & Relevant Experience: <table border="1"> <thead> <tr> <th>S. No.</th> <th>Academic/Skill Qualification (with Specialization - if applicable)</th> <th>Required Experience (with Specialization - if applicable)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>10th Class</td> <td></td> </tr> <tr> <td>2</td> <td>9th Class</td> <td>1.5 year experience in relevant field</td> </tr> <tr> <td>3</td> <td>8th class with 2year NTC/NAC in relevant field</td> <td></td> </tr> <tr> <td>4</td> <td>8th Class</td> <td>3 years of experience in relevant field</td> </tr> <tr> <td>5</td> <td>5th Class</td> <td>7.5 years of experience in relevant field</td> </tr> </tbody> </table> b. Age: 18 years		S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)	1	10 th Class		2	9 th Class	1.5 year experience in relevant field	3	8 th class with 2year NTC/NAC in relevant field		4	8 th Class	3 years of experience in relevant field	5	5 th Class	7.5 years of experience in relevant field
S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)																			
1	10 th Class																				
2	9 th Class	1.5 year experience in relevant field																			
3	8 th class with 2year NTC/NAC in relevant field																				
4	8 th Class	3 years of experience in relevant field																			
5	5 th Class	7.5 years of experience in relevant field																			
10.	Credits Assigned to this Qualification, Subject to Assessment (as per National Credit Framework (NCrF))	14	11. Common Cost Norm Category (I/II/III) (wherever applicable): I																		

12.	Any Licensing requirements for Undertaking Training on This Qualification (<i>wherever applicable</i>)	NA																						
13.	Training Duration by Modes of Training Delivery (<i>Specify Total Duration as per selected training delivery modes and as per requirement of the qualification</i>)	☒ Offline ☐ Online ☐ Blended <table border="1"> <thead> <tr> <th>Training Delivery Modes</th> <th>Theory (Hours)</th> <th>Practical (Hours)</th> <th>OJT Mandatory (Hours)</th> <th>OJT Recommended (Hours)</th> <th>Total (Hours)</th> </tr> </thead> <tbody> <tr> <td>Classroom (offline)</td> <td>132:00</td> <td>228:00</td> <td>60:00</td> <td></td> <td>420</td> </tr> <tr> <td>Online</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <i>(Refer Blended Learning Annexure for details)</i>					Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)	Classroom (offline)	132:00	228:00	60:00		420	Online					
Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)																			
Classroom (offline)	132:00	228:00	60:00		420																			
Online																								
14.	Aligned to NCO/ISCO Code/s (<i>if no code is available mention the same</i>)	NCO-2015/7311.0401																						
15.	Progression path after attaining the qualification (<i>Please show Professional and Academic progression</i>)	Junior Supervisor - Mechanic - Instrumentation (Level-3.5)																						
16.	Other Indian languages in which the Qualification & Model Curriculum are being submitted	Hindi																						
17.	Is similar Qualification(s) available on NQR-if yes, justification for this qualification	☐ Yes ☒ No URLs of similar Qualifications:																						
18.	Is the Job Role Amenable to Persons with Disability	☐ Yes ☒ No If "Yes", specify applicable type of Disability:																						
19.	How Participation of Women will be Encouraged	No gender sensitization																						
20.	Are Greening/ Environment Sustainability Aspects Covered (<i>Specify the NOS/Module which covers it</i>)	☐ Yes ☒ No																						
21.	Is Qualification Suitable to be Offered in Schools/Colleges	Schools ☒ Yes ☐ No Colleges ☒ Yes ☐ No																						
22.	Name and Contact Details of Submitting / Awarding Body SPOC (<i>In case of CS or MS, provide details of both Lead AB & Supporting ABs</i>)	Name: Mr. Sushim Banerjee Email: ceo@iissc.org/ sushim_banerjee@yahoo.com Contact No.: 033-23247559 Website: https://www.iissc.org																						
23.	Final Approval Date by NSQC: 01/04/2025	24. Validity Duration: 3 Years			25. Next Review Date: 31/03/2028																			

Section 2: Module Summary

NOS/s of Qualifications

(In exceptional cases these could be described as components)

Mandatory NOS/s:

Specify the training duration and assessment criteria at NOS/ Module level. For further details refer curriculum document.

