

QUALIFICATION FILE

Project Supervisor - 5G Networks

☒ 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: 5.0

Submitted By:

Telecom Sector Skill Council

3rd Floor, Plot No 126, Sector - 44 Gurgaon - 122003

Email: tssc@tsscindia.com

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Section 1: Basic Details

1.	Qualification Name	Project Supervisor - 5G Networks																	
2.	Sector/s	Telecom																	
3.	Type of Qualification: ☐ New ☒ Revised ☐ Has Electives/Options ☐ OEM	NQR Code & version of existing/previous qualification: (QG-05-TL-00084-2023-V1.1-TSSC, V3.0)	Qualification Name of existing/previous version: Project Engineer - 5G Networks																
4.	a. OEM Name b. Qualification Name (Wherever applicable)																		
5.	National Qualification Register (NQR) Code &Version (Will be issued after NSQC approval)	QG-05-TL-04088-2025-V2-TSSC	6. NCrF/NSQF Level: 5.0																
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	A Project Supervisor - 5G Networks responsible for ensuring the 5G site is fully operational immediately after successful installation and commissioning, including 5G antennas and MIMO for Next-Generation Nodes (gNodes). They must have expertise in passive and active hardware, as well as software configurations during installation. Additionally, the role involves conducting site acceptance tests, including site audits, VSWR testing, call testing, and verifying antenna positioning (tilt, azimuth, and zenith angles).																	
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>Completed 2nd year of 3-year/ 4-years UG (B.Tech/B.E. in Electronics and Communication Engineering/ Telecommunication Engineering/ Electrical and Electronics Engineering)</td> <td></td> </tr> <tr> <td>2.</td> <td>Completed 2nd year of diploma (after 12th) in Electronics and Communication Engineering/ Wireless Communication/ Networking and Mobile Communications</td> <td></td> </tr> <tr> <td>3.</td> <td>12th grade pass</td> <td>3-year of experience in network management domain</td> </tr> <tr> <td>4.</td> <td>Previous relevant Qualification of NSQF Level 4.0</td> <td>3-year of experience in network management domain</td> </tr> </tbody> </table>			S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)	1.	Completed 2nd year of 3-year/ 4-years UG (B.Tech/B.E. in Electronics and Communication Engineering/ Telecommunication Engineering/ Electrical and Electronics Engineering)		2.	Completed 2nd year of diploma (after 12th) in Electronics and Communication Engineering/ Wireless Communication/ Networking and Mobile Communications		3.	12th grade pass	3-year of experience in network management domain	4.	Previous relevant Qualification of NSQF Level 4.0	3-year of experience in network management domain
S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)																	
1.	Completed 2nd year of 3-year/ 4-years UG (B.Tech/B.E. in Electronics and Communication Engineering/ Telecommunication Engineering/ Electrical and Electronics Engineering)																		
2.	Completed 2nd year of diploma (after 12th) in Electronics and Communication Engineering/ Wireless Communication/ Networking and Mobile Communications																		
3.	12th grade pass	3-year of experience in network management domain																	
4.	Previous relevant Qualification of NSQF Level 4.0	3-year of experience in network management domain																	

		5. Previous relevant Qualification of NSQF Level 4.5	1.5-year of experience in network management domain																		
		b. Age: NA																			
10.	Credits Assigned to this Qualification, Subject to Assessment (as per National Credit Framework (NCrF))	21	11. Common Cost Norm Category (I/II/III) (wherever applicable): I																		
12.	Any Licensing requirements for Undertaking Training on This Qualification (wherever applicable)	NA																			
13.	Training Duration by Modes of Training Delivery (Specify Total Duration as per selected training delivery modes and as per requirement of the qualification)	☐ 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>240</td><td>270</td><td>120</td><td></td><td>630</td></tr> <tr> <td>Online</td><td>240</td><td></td><td></td><td></td><td></td></tr> </tbody> </table> (Refer Blended Learning Annexure for details)		Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)	Classroom (offline)	240	270	120		630	Online	240				
Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)																
Classroom (offline)	240	270	120		630																
Online	240																				
14.	Aligned to NCO/ISCO Code/s (if no code is available mention the same)	NCO-2015/3114.1301																			
15.	Progression path after attaining the qualification (Please show Professional and Academic progression)	Project Supervisor - 5G Networks (NSQF Level 5) → System Architect – 5G Cloud RAN (NSQF Level 6)																			
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: Motor Impairment, Hearing Impairments, Speech and Language Disorders																			
19.	How Participation of Women will be Encouraged	Encouraging the participation of women in the role of Project Supervisor - 5G Networks in the telecom sector can be achieved through strategies that foster diversity, inclusivity, and gender equality. This can include offering targeted training and skill development programs for female candidates interested in these roles. Additionally, creating a workplace culture that is safe, respectful, and inclusive, and free from harassment or discrimination, is crucial for ensuring equal opportunities for women in the telecom sector.																			
20.	Are Greening/ Environment Sustainability Aspects Covered (Specify the NOS/Module which covers it)	☒ Yes ☐ No NOS: TEL/N9109																			
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: Praveen Sirohi Email: ceo@tsscindia.com Website: www.tsscindia.com	Contact No.: 0124-4148029
23.	Final Approval Date by NSQC: 08-05-2025	24. Validity Duration: 3 years	25. Next Review Date: 30-04-2028

