

QUALIFICATION FILE

Assembly Operator -RAC*

☒ 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: 4

Submitted By:

Electronics Sector Skills Council of India (ESSCI)

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Section 1: Basic Details

1.	Qualification Name	Assembly Operator -RAC* Refrigerator and Air Conditioning														
2.	Sector/s	Electronics														
3.	Type of Qualification: ☐ New ☒ Revised ☐ Has Electives/Options ☐ OEM	NQR Code & version of existing/previous qualification: (change to previous, once approved)- QG-04-EH-02737-2023-V1.1-ESSC & V 3		Qualification Name of existing/previous version: Assembly Operator - RAC												
4.	a. OEM Name b. Qualification Name (Wherever applicable)	NA														
5.	National Qualification Register (NQR) Code & Version (Will be issued after NSQC approval)	QG-04-EH-044882025-V2-ESSCI	6. NCrF/NSQF Level: 4													
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 at work is responsible for assembling and wiring various components, modules, or sub-assemblies to build complete refrigeration and air conditioning systems as per technical specifications.														
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>12th grade or equivalent</td> <td>NA</td> </tr> <tr> <td>2</td> <td>10th grade or equivalent</td> <td>3 years relevant experience</td> </tr> <tr> <td>3</td> <td>Certificate-NSQF (Level-3 in relevant domain)</td> <td>3 years of relevant experience</td> </tr> </tbody> </table> Relevant Experience in Electronics Manufacturing Services b. Age: NA			S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)	1	12 th grade or equivalent	NA	2	10 th grade or equivalent	3 years relevant experience	3	Certificate-NSQF (Level-3 in relevant domain)	3 years of relevant experience
S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)														
1	12 th grade or equivalent	NA														
2	10 th grade or equivalent	3 years relevant experience														
3	Certificate-NSQF (Level-3 in relevant domain)	3 years of relevant experience														
10.	Credits Assigned to this Qualification, Subject to Assessment (as per National Credit Framework (NCrF))	16	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>00:00</td> <td>180:00</td> <td>120:00</td> <td>00:00</td> <td rowspan="2">480</td> </tr> <tr> <td>Online</td> <td>180:00</td> <td>00:00</td> <td>00:00</td> <td>00:00</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)	00:00	180:00	120:00	00:00	480	Online	180:00	00:00	00:00	00:00
Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)																		
Classroom (offline)	00:00	180:00	120:00	00:00	480																		
Online	180:00	00:00	00:00	00:00																			
14.	Aligned to NCO/ISCO Code/s <i>(if no code is available mention the same)</i>	NCO-2015/8212.1301																					
15.	Progression path after attaining the qualification <i>(Please show Professional and Academic progression)</i>	Assembly Supervisor																					
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 (Employability Skills (30 hours)																					
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: Saleem Ahmed Email: ceo@essc-india.org Contact No.: 011 – 8447738501 Website: https://www.essc-india.org/																					
23.	Final Approval Date by NSQC: 07.10.2025	24. Validity Duration: 3 Years			25. Next Review Date: 07.10.2028																		

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	Assemble Refrigerator	ELE/N3506 & V2.0	Core	4	7	60	90	60	0	210	40	60	0	0	100	40
2	Assemble air Conditioner	ELE/N3507 & V3.0	Core	4	8	90	90	60	0	240	40	60	0	0	100	40
3	Employability Skills (30 hours)	DGT/VSQ/N0101 & V1.0	Non-core	4	1	30	0	0	0	30	20	30	0	0	50	20
Duration (in Hours) / Total Marks					16	180	180	120	0	480	100	150	0	0	250	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)	Diploma/ ITI (Electronics/Mechanical) with 2 years industrial and 1 year training experience in the field of Electronics assembly line. Or Certified in relevant CITS Trade
2.	Master Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)	Diploma/ ITI (Electronics/Mechanical) with 3 years industrial and 2-year training experience in the field of Electronics assembly line. Or Certified in relevant CITS Trade
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	NA