Th.-Theory **Pr.**-Practical **OJT**-On the Job **Man.**-Mandatory Training **Rec.**-Recommended **Proj.**-Project

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/ Non-Core	NCrF/NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) (if applicable)
1.	Use basic health and safety practices at the work place	ISC/N0008, v5.0	Non-Core	3	2	25	35	00		60	30	50	00	20	100	10
2.	Work effectively with others	ISC/N0009, v5.0	Non-Core	3	1	10	20	00		30	30	50	00	20	100	10
3.	Carry out maintenance of measuring and control equipment	ISC/N1102, v5.0	Core	3	3	40	50	00		90	30	50	00	20	100	35
4.	Perform inspection and calibration of measuring equipment	ISC/N1103, v5.0	Core	3	5	45	105	00		150	30	50	00	20	100	35
5.	Employability Skills (30 Hours)	DGT/VSQ/N0101	Non-core	2	1	12	18	00		30	20	30	00	00	50	10
6.	OJD		Core		2			60		60						
Duration (in Hours) / Total Marks						14	132	228	60	420	140	230	00	80	450	100

Elective NOS/s:

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/ Non-Core	NCrF/NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) (if applicable)
1.																
2.																
Duration (in Hours) / Total Marks																

Optional NOS/s:

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/ Non-Core	NCrF/NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) (if applicable)
1.																
2.																
Duration (in Hours) / Total Marks																

Assessment - Minimum Qualifying Percentage

Please specify **any one** of the following:

Minimum Pass Percentage – Aggregate at qualification level: 70 % (Every Trainee should score specified minimum aggregate passing percentage at qualification level to successfully clear the assessment.)

Minimum Pass Percentage – NOS/Module-wise: ____% (Every Trainee should score specified minimum passing percentage in each mandatory and selected elective NOS/Module to successfully clear the assessment.)

Section 3: Training Related

1.	Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)	ITI (In stream related to Electrical or Electronics) with 5 years experience in industry and 1 year of training experience in Fitter Instrumentation Or Diploma (Electrical/Electronics Engineering) with 3 years experience in industry and Maintenance and 1 year of training experience in Technician Instrumentation
2.	Master Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)	B.Tech (Mechanical) with 3 years experience in industry and 1 year of training experience in Fitter Instrumentation
3.	Tools and Equipment Required for Training	☒ Yes ☐ No (If "Yes", details to be provided in Annexure)
4.	In Case of Revised Qualification, Details of Any Upskilling Required for Trainer	

Section 4: Assessment Related

1.	Assessor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	ITI (In stream related to Electrical or Electronics) with 5 years experience in industry and 1 year of assessment experience in Fitter Instrumentation Or Diploma (Electrical/Electronics Engineering) with 3 years experience in industry and 1 year of assessment experience in Technician Instrumentation
2.	Proctor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	B.Tech (Mechanical) with 5 years experience in industry and 2 year of assessment experience in Technician Instrumentation
3.	Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	B.Tech (Mechanical) with 5 years experience in industry and 2 year of assessment experience in Technician Instrumentation
4.	Assessment Mode (Specify the assessment mode)	Offline
5.	Tools and Equipment Required for Assessment	☒ Same as for training ☐ Yes ☐ No (details to be provided in Annexure-if it is different for Assessment)

Section 5: Evidence of the need for the Qualification

Provide Annexure/Supporting documents name.

1.	Latest Skill Gap Study (not older than 2 years) (Yes/No): Yes
2.	Latest Market Research Reports or any other source (not older than 2 years) (Yes/No): Yes
3.	Government /Industry initiatives/ requirement (Yes/No): Yes
4.	Number of Industry validation provided: 20
5.	Estimated nos. of persons to be trained and employed: 500
6.	Evidence of Concurrence/Consultation with Line Ministry/State Departments: In progress If "No", why:

Section 6: Annexure & Supporting Documents Check List

Specify Annexure Name / Supporting document file name

1.	Annexure: NCrf/NSQF level justification based on NCrf level/NSQF descriptors (Mandatory)	Attached
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2.	Annexure: List of tools and equipment relevant for qualification (Mandatory, except in case of online course)	Attached
3.	Annexure: Detailed Assessment Criteria (Mandatory)	Attached
4.	Annexure: Assessment Strategy (Mandatory)	Attached
5.	Annexure: Blended Learning (Mandatory, in case selected Mode of delivery is "Blended Learning")	NA
6.	Annexure: Multiple Entry-Exit Details (Mandatory, in case qualification has multiple Entry-Exit)	Filled
7.	Annexure: Acronym and Glossary (Optional)	
8.	Supporting Document: Model Curriculum (Mandatory – Public view)	Attached
9.	Supporting Document: Career Progression (Mandatory - Public view)	Attached
10.	Supporting Document: Occupational Map (Mandatory)	Attached
11.	Supporting Document: Assessment SOP (Mandatory)	Attached
12.	Any other document you wish to submit:	