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 Training **Man.**-Mandatory **Rec.**-Recommended **Proj.**-Project

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/Non-Core	NCrF/NS QF 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.	Check Availability of Hardware Equipment at the Site Location	TEL/N6319, v2.0	Core	5.0	5	40	80	30	-	150	30	50	-	20	100	15
2.	Perform Installation and Commissioning of 5G Tower Site	TEL/N6320, v2.0	Core	5.0	4	30	60	30	-	120	30	50	-	20	100	15
3.	Perform Compliance and Quality Checks	TEL/N6321, v2.0	Core	5.0	4	30	60	30	-	120	30	50	-	20	100	15
4.	Carry out Acceptance Testing and Site Monitoring	TEL/N6322, v2.0	Core	5.0	4	60	30	30	-	120	30	50	-	20	100	20
5.	Follow sustainable practices in telecom infrastructure management	TEL/N9109, v1.0	Core	4.0	1	10	20	-	-	30	30	50	-	20	100	15
6.	Manage Work, Resources and Safety at workplace	TEL/N9104, v2.0	Non-Core	5.0	1	10	20	-	-	30	40	50	-	10	100	10
7.	Employability Skills (60 Hours)	DGT/VSQ/N 0102, v1.0	Non-Core	4.0	2	60	-	-	-	60	20	30	-	-	50	10
Duration (in Hours) / Total Marks					21	240	270	120	-	630	210	330	-	110	650	100

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)	Educational Qualification: Graduate in any discipline, preferably Science/ Electrical/ Electronics/ IT and other relevant fields. Industry & Training Experience: 7 years of experience in Telecom - 5G Networks Domain. Certification: "Trainer" mapped to the Qualification Pack "MEP/Q2601, v3.0". Minimum accepted score is 80% aggregate.
2.	Master Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)	Educational Qualification: Graduate in any discipline, preferably Science/ Electrical/ Electronics/ IT and other relevant fields. Industry & Training Experience: 10 years of experience in Telecom - 5G Networks Domain. Certification: "Master Trainer" mapped to the Qualification Pack "MEP/Q2602, v3.0". Minimum accepted score is 90% aggregate.
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)	Educational Qualification: Graduate in any discipline, preferably Science/ Electrical/ Electronics/ IT and other relevant fields. Industry & Training Experience: 7 years of experience in Telecom - 5G Networks Domain. Certification: "Assessor" mapped to the Qualification Pack "MEP/Q2701, v3.0". Minimum accepted score is 80% aggregate.
2.	Proctor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	Educational Qualification: Graduate in any discipline, preferably Science/ Electrical/ Electronics/ IT and other relevant fields. Industry & Training Experience: 7 years of experience in Telecom - 5G Networks Domain.

		Certification: "Assessor" mapped to the Qualification Pack "MEP/Q2701, v3.0". Minimum accepted score is 80% aggregate.
3.	Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years) <i>(as per NCVET guidelines)</i>	Educational Qualification: Graduate in any discipline, preferably Science/ Electrical/ Electronics/ IT and other relevant fields. Industry & Training Experience: Minimum 10 years of experience in Telecom - 5G Networks Domain. Certification: "Lead Assessor" mapped to the Qualification Pack "MEP/Q2702, v3.0" Minimum accepted score is 90% aggregate.
4.	Assessment Mode <i>(Specify the assessment mode)</i>	Offline/Online
5.	Tools and Equipment Required for Assessment	☒ Same as for training ☐ Yes ☐ No <i>(details to be provided in Annexure-if it is different for Assessment)</i>