Section 4: Assessment Related

1.	Assessor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	Diploma/ ITI (Electronics/Mechanical) with 3 years industrial and 2-year training experience in the field of Electronics assembly line. Or Certified in relevant CITS Trade
2.	Proctor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	Diploma/ ITI (Electronics/Mechanical) with 3 years industrial and 4-year training experience in the field of Electronics assembly line. Or Certified in relevant CITS Trade
3.	Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	Diploma/ ITI (Electronics/Mechanical) with 4 years industrial and 3-year training experience in the field of Electronics assembly line. Or Certified in relevant CITS Trade.
4.	Assessment Mode (Specify the assessment mode)	Blended
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: 23
5.	Estimated nos. of persons to be trained and employed: 4000
6.	Evidence of Concurrence/Consultation with Line Ministry/State Departments: Yes 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 <i>(Mandatory)</i>	Attached
2.	Annexure: List of tools and equipment relevant for qualification <i>(Mandatory, except in case of online course)</i>	Attached
3.	Annexure: Detailed Assessment Criteria <i>(Mandatory)</i>	Attached
4.	Annexure: Assessment Strategy <i>(Mandatory)</i>	Attached
5.	Annexure: Blended Learning <i>(Mandatory, in case selected Mode of delivery is "Blended Learning")</i>	Filled
6.	Annexure: Multiple Entry-Exit Details <i>(Mandatory, in case qualification has multiple Entry-Exit)</i>	Filled
7.	Annexure: Acronym and Glossary <i>(Optional)</i>	Attached
8.	Supporting Document: Model Curriculum <i>(Mandatory – Public view)</i>	Attached
9.	Supporting Document: Career Progression <i>(Mandatory - Public view)</i>	Attached
10.	Supporting Document: Occupational Map <i>(Mandatory)</i>	Attached
11.	Supporting Document: Assessment SOP <i>(Mandatory)</i>	
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	Demands a wide range of specialized technical skill, clarity of knowledge and practice in broad range of activity	An Assembly Operator -RAC* is responsible for assembling and wiring up of various components, modules or sub- assemblies and systems to make the complete product.	4

	involving standard and non-standard practices. • Perform the assembling of refrigerator and air-conditioner. • Perform testing of refrigerator and air conditioner after assembly. • Follow all guidelines and instructions. • Adhere to industry work practices to achieve productivity and quality standards. • Check the working of the appliances.		
Professional and Technical Skills/ Expertise/ Professional Knowledge	Factual and theoretical knowledge in broad contexts within a field of work or study. • Knowledge of assembly requirements, assembly process, working of various type of refrigerators and air-conditioners. • Know the instructions and guidelines to achieve productivity and quality standards	standards. Also able to test the components of the assembly. Hence Level 4	4
Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill	A range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study. • Communicate with customer, team and supervisor to understand the work requirement • Identify the errors in orders • Maintain inventory • Complete the documentation of maintenance and service records	An Assembly Operator -RAC* should be able to use basic tools in the correct way to assemble and test the components. He/she works after getting work requirements from supervisor or other team members. Hence Level 4	4
Broad Learning Outcomes/Core Skill	• Assembly procedures	An Assembly Operator -RAC* needs to know the assembling procedures, working of various components and testing the	4

	Working and testing of various components	same. The technician should keep the workplace clean and managed. Hence Level 4	
Responsibility	Responsibility of completing the work assigned and reporting the same as per standards. - Understand the job role and follow the organizational policy - Record and report about the work status - Follow safety regulations at work place - Work along with colleagues and supervisors	An Assembly Operator -RAC* should record the issues and report about the same to the supervisor and also update the status of the work as per organizations policy. Hence Level 4	4

Annexure: Tools and Equipment (Lab Set-Up)

List of Tools and Equipment

Batch Size: 30

S. No.	Tool / Equipment Name	Quantity for specified	Specifications
1	Capillary 400	1	Standard
2	Capillary 500	1	Standard
3	Capillary 600	1	Standard
4	First -Aid Box with all material	1	Set
5	Tube Bender (Mechanical/Tube) Set	1	Standard
6	Appliances Refrigerator(One Direct Cool & other Frost Free type)	2	Standard
7	Compressor Old	2	Standard
8	Compressor/ All Models	2	Standard
9	Drier (Sample)	2	Standard
10	Empty Cylinder	2	Standard
11	Filter (Sample)	2	Standard
12	Refrigerants M12	2	Standard
13	Refrigerants M-22	2	Standard
14	Tommy - (mini 0 screw driver-flat head(550 mm tip))	2	Standard