Annexure: Evidence of Level

NCRf/NSQF Level Descriptors	Key requirements of the job role/ outcome of the qualification	How the job role/ outcomes relate to the NCRf/NSQF level descriptor	NCRf/NSQF Level
Professional Theoretical Knowledge/Process	Installing, dismantling, removing, replacing a range of components down to subassembly level right from pick-up unit / point of measurement and linking either directly to the instrument or to the instrument panel. This also involves making suitable slot on panel and fixing instrument and its associated parts under supervision of Technician Instrumentation	The job involves a range of theoretical understanding and practical skills as can be seen from the job requirements given in the adjacent cell. The skills include setting, adjusting and operating the assistant instrumentation mechanic in the given parameters	3
Professional and Technical Skills/ Expertise/ Professional Knowledge	Knowledge related to workshop and plant terminology, basic measurements, basics of instrumentation assembly	As indicated by the knowledge and understanding requirements mentioned in the adjacent cell, the job holder needs to have a wide range of information for assistant instrumentation mechanic.	3
Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill	- Attaching utmost importance to safety and housekeeping, maintenance and assembling of instrumentation equipment - Perform the operational/function checks	As indicated by the performance criteria in the adjacent cell, the job holder needs to have wide-ranging practical skills for assistant instrumentation mechanic.	3

	- Carry out relevant documentation manually and/or electronically - Operate assistant instrumentation mechanic		
Broad Learning Outcomes/Core Skill	Logical and mathematical skills - Follow the technical specification and appropriate procedures. - Perform work-related calculations - Use the standard templates and tools for documenting work	The job holder requires logical and relevant skills for conducting assistant instrumentation mechanic. As indicated by the performance criteria in the adjacent cell, the job involves assistant instrumentation mechanic	3
Responsibility	- Responsible for determining the work requirements. - Responsible for planning the assistant instrumentation mechanic - Responsible for process parameters. - Responsible for preparing and updating the relevant documents.	The incumbent on the job roles carrying out assistant instrumentation mechanic, sample collections, collecting the reports from the lab and documenting the same	3

Annexure: Tools and Equipment (Lab Set-Up)

List of Tools and Equipment

Batch Size: 30

S. No.	Tool / Equipment Name	Specification	Quantity for specified Batch size
1	drill bits	As per requirement	5
2	wire brushes	As per requirement	5
3	calipers (assorted) desoldering tool diagonal cutters	As per requirement	5
4	flashlight	As per requirement	5
5	fuse puller	As per requirement	5
6	gasket cutter	As per requirement	5
7	gauge pointer puller	As per requirement	2
8	grease gun	As per requirement	2
9	hammers (assorted)	As per requirement	2
10	hand files (assorted)	As per requirement	2
11	knock-out punches level	As per requirement	2
12	nut drivers (assorted) o-ring picks	As per requirement	5
13	packing puller pipe threader pliers (assorted) pry bar	As per requirement	5
14	punches (assorted) reamers	As per requirement	5

15	rubber mallet	As per requirement	5
16	saws (assorted)	As per requirement	5
17	screw starters screwdrivers (assorted) scribes	As per requirement	5
18	sockets (Imperial/Metric) square	As per requirement	5
19	steel rule	As per requirement	10
20	strap wrenches	As per requirement	5
21	tap and die set torch	As per requirement	5
22	torque wrench tube benders tube cutters tweezers	As per requirement	5
23	wire crimpers	As per requirement	5
24	wire cutters	As per requirement	5
25	air compressor band saw cut-off saw drill press grinders hammer drill heat gun	As per requirement	1
26	hydraulic knock-out punch	As per requirement	2
27	impact wrench	As per requirement	5
28	jig saw	As per requirement	5
29	pipe threader	As per requirement	5
30	soldering iron	As per requirement	5
31	wire labeler	As per requirement	3
32	micrometers (assorted)	As per requirement	5
33	tube cutters	As per requirement	5
34	calipers (assorted)	As per requirement	5
35	measuring tape	As per requirement	5
36	tap and die set	As per requirement	5
37	tube benders	As per requirement	5
38	Pressure Guage	As per requirement	1
39	Master Guage	As per requirement	1
40	Pressure Transmitter	As per requirement	1
41	DP Transmitter	As per requirement	2
42	Fix resistance box	As per requirement	2
43	Temperature Bath	As per requirement	1
44	Temperature Sensor	As per requirement	3
45	Temperature Trasmitter	As per requirement	2
46	Air Regulator with needle valve	As per requirement	1
47	Pressure comparator	As per requirement	1
48	Single phase motor	As per requirement	2
49	Air filter connector	As per requirement	5
50	Conduit	As per requirement	1