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): NA
2.	Latest Market Research Reports or any other source (not older than 2 years) (Yes/No): NA
3.	Government /Industry initiatives/ requirement (Yes/No): NA
4.	Number of Industry validation provided: 21
5.	Estimated nos. of persons to be trained and employed: 2840
6.	Evidence of Concurrence/Consultation with Line Ministry/State Departments: <i>Approved</i> 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>	<i>Annexure 1</i>
2.	Annexure: List of tools and equipment relevant for qualification <i>(Mandatory, except in case of online course)</i>	<i>Annexure 2</i>
3.	Annexure: Detailed Assessment Criteria <i>(Mandatory)</i>	<i>Annexure 6</i>
4.	Annexure: Assessment Strategy <i>(Mandatory)</i>	<i>Annexure 7</i>

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)	Yes
7.	Annexure: Acronym and Glossary (Optional)	Annexure 8
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:	NO

Annexure 1: 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	Check Availability of Hardware Equipment at the Site Location: - Show how to verify hardware and tools as per project specifications. - Demonstrate inspection of received materials for quality compliance. Perform Installation and Commissioning of 5G Tower Site: - Show how to install and configure 5G network equipment. - Demonstrate commissioning to ensure network functionality. Perform Compliance and Quality Checks: - Show how to verify compliance with technical and safety standards. - Demonstrate quality checks for installation and system calibration. Carry out Acceptance Testing and Site Monitoring: - Show how to perform acceptance tests for site readiness. - Demonstrate site monitoring to optimize performance and resolve issues.	A Project Supervisor - 5G Networks requires a thorough understanding of 5G network architecture, including hardware components, installation procedures, and commissioning processes. The role involves planning and overseeing the installation of 5G infrastructure, ensuring adherence to technical specifications and project timelines. Additionally, the engineer conducts quality checks and site acceptance tests to validate network performance and compliance with safety standards. The role also demands knowledge of sustainable practices, optimizing power consumption, and ensuring environmental compliance while maintaining infrastructure.	5.0

Professional and Technical Skills/ Expertise/ Professional Knowledge	• Knowledge of verifying hardware availability and inspecting received materials to ensure compliance with project specifications. • Understand the processes for setting up 5G tower sites, including equipment installation, configuration, and alignment. • Knowledge of conducting power supply checks, grounding verification, and ensuring proper environmental protection at site locations. • Understand the procedures for executing acceptance tests, validating network performance, and identifying deviations. • Knowledge of interpreting technical documentation, including site blueprints, equipment manuals, and testing protocols. • Understand the importance of performing compliance and quality checks, ensuring adherence to safety standards and regulatory norms. • Knowledge of monitoring network performance using authorized test tools, diagnosing system faults, and implementing corrective measures. • Understand the methods for coordinating with cross-functional teams to manage installation, testing, and maintenance activities effectively. • Knowledge of documenting test results, site conditions, and maintenance activities for audit and troubleshooting purposes. • Understand the need for implementing sustainable practices, optimizing energy use, and minimizing environmental impact at telecom sites.	A Project Supervisor - 5G Networks possesses specialized expertise in coordinating the installation and commissioning of 5G tower sites, ensuring proper setup of antennas, base stations, and power supply units. The role requires skills in conducting compliance checks, identifying deviations, and implementing corrective measures to ensure infrastructure readiness. The engineer performs acceptance testing to validate network functionality, monitors performance metrics, and ensures seamless integration with existing systems. Additionally, they apply sustainable practices to optimize energy use and adhere to safety protocols while managing project documentation.	5.0
Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill	• Demonstrate adaptability by quickly responding to changes in project requirements and technological advancements. • Exhibit problem-solving skills to identify network issues and implement effective solutions under tight	Employment readiness for a Project Supervisor - 5G Networks focuses on project management, effective communication, and coordination with diverse teams to meet project milestones. The role demands problem-solving skills to address technical challenges during installation and commissioning. Initiative and self-management are essential	5.0