15	Compound Guage	3	Standard
16	Digital Clamp Meter	3	Standard
17	Fire Extinguisher (ABC Powder type 2 Kg)	3	Standard
18	Fixed Spanner(10-11, 14-15, 16-17 Each)	3	Standard
19	Flat File (Smooth 200 mm)	3	Standard
20	Hacksaw with Blade (150-200 mm)	3	Standard
21	Hammer	3	Standard
22	Megger	3	Standard
23	Monkey/Adjustable Plier	3	Standard
24	Neon Phase Tester (Insulated 150 mm)	3	Standard
25	Nose/ Combination Pliers (Insulated 150 mm), Tong Pliers (Each)	3	Standard
26	Paint Brush (50 mm)	3	Standard
27	Round File (Smooth 150 mm)	3	Standard
28	Tube Cutter	3	Standard
29	Wire Brush	3	Standard
30	Work Table (5x3x2.5)	3	Standard
31	Bins for Tools	4	Standard
32	Brazing Kit (1 Swirl Type)	4	Set
33	Teflon Sheet (White /Black) Mtr(Tape)	5	Mtr
34	Aircons Window and Split (1.5 Ton used preferred)	6	Standard
35	Brazing Rod+ Flux Sets	6	Set
36	Capillary Guage	6	Standard
37	Compressor Relay	6	Standard
38	Defrost Timer	6	Standard
39	Digital Thermometer	6	Standard
40	Freezer Thermostat	6	Standard
41	Fuse	6	Standard
42	L-Allen Key (Each Type)`	6	Set
43	Long Screw Driver (250 mm)	6	Standard
44	Measuring & Testing Equipment	6	Set
45	Measuring Tape (5 Mtrs)	6	Standard
46	Pressure Guage	6	Standard
47	Screw Bits/Nut Driver(41 piece set)Set	6	Set
48	Service Manual/ User Manuals (each)	6	Set
49	Testing Board (Ref/AC) Set	6	Set
50	Watt Meter	6	Standard

51	Copper Tube 1/2,3/16,1/4,3/8,5/8 (Roll Set Each)	8	Set
52	Personal Protection Equipment	8	Set
53	Swaging Punch Set	8	Set
54	T-Allen Key (Each Type)	8	Set
55	Male - Female Couplers	12	Standard

Classroom Aids

The aids required to conduct sessions in the classroom are:

1. Whiteboard
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	Nagdeo Education Welfare Society	Vijay Nagdeo	General Manager	Ward No. 11 Junnardeo Dist. Chhindwara M.P. 480551	9425461093	Vijaynagdeo02@gmail.com	
2	Access Edutech Pvt. Ltd.	Sanjay Kumar Mishra	Director	96, Vrindavan Nagar Ayodhya Bypass Road Bhopal	7000650224	sanjaymishra@accessedutech.com	
3	SHIV SHAKTI TECKNIKI EVAM SAMANAYA SHIKSHAN SANSTHAN	Jitendra Kumar Garg	President	B 32 MAHESH NAGAR JAIPUR RAJASTHAN-302015	9782912782	jitendra.garg303@gmail.com	
4	YADUVANSHI PRIVATE ITI	YADVENDRA	PRINCIPAL	TC229199 - YADUVANSHI PVT ITI, HASAMPUR The-NEEMKATHANA DIST-SIKAR	8432882688	yaduvanshicollege2008@gmail.com	