Classroom Aids

The aids required to conduct sessions in the classroom are:

1. Whiteboard and Marker
2. Projector
3. Computer/Laptop
4. Chairs
5. Tables
6. Whiteboard marker

Annexure: Industry Validations Summary

Provide the summary information of all the industry validations in table. This is not required for OEM qualifications.

S. No	Organization Name	Representative Name	Designation	Contact Address	Contact Phone No	E-mail ID	LinkedIn Profile (if available)
1	Tata Steel Ltd.	Mr. Amit Khanna	Head IEM, Mills & Utilities (Electrical Maintenance)	P.O. - Bistupur, Jamshedpur, Pin – 831001, Jharkhand			
2	SAIL BSL	Mr. Malay Nandi	Deputy General Manager	Bokaro Steel Plant Bokaro – 827001, Jharkhand			
3	SAIL DGP	Mr. Soumitra Ghosh	Deputy General Manager - Electrical	Durgapur Steel Plant Durgapur – 713203 West Bengal			
4	JSW Bellary	Mr. Ajay Bihari	Head HR	Vijayanagar Works: P.O. Vidyanagar, Toranagallu Village, Sandur Taluk Bellary District - 583275 Karnataka			
5	JSPL	Mr. Sanjay Gupta	Head HR	Kharsia Road, Raigarh, Pin - 496001, Chhattisgarh			
6	Essar Steel	Mr. Sarosh Gandhi	Sr. Manager -HR	27th KM, SuratHazira Road District – Surat, Hazira, Pin - 394 270, Gujarat			
7	RohitFerrotech Ltd.	Mr. Jayanta Chatterjee	Director	Bhunja Raichak, Joynagar, P.S. DurgaChak, Dist. East Medinipur, Haldia, West Bengal			
8	Ankit Metal and Power Ltd	Mr. Avik Mukherjee	Chief HR	35, Chittranjan Avenue, Kolkata – 700012			

9	Godawari Power & Ispat (GPIL)	Mr. Shailendra Mishra	Dy CEO	428/2, Phase-I, Industrial Area, Siltara – 493111 Dist. Raipur, Chhattisgarh,			
10	Arcvac Forgecast Ltd	Mr. Binod Chhajer	MD	2B, Shyamkunj, 2nd floor 12 C, Lord Sinha Road Post Box: 9210 Kolkata - 700071			
11	Tayo Rolls Limited	Mr. Abhijit Mitra	VP - Marketing	Annex – 2, General Office, Tata Steel Limited, P.O. & P.S. – Bistupur, Jamshedpur 831001, Dist: East Singhbhum, Jharkhand			
12	Kejriwal Castings	Mr. Subhasis Chatterjee	General Manager (Projects)	33A, Chowringhee Road Chatterjee International Centre 11th Floor, Suite No. 11 Kolkata 700071			
13	Vizag Steel Plant (RINL)	Mr. D N Rao	Director Operations	Engineering Shops And Foundry, Visakhapatnam Steel Plant, Visakhapatnam - 530032			
14	Tata Metaliks Ltd.	Ms. Ratna Sinha	Chief HRM	Tata Centre, 10th Floor 43 Jawaharlal Nehru Road Kolkata - 700071 West Bengal			
15	Sesa Goa Ltd	Mr. Vijay Khanzode	GM & Head PIDII	Queeny Elite, 1st Floor, Swatantrapath, Vasco, Panaji - 403802			
16	Tata Steel Processing & Distribution Ltd.	Mr. Ashok Kumar Balyan	Chief of Operations	Tata Centre 43, Jawaharlal Nehru Road Kolkata 700071			
17	Monnet Ispat Ltd.	Mr. Amitabh S. Mudgal	President (Marketing and Corp affair)	MandirHausad, Chandkhuri Marg, Chandkhuri Marg, Raipur, Chhattisgarh 492101			
18	Tata Sponge Iron Ltd	Mr. Partha Chattopadhyay	Chief Operating Officer (SB)	PO: Joda, Dist: Keonjhar Orissa - 758034			
19	Facor Alloys Ltd.	Mr. M S S Sharma	Chief Executive	46 A and B, MIDC Industrial Estate, Nagpur - 440028			
20	Sarda Metals & Alloys Ltd	Mr. Prabhat Mohan	Head HR	Floor II & III, D.No.50-96-4/1, Sri Gowri Nilayam, Seethammadhara NE Visakhapatnam - 530013			