	deadlines. • Apply project management techniques to plan, prioritize, and execute tasks efficiently, ensuring timely project delivery. • Develop teamwork and collaboration by coordinating with cross-functional teams to achieve project goals. • Demonstrate a quality-focused mindset by ensuring adherence to safety standards, regulatory norms, and best practices. • Apply entrepreneurial thinking to identify opportunities for process optimization and contribute to continuous improvement initiatives.	for executing preventive maintenance and handling system upgrades. Adaptability to evolving 5G technologies ensures continuous improvement, while promoting safety, sustainability, and regulatory compliance reflects a responsible professional mindset, preparing the engineer for leadership roles or entrepreneurial ventures.	
Broad Learning Outcomes/Core Skill	The Broad Learning Outcomes/Core Skill are: • Understand 5G Network Infrastructure: Gain comprehensive knowledge of 5G architecture, including hardware components, network configurations, and installation processes. • Apply Technical Expertise: Develop the skills to install, commission, and troubleshoot 5G network equipment, ensuring optimal performance and minimal downtime. • Perform Compliance and Quality Checks: Learn to conduct site inspections, verify infrastructure standards, and ensure adherence to safety protocols and regulatory requirements. • Conduct Network Performance Monitoring: Acquire the ability to perform acceptance testing, monitor network traffic, and analyze performance metrics to maintain service quality. • Manage Project Execution: Build project management skills to coordinate with teams, oversee project timelines, and ensure successful completion of 5G network deployments.	A Project Supervisor - 5G Networks develops the ability to manage end-to-end site installation, ensuring compliance with technical standards and safety protocols. The engineer gains expertise in conducting acceptance testing, diagnosing network issues, and implementing corrective actions to maintain performance. Skills in coordinating with cross-functional teams for seamless project execution and managing documentation are crucial. The role emphasizes proactive problem-solving, optimizing site resources, and adopting sustainable practices to enhance operational efficiency while minimizing environmental impact.	5.0
Responsibility	The responsibilities are: • Pre-requisites for 5G mobile/radio networking	A Project Supervisor - 5G Networks is responsible for ensuring the 5G site is fully operational immediately after successful	5.0

	- Carry out 5G NR site hardware/equipment installation - Prepare site for 5G implementation - Perform pre-installation activities and checks - Inspect routing of power, IF and RF Cables - Carry out installation and commissioning of the gNodeB - Conduct installation and commissioning checks - Prepare compliance report - Prepare for Acceptance Testing (AT) and monitoring - Perform Acceptance Testing of new sites - Monitor site performance and traffic - Communicate test results and record findings	installation and commissioning, including 5G antennas and MIMO for Next-Generation Nodes (gNodes). They must have expertise in passive and active hardware, as well as software configurations during installation. Additionally, the role involves conducting site acceptance tests, including site audits, VSWR testing, call testing, and verifying antenna positioning (tilt, azimuth, and zenith angles).	
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Annexure 2: 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.	Tower Climbing kit (incl. carabiners)	Pieces	1
2.	PPE Kit, Safety Kit	Pieces	30
3.	Green Helmet with Jacket	Pieces	30
4.	Aviation Lamp, lighting arrestor and other misc. items	Pieces	1
5.	Nut, bolts and ancillary tool kits for installation	Pieces	1
6.	MCB board, EB meter and Cable	Pieces	1
7.	Regular Telecom rack cum cabinet	Pieces	1
8.	Tower - 3 mtr	Pieces	1
9.	Rack 19" inches	Pieces	1
10.	AISG cable (RS-485 based using a dedicated cable)	Pieces	1
11.	RF Jumper M&F	Pieces	1
12.	eCPRI cable	Pieces	1
13.	Power cable	Pieces	1
14.	PGND cable	Pieces	1
15.	RRU Cables (cables bom will depend on the final Radio unit we purchase; also includes vertical and horizontal cable trays)	Per laptop	1

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
7. Duster

Annexure 3: 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.	Ibus Network and infrastructure Pvt.Ltd.	TK Narayanan	Deputy General Manager Commercial	7th Floor Tower B, Vatika Towers Golf Crouse Road Sector 54 Gurugram, Haryana India 122011		tk.narayanan@ibusnetworks.com	
2.	ICAI Computer & IT Skill Enhancement Institute (ICSE)	Er. Kamaljeet Kumar Sharma	Managing Director	#2266 (Site No. 24), Phase 7/Sector 61, S.A.S Nagar (Mohali) 160062, Punjab (India)		contact@icseinstitute.com kksmhl@gmail.com	
3.	JRS Global Networks Pvt.Ltd.	Arvind Yadav	Asst. Account Manager Telecom	A 22, Sector-65 Noida, UP-201307		account3@jrsgl.com	
4.	Expert Consultant & Coach for Telecom Fibre Optics, FTTx and Broadband	Dr. Anuj Shrivastava	Ex Executive Director Indian Telecom Services	Ghaziabad, UP		srianujkumar@gmail.com	
5.	Jio Platforms Limited (Jio)	Abhijay Singh Sisodia	Senior Manager	Office-101, Saffron, Nr.Centre Point, Panchwati 5 Rasta, Ambawadi, Ahmedabad-380006 Gujarat		abhijay.sisodia@ril.com	