				RAJASTHAN PIN CODE NO - 332718			
5	Ephicity Lifescience Analytics	Rahul Kumar Kaushik	Senior Software Engineer	2nd Main Rd, Sarvobhogam Nagar, Arekere, Bengaluru, Karnataka 560076	8859885973	Rahul.Kaushik@ephicity.com	
6	Nagravision India Pvt. Ltd.	Avinash Yadav	Manager- System Administrator	RMZ Centennial, Tower C unit 301 and 302, Mahadevapura Post ITPL Road, Bangalore	9808326626	avinash.yadav@nagra.com	
7	Sri Venkateswara College of Engineering	Dr C Chandrasekhar	Head R &D & Professor in ECE	Karakmbadi Road, Tirupati 517507	9177217190	dr.chandrasekhar.c@svcolleges.edu.in	
8	Sunita Technology	Sunita	Owner	New Delhi 110020			
9	Rastriya Khushali Sansthan	Ramkaran Sinsinwar	President	VOP Tajsar Fatehpur Rajasthan	6350658040	Rkstajsar1998@gmail.com	
10	Sri Rajaram Shikshan Sansthan	Rajendra Parsad	Principle		8808696968	rajendraitijnp@gmail.com	
11	Nexgen Exhibitions Pvt. Ltd.	Saurabh Purwar	Director	1201/1206 Pragati Tower, 26 Rajendra Place, New Delhi-110008, India	9457306691	fbvidgo@gmail.com	
12	Siemens Limited	Manoj Belgaonkar	Head – Regulations, Standards and QM	R&D Centre, Thane Belapur Road, Airoli, Navi Mumbai 400708	9820682825	manoj.belgaonkar@siemens.com	
13	Tata Consultancy Services	Sheepra Kaushik	Consultant – Product Development	Kensington B Wing, Hiranandani SEZ, Powai, Mumbai 400076	8433595090	sheepra.sharma@tcs.com	

14	Conduent- https://www.conduent.com	Prince Jain	Senior Business Analyst	7 to 9th Floor & 6 to 9th Floor, Building No.5 & 6, Plot No 20&21, Candor Tech Space, IT/ITES SEZ., Noida, Uttar Pradesh 201304	8439385780	prince.jain@conduent.com	
15	Artificial Intelligence Technologies	Rohit Kumar Sharma	Manager Product Development	A-21, sector 4, Block A, Kailash Colony, Greater Kailash, New Delhi	9927564461	rohit.sharma@aituniversitysal.com	
16	Shri Prasad Sharma Shikshan Sansthan Myana	Suresh		Gautam Budha Nagar UP	8433476571		
17	Evergreen Education Trust	Faizanbazaz	Director	217, Pehari Colony Jammu 180005	7006341193	eetturst@gmail.com	
18	Bergen Associates Pvt Ltd.	Soubam Sunil	Manager	305-306, Magnum House-I, Commercial Complex, Karampura, New Delhi – 110015	9311780832	s.soubam@bergengroupindia.com	
19	Sankalp Education and development society	Jafruddin Khan	SPOC		8104049522		
20	Ramyash Pvt ITI	Ramyash	Principel	Jamalpur	9454738298	Yashvant Yadav964@gmail.com	
21	B M Upadhyay Shiksha Samiti	K K Upadhyay	SPOC	Agra	9149158684	Kk7500081234@gmail.com	
22	Shri Solasar Balaji Shikshan	Nand Kishor Gurjar	SPOC	Rajasthan	9358734466	shribalajiitisujangarh@gmail.com	
23	Rastriya Khushali Sansthan	Ramkaran Sinsinwar	President	VOP Tajsar Fatehpur Rajasthan	6350658040	Rkstajsar1998@gmail.com	

Annexure: Training Details

Training and Employment Projections:

Year	Total Candidates	Women	People with Disability
	Estimated Training # Total	Estimated Training # Women	Estimated Training # PwD
2025-26	1000	NA	NA
2026-27	1500	NA	NA
2027-28	1500	NA	NA

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
3.0	2022-23	465	449	403	NA	NA	NA	NA	NA	NA	NA	NA	NA
3.0	2023-24	108	87	79	NA	NA	NA	NA	NA	NA	NA	NA	NA
3.0	2024-25	2743	2574	2380	NA	NA	NA	NA	NA	NA	NA	NA	NA

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:

- 1.
- 2.