Annexure: Training & Employment Details

Training and Employment Projections:

Year	Total Candidates		Women		People with Disability	
	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities
2022-23	500	350	200	140	50	35
2023-24	1000	700	400	280	100	70
2024-25	1500	1050	600	420	150	105

Data to be provided year-wise for next 3 years

Training, Assessment, Certification, and Placement Data for previous versions of qualifications:

Qualification Version	Year	Total Candidates				Women				People with Disability			
		Trained	Assessed	Certified	Placed	Trained	Assessed	Certified	Placed	Trained	Assessed	Certified	Placed

Applicable for revised qualifications only, data to be provided year-wise for past 3 years.

List Schemes in which the previous version of Qualification was implemented:

- 1.
- 2.

Content availability for previous versions of qualifications:

☐ Participant Handbook ☐ Facilitator Guide ☐ Digital Content ☐ Qualification Handbook ☐ Any Other:

Languages in which Content is available:

Annexure: Blended Learning

Blended Learning Estimated Ratio & Recommended Tools:**Refer NCVET “Guidelines for Blended Learning for Vocational Education, Training & Skilling” available on:**<https://ncvet.gov.in/sites/default/files/Guidelines%20for%20Blended%20Learning%20for%20Vocational%20Education,%20Training%20&%20Skilling.pdf>

S. No.	Select the Components of the Qualification	List Recommended Tools – for all Selected Components	Offline: Online Ratio
1	☒ Theory/ Lectures - Imparting theoretical and conceptual knowledge	• Books/ e-books • Presentations • Reference Material • Audio / Video Modules	
2	☒ Imparting Soft Skills, Life Skills, and Employability Skills /Mentorship to Learners	• Self-Learning Videos • Broadcasts • Mobile Learning • Curated Digital content	
3	☒ Showing Practical Demonstrations to the learners	• Video Content • E-Resource library • AR/ VR/ XR	
4	☒ Imparting Practical Hands-on Skills/ Lab Work/ workshop/ shop floor training	• Training tools (tools list attached) • Video Play • Presentations	
5	☒ Tutorials/ Assignments/ Drill/ Practice	• Online Question Bank • Mobile Quick test app • MCQ based tests	
6	☒ Proctored Monitoring/ Assessment/ Evaluation/ Examinations	• Assessment engine for Essays • Up-loadable file examinations • Mock test sessions	
7	☒ On the Job Training (OJT)/ Project Work Internship/ Apprenticeship Training	• Online tests • Offline assessments	

Annexure: Detailed Assessment Criteria

Detailed assessment criteria for each NOS/Module are as follows:

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
ISC/N0009: Work effectively with others	<i>Communicate effectively with colleagues and others</i>	13	20	-	9
	PC1. coordinate with colleagues to share work, as per the workload in order to achieve team goals	3	5	-	2
	PC2. maintain clear communication with colleagues and others, wherever needed, through all means i.e. face-to-face, telephonic or written	5	7	-	3
	PC3. adjust communication styles to reflect gender and persons with disability (PwD) sensitivity	3	4	-	2
	PC4. respect all colleagues and co-workers	1	2	-	1
	PC5. resolve conflicts by communicating with colleagues and other departments	1	2	-	1
	<i>Interact with supervisor</i>	8	14	-	6
	PC6. identify work requirements by receiving instructions from reporting supervisor	2	3	-	1
	PC7. escalate problems to supervisors that cannot be handled	2	3	-	2
	PC8. report the completed work	2	3	-	1
	PC9. interact with the reporting supervisor about any possible hazards and safety concerns	2	5	-	2
	<i>Follow appropriate behaviour at work place</i>	9	16	-	5
	PC10. extend help to people with Disability (PwD) at workplace, if required	2	4	-	2
	PC11. empathizes with people with disability	2	4	-	1
	PC12. adopt a gender neutral behavior	2	4	-	1
	PC13. avoid contact with ill people and self-isolate in a similar situation	3	4	-	1
	Total Marks	30	50	-	20
ISC/N0008: Use basic health and safety practices at the work place	<i>Maintain safe and secure working environment</i>	10	14	-	6
	PC1. identify hazardous activities and the possible causes of risks or accidents in the workplace	2	2	-	1
	PC2. follow safe working practices while dealing with hazards to ensure safety of self and others.	2	3	-	1
	PC3. Use appropriate protective clothing / equipment for specific tasks and work	1	2	-	1

PC4.	Follow appropriate safety practices while working in and around trenches, elevated places and confined areas	2	1	-	-
PC5.	lift heavy objects safely using correct procedures	1	2	-	1
PC6.	carry out routine check of the machine for identifying potential hazards	1	2	-	1
PC7.	Report any identified breaches in health, safety and security policies and procedures to the designated person.	1	2	-	1
	<i>Emergencies, rescue and first aid procedures</i>	6	9	-	5
PC8.	use appropriate type of fire extinguisher	1	1	-	-
PC9.	apply appropriate rescue techniques during fire hazard	1	2	-	1
PC10.	Provide appropriate first aid procedure to victims wherever required eg. In case of bleeding, burns, choking, electric shock etc.	2	2	-	1
PC11.	follow emergency procedures such as raising alarm, safe evacuation etc.	1	2	-	1
PC12.	attend safety training and fire drills to respond promptly during an emergency	1	2	-	1
	<i>Health and hygiene</i>	2	6	-	2
PC13.	Follow regular cleaning and disinfection practices at work place using appropriate techniques and materials.	1	2	-	1
PC14.	follow hand hygiene practices at work place using appropriate techniques and materials	1	2	-	1
PC15.	report regarding the contagious illness of self or people in close contact	-	1	-	-
PC16.	avoid contact with ill people and self-isolate in a similar situation		1	-	
	<i>Housekeeping and waste management</i>	7	12	-	5
PC17.	follow the fundamentals of 5S for housekeeping	2	3	-	2
PC18.	ensure good housekeeping in order to prevent hazards and accidents	1	2	-	-
PC19.	store the material, tools and equipment in the correct location and in good condition	1	2	-	-
PC20.	segregate waste into different categories	1	2	-	1
PC21.	identify recyclable, non-recyclable and hazardous waste	1	1	-	1
PC22.	dispose non-recyclable, recyclable and reusable waste appropriately at identified location	1	2	-	1
	<i>Material and energy conservation</i>	5	9	-	2

	PC23. identify ways to optimize usage of material in various tasks/activities/processes	1	2	-	-
	PC24. check for spills/leakages in various tasks/ activities/processes	1	2	-	1
	PC25. plug spills/leakages and escalate to appropriate authority if unable to rectify	1	2	-	1
	PC26. check if the equipment/machine is functioning normally before commencing work and rectify wherever required	1	2	-	-
	PC27. ensure electrical equipment and appliances are properly connected and turned off when not in use	1	1	-	-
	Total Marks	30	50	-	
ISC/N1102: Carry out maintenance of measuring and control equipment	<i>Prepare for maintenance work</i>	5	6	-	4
	PC1. identify the measuring and control equipment, its manufacturer's specifications and functioning from the user manual	1	2	-	1
	PC2. read maintenance schedule and checklist and plan the time and schedule for conducting the maintenance	1	2	-	1
	PC3. identify and arrange the tools, measuring instruments, equipment and spares required for the job	3	2	-	2
	<i>Perform maintenance of measuring and control equipment</i>	17	32	-	11
	PC4. check from "Technician Instrumentation" that the measuring device is functioning within tolerance limits or not	1	2	-	1
	PC5. re-fix or re-position the measuring device until reading comes to the satisfying range, in case of errors in reading	2	3	-	1
	PC6. connect the linking device so that no transmission errors take place due to intermediate losses / interference	1	2	-	1
	PC7. perform basic health check-up of measuring and control equipment as specified in the maintenance checklist	3	5	-	2
	PC8. execute suitable re-routing of transmission system if need to achieve satisfactory results	1	2	-	1
	PC9. check the equipment parts for any wear and tear, damage, improper functioning etc	2	5	-	1
	PC10. repair or replace damaged components as per the requirement	3	5	-	2
	PC11. re-connect or return the system after completion of maintenance activities	1	2	-	1

	PC12. report any instances where the maintenance activities cannot be fully met or where there are identified defects outside the planned schedule	1	2	-	-
	PC13. record all repairs carried out, time taken and unplanned tasks encountered during the maintenance activities	1	2	-	1
	PC14. dispose off waste materials such as failed parts/aggregates, as per organisation's policies	1	2	-	-
	<i>Perform post-maintenance activities</i>	8	12	-	5
	PC15. re-position the pick-up / sensor to better location as advised by "Technician Instrumentation"	2	3	-	1
	PC16. re-fix the pick-up / sensor with better fixing device / fastener as advised by "Technician Instrumentation"	2	3	-	1
	PC17. monitor the problem and keep the superior informed about progress or any delays in resolving the problem	2	3	-	1
	PC18. refer the problem to "Technician Instrumentation" or competent internal / external specialist if it cannot be resolved	2	3	-	2
	Total Marks	30	50	-	20
ISC/N1103: Perform inspection and calibration of measuring equipment	<i>Testing of measuring and control equipment</i>	20	32	-	13
	PC1. identify the testing and calibration requirements by following standard operating procedures	1	2	-	-
	PC2. prepare and update testing/calibration schedules and plans as per the WI	1	2	-	1
	PC3. select the appropriate test equipment in accordance with defined requirements	2	2	-	2
	PC4. select the correct test applications for testing of measuring and control equipment	2	2	-	1
	PC5. check the components, leads, fasteners, etc. for any damage, wear and tear, loose connections and other faults	2	3	-	1
	PC6. carry out testing of the measuring and control equipment i.e. sensors, transmitters, converters, indicators, analyzers, controllers, power supplies, circuit boards etc. to diagnose faults by using testing devices	3	5	-	2
	PC7. apply appropriate testing procedures for assessing the operation of measuring and control equipment	3	5	-	2

	PC8. record observations/ readings as per the parameters mentioned in the testing manual/Work Instructions	1	2	-	1
	PC9. analyze the test results against specified operational specifications and localized faults and report to the supervisor about the potential faults identified	2	4	-	1
	PC10. suggest and implement corrective actions to rectify the issues identified as per SOP	2	3	-	1
	PC11. monitor and review the effectiveness of corrective actions planned for fault rectification and prepare reports for the regulatory authorities on the same	1	2	-	1
	<i>Calibrating measuring and control equipment</i>	10	18	-	7
	PC12. assess the calibration of measuring and control equipment w.r.t manufacturers' specifications and/or standard operating procedures	2	3	-	1
	PC13. carry out calibration of each measuring and control equipment against appropriate physical standards by using correct calibration devices, equipment, techniques and predetermined procedures	3	5	-	2
	PC14. check zero error, span and range of the equipment on indicators/controllers by using correct and appropriate configuration	2	4	-	2
	PC15. prepare and update documents and records related to testing/calibration activities done	1	2	-	1
	PC16. carry out recommissioning of equipment in accordance with standard operating procedures	1	2	-	-
	PC17. report any instances where the testing/calibration activities cannot be fully met	1	2	-	1
	Total Marks	30	50	-	20
DGT/VSQ/N0101 - Employability Skills (30 hours)	<i>Introduction to Employability Skills</i>	1	1	-	-
	PC1. understand the significance of employability skills in meeting the current job market requirement and future of work	-	-	-	-
	<i>Constitutional values – Citizenship</i>	1	1	-	-
	PC2. identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices	-	-	-	-
	<i>Becoming a Professional in the 21st Century</i>	1	3	-	-
	PC3. explain 21st Century Skills such as Self- Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking,	-	-	-	-

	social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life				
	<i>Basic English Skills</i>	2	3	-	-
	PC4. speak with others using some basic English phrases or sentences	-	-	-	-
	<i>Communication Skills</i>	1	1	-	-
	PC5. follow good manners while communicating with others	-	-	-	-
	PC6. work collaboratively with others in a team			-	
	<i>Diversity & Inclusion</i>	1	1	-	-
	PC7. communicate and behave appropriately with all genders and PwD	-	-	-	-
	PC8. report any issues related to sexual harassment at workplace according to POSH Act	-	-	-	-
	<i>Financial and Legal Literacy</i>	3	4	-	-
	PC9. use various financial products and services safely and securely	-	-	-	-
	PC10. calculate income, expenses, savings etc.	-	-	-	-
	PC11. approach the concerned authorities for any exploitation as per legal rights and laws	-	-	-	-
	<i>Essential Digital Skills</i>	4	6	-	-
	PC12. operate digital devices and carry out basic internet operations securely and safely	-	-	-	-
	PC13. use internet and social media platforms securely and safely	-	-	-	-
	<i>Entrepreneurship</i>	3	5	-	-
	PC14. identify and assess opportunities for potential business	-	-	-	-
	PC15. identify sources for arranging money and associated financial and legal challenges	-	-	-	-
	<i>Customer Service</i>	2	2	-	-
	PC16. identify different types of customers	-	-	-	-
	PC17. identify customer needs and address them appropriately	-	-	-	-
	PC18. follow appropriate hygiene and grooming standards	-	-	-	-
	<i>Getting ready for apprenticeship & Jobs</i>	1	3	-	-
	PC19. create a basic biodata	-	-	-	-
	PC20. search for suitable jobs and apply	-	-	-	-
	PC21. identify and register apprenticeship opportunities as per requirement	-	-	-	-
	Total Marks	20	30	-	-
	Grand Total	140	230		80

Annexure: Assessment Strategy

This section includes the processes involved in identifying, gathering, and interpreting information to evaluate the Candidate on the required competencies of the program.

Mention the detailed assessment strategy in the provided template.

1. Assessment System Overview:
 - Batches assigned to the assessment agencies for conducting the assessment on SDMS/SIP or email
 - Assessment agencies send the assessment confirmation to VTP/TC looping SSC
 - Assessment agency deploys the ToA certified Assessor for executing the assessment
 - SSC monitors the assessment process & records
2. Testing Environment:
 - Confirm that the centre is available at the same address as mentioned on SDMS or SIP
 - Check the duration of the training.
 - Check the Assessment Start and End time to be as 10 a.m. and 5 p.m.
 - EAF the batch size is more than 30, then there should be 2 Assessors.
 - Check that the allotted time to the candidates to complete Theory & Practical Assessment is correct.
 - Check the mode of assessment—Online (TAB/Computer) or Offline (OMR/PP).
 - Confirm the number of TABs on the ground are correct to execute the Assessment smoothly.
 - Check the availability of the Lab Equipment for the particular Job Role.
3. Assessment Quality Assurance levels / Framework:
 - Question papers created by the Subject Matter Experts (SME)
 - Question papers created by the SME verified by the other subject Matter Experts
 - Questions are mapped with NOS and PC
 - Question papers are prepared considering that level 1 to 3 is for the unskilled & semi-skilled individuals, and level 4 and above are for the skilled, supervisor & higher management
 - Assessor must be ToA certified & trainer must be ToT Certified
 - Assessment agency must follow the assessment guidelines to conduct the assessment
4. Types of evidence or evidence-gathering protocol:
 - Time-stamped & geotagged reporting of the assessor from assessment location
 - Centre photographs with signboards and scheme specific branding
 - Biometric or manual attendance sheet (stamped by TP) of the trainees during the training period
 - Time-stamped & geotagged assessment (Theory + Viva + Practical) photographs & videos
5. Method of verification or validation:
 - Surprise visit to the assessment location

- Random audit of the batch
 - Random audit of any candidate
6. Method for assessment documentation, archiving, and access
- Hard copies of the documents are stored
 - Soft copies of the documents & photographs of the assessment are uploaded / accessed from Cloud Storage
 - Soft copies of the documents & photographs of the assessment are stored in the Hard Drives

Annexure: Acronym and Glossary

Acronym

Acronym	Description
AA	Assessment Agency
AB	Awarding Body
ISCO	International Standard Classification of Occupations
NCO	National Classification of Occupations
NCrF	National Credit Framework
NOS	National Occupational Standard(s)
NQR	National Qualification Register
NSQF	National Skills Qualifications Framework
OJT	On the Job Training

Glossary

Term	Description
National Occupational Standards (NOS)	NOS define the measurable performance outcomes required from an individual engaged in a particular task. They list down what an individual performing that task should know and also do.
Qualification	A formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards
Qualification File	A Qualification File is a template designed to capture necessary information of a Qualification from the perspective of NSQF compliance. The Qualification File will be normally submitted by the awarding body for the qualification.
Sector	A grouping of professional activities on the basis of their main economic function, product, service or technology.
Long Term Training	Long-term skilling means any vocational training program undertaken for a year and above. https://ncvet.gov.in/sites/default/files/NCVET.pdf