6.	Vodafone India Shared Service Private Limited	Manmohan Sharma	Deputy General Manager	0-4th floor, Cluster D, Wing 3, EON Free Zone, Kharadi, Pune, Maharashtra 411014	manmohan.sharma@vodafone.com	
7.	Teoco	Naman Khosla Abhijay Singh Sisodia	Technical Consultant	Infotech Center -6th floor, 14/2 Old Delhi Gurgaon Road, Dundahera, Gurgaon - 122016, India	naman.khosla@teoco.com	
8.	Global Logic	Rashid Muhammad	Associate Manager	Plot No.7, Oxygen Business Park SEZ, Tower, 3, Noida-Greater Noida Expy, Sector 144, Noida, Uttar Pradesh 201304	rashid.muhammad@globallogic.com	
9.	Mahendra Technical Institute	Mahendra Brmukh	Chairman and Managing Director	1st Floor, 3/B M B Classic, Telco Road, Near Kailash Dairy, Chinchwad Station, Pune - 411019 Maharashtra, India	info.mtipune@gmail.com	
10.	Amazon	Anshul Gupta	Program Manager	Bangalore	anshigu@amazon.com	
11.	Stealth Mode Startup Company	Avadh Gupta	Founder, Co-Founder & Investor	Pune	avadhmac@gmail.com	
12.	Ranitronics	Yakama Vijayasree Kumar	Founder & Technical Consultant	Villa 302, Namaha Rhythm, Road No. 1, Kavya Avenue, Bachupally, Hyderabad - 500090, Telangana	info@ranitronics.com	
13.	Eco Works	Deepali Sinha Khetriwal	Founder & CEO	C-601, Kalpataru Regency Phase 1, Kalyani Nagar, Pune 411006	deepali@ecowork.international	
14.	Himachal Futuristic Communications Limited (HFCL)	Amit Agarwal	VP PLM	8, Commercial Complex, Masjid Moth, Greater Kailash - 11, New Delhi - 110048, India	amit.agarwal@hfcl.com	
15.	Tata Communication	Alka Asthana	Head of Regulatory Affairs	Next Gen Tower Outer Ring Road, GK-1, New Delhi - 110048	alka.asthanatelecom@gmail.com	

16	Reckitt Benckiser	Sachin Sharma	Demand Manager	Udyog Vihar, Phase V, Gurgaon, Haryana	sachin.sharma@rb.com	
17	Sycamore Informatics	Rahul Kumar Kaushik	Product Manager	No. 6, 2nd Floor, 2nd Main, Arekere, Off Bannerghatta Road, Bangalore 560076	rahul.kaushik@sycamoreinformatics.com	
18	Nokia	Saurabh Singh	Software Quality Engineer	L5 and L6 Building Manyata Embassy Business Park Outer Ring Road, Nagawara 560045	saurabh.9.singh@nokia.com	
19	Edge Telecom	Arun Singh	Senior Project Engineer	9th floor, ILD Trade Centre, 904, main, Badshahpur Sohna Rd Hwy, near Subhash Chowk, Gurugram, Haryana 122018	arun.singh@edgetelecom.org	
20	Conduent	Prince Jain	Sr. Business Analyst	Plot No. 20, Candor Tech Space, Noida 201304	prince.jain@conduent.com	
21	Artificial Intelligence Technologies	Rohit Kumar Sharma	Manager – Development	A-21, sector 4, Block A, Kailash Colony, Greater Kailash, New Delhi,	rohit.sharma@aituniversal.com	
22	Ecom Express.in	Shekhar Poswal	Senior QA L1	10 th Floor, Ambience Corporate Tower II, Ambience Island, Gurugram 122001	Shekhar.p@ecomexpress.in	
23	Paarminder Electronics Process Consultancy	Paarminder Singh	Consultant	New Delhi	singhpaarminder@gmail.com	
24	Senryaku Consulting	Udit