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	30:70
2	☒ Imparting Soft Skills, Life Skills, and Employability Skills /Mentorship to Learners	• Self-Learning Videos • Broadcasts • Mobile Learning • Curated Digital content	30:70
3	☒ Showing Practical Demonstrations to the learners	• Video Content • E-Resource library • AR/ VR/ XR	30:70
4	☒ Imparting Practical Hands-on Skills/ Lab Work/ workshop/ shop floor training	• Training tools (tools list attached) • Video Play • Presentations	30:70
5	☒ Tutorials/ Assignments/ Drill/ Practice	• Online Question Bank • Mobile Quick test app • MCQ based tests	30:70
6	☒ Proctored Monitoring/ Assessment/ Evaluation/ Examinations	• Assessment engine for Essays • Up-loadable file examinations • Mock test sessions	30:70
7	☒ On the Job Training (OJT)/ Project Work Internship/ Apprenticeship Training	• Online tests • Offline assessments	30:70

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
ELE/N3506: Assemble refrigerator	Introduction and Receive and interpret requirement from the supervisor	8	8	-	-
	PC1. Describe the role and responsibilities of an RAC Assembly Operator; explain the process of assembling and wiring components and sub-systems to construct complete RAC units as per design and safety standards.	2	2	-	-
	PC2. interact with the supervisor to identify production schedule and plan the days production activities based on the supervisors instructions	2	2	-	-
	PC3. use appropriate drawings, job instructions or work manuals	2	2	-	-
	PC4. check availability of materials required for assembly	1	1	-	-
	PC4.follow standard operating procedure while handling hardware modules such as handling PCB with ESD standards	1	1		
	Assemble the refrigerator	24	36	-	-
	PC5. Set up IoT-enabled workstations with digital work instructions, use for tracking and accuracy.	1	2	-	-
	PC6. Use smart tools (e.g., programmable drivers), AR (Augmented Reality) assistance for efficient and precise assembly of both mechanical and electronic parts.	1	2	-	-
	PC7. cover the evaporator with the enclosure	1	2	-	-
	PC8. place the electrical control panel in the designated location within the cabinet and connect it to the micro-processor	1	2	-	-
	PC9. place the fridge side evaporator in the fridge section of the cabinet and connect	2	2	-	-
	PC10. attach the door of the refrigerator to the cabinet	1	2	-	-
	PC11. connect the compressors and the Radiator to the assembly	1	3	-	-
	PC12. attach the expansion valves	2	2	-	-
	PC13. solder copper tubes to the compressor to be filled in with the refrigerant later	1	4	-	-
	PC14. inject refrigerant gas into the tubes through a charging gun	3	3	-	-
	PC15. weld the ends of the tube shut	3	3	-	-
	PC16. attach handles to the refrigerator door and place the necessary trays, shelves in their respective positions inside the cabinet	2	2	-	-

	PC17. use the drawings accurately to meet the specifications	2	4	-	-
	PC18. ensure that approved components or modules are available in good condition	3	3	-	-
	Report problems to supervisor	6	6	-	-
	PC19. highlight any errors in previous step of the assembly process identified	2	2	-	-
	PC20. report defective or inadequate number of components in time	2	2	-	-
	PC21. report about inadequate quantity of consumables such as screws, nuts, etc.	2	2	-	-
	Achieve productivity, quality and safety standards as per company's norms	2	10	-	-
	PC22. achieve 100% work schedule as planned for the day	1	1	-	-
	PC23. meet 100% daily or monthly target	1	1	-	-
	PC24. achieve zero errors in assembling as per company policy		2	-	-
	PC25. achieve zero component damage Because of electrostatic discharge		2	-	-
	PC26. check any repetitive defects during the assembly process		1	-	-
	PC27. keep work area clean and organised		1	-	-
	PC28. identify problems on the assembly line and alert in time		1	-	-
	PC29. achieve 100% compliance with health And safety guidelines and rules		1	-	-
	NOS Total	40	60	-	-
ELE/N3507: Assemble air conditioner	Receive and interpret requirement from the supervisor	8	8		
	PC1. interact with the supervisor to identify production schedule	2	2		
	PC2. plan the days production activities based on the supervisors instructions	2	2		
	PC3. use appropriate drawings, job instructions or work manuals	2	2		
	PC4. check availability of materials required for assembly	2	2		
	Assemble the air conditioner	14	32		
	PC5. attach the blower at the designated position on the base frame of the air conditioner and connect	2	6		
	PC6. place the condenser coil unit on the frame	2	5		
	PC7. place the evaporator coil on the already assembled sub system	2	4		
	PC8. connect the electronic assembly (PCB) to the sub system assembled	2	2		
	PC9. place the control panel at appropriate position and make necessary connections	2	5		

	PC10. place the supply unit assembly and The front panel of the system in place	2	5		
	PC11. meets the required specifications of The completed assembly	2	5		
	Report problems to supervisor	4	5		
	PC12. highlight any errors in previous step of the assembly process identified	2	2		
	PC13. report defective or inadequate number of components and consumables such as screws and nuts	2	3		
	Achieve productivity, quality, and safety standards as per company's policy	9	10		
	PC14. accurately interpret drawings, wiring and job specifications/instructions	1	1		
	PC15. achieve 100% work as per the scheduled work plan	1	1		
	PC16. meet 100% target for number of products to be manufactured per day	1	1		
	PC17. achieve zero error as per the company's standards	1	1		
	PC18. achieve zero defect to components because of electrostatic discharge	1	1		
	PC19. keep work area clean and organised	1	1		
	PC20. identify problems on the assembly line and alert in time	1	1		
	PC21. check any repetitive defects during the assembly process	1	1		
	PC22. achieve 100% compliance with health and safety guidelines and rules	1	1		
	Workplace Safety and Waste Management	5	5		
	PC23: Identify hazards in RAC assembly (sharp parts, gas leaks, electricity); follow safety signs.	1	1		
	PC24: Wear PPE; handle tools, pipes, and units safely.	1	1		
	PC25: Be aware of fire risks from refrigerants and wiring; use proper extinguishers.	1	1		
	PC26: Give first aid for cuts, burns, or shocks; follow emergency steps.	1	1		
	PC27: Dispose of metal, plastic, and refrigerant waste properly; keep workspace clean.	1	1		
	NOS Total	40	60	-	-
DGT/VSQ/N0101 - Employability Skills (30 hours)	Introduction to Employability Skills	1	1	-	-
	PC1. understand the significance of employability skills in meeting the job requirements	-	-	-	-
	Constitutional values – Citizenship	1	1	-	-

PC2. identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices	-	-	-	-
Becoming a Professional in the 21st Century	1	3	-	-
PC3.explain 21st Century Skills such as Self Awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset etc.	-	-	-	-
Basic English Skills	2	3	-	-
PC4. speak with others using some basic English phrases or sentences	-	-	-	-
Communication Skills	1	1	-	-
PC5. follow good manners while communicating with others	-	-	-	-
PC6. work with others in a team				
Diversity & Inclusion	1	1	-	-
PC7. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC8. report any issues related to sexual harassment	-	-	-	-
Financial & Legal Literacy	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	-	-	-	-
Essential Digital Skills	4	6	-	-
PC12. operate digital devices and use its features and applications securely and safely	-	-	-	-
PC13. use internet and social media platforms securely and safely	-	-	-	-
Entrepreneurship	3	5	-	-
PC14. identify and assess opportunities for potential business	-	-	-	-
PC15. identify sources for arranging money and associated financial and legal challenges	-	-	-	-
Customer Service	2	2	-	-
PC16. identify different types of customers	-	-	-	-

PC17. identify customer needs and address them appropriately	-	-	-	-
PC18. follow appropriate hygiene and grooming standards	-	-	-	-
Getting ready for apprenticeship & jobs	1	3	-	-
PC19. create a basic biodata	-	-	-	-
PC20. search for suitable jobs and apply	-	-	-	-
PC21. identify and register apprenticeship opportunities as per requirement	-	-	-	-
NOS Total	20	30	-	-
Grand Total	100	150	-	0

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.
 - If 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 are 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

On the Job:

1. Each module (which covers the job profile of Assembly Operator -RAC*) will be assessed separately.
2. The candidate must score 50% in each module to successfully complete the OJT.
3. Tools of Assessment that will be used for assessing whether the candidate is having desired skills and etiquette of dealing with customers, understanding needs & requirements, assessing the customer and perform Soft Skills effectively:
 - Videos of Trainees during OJT
 - Answer Sheets of Question Banks
 - Assessing the Log Book entries of Trainees at Employer location
 - Employer Performance Feedback.
4. Assessment of each Module will ensure that the candidate is able to:
 - Understand the basic principles of AC, DC and electronic circuits.
 - Work effectively at the workplace
 - Basic health and safety practice.

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 defines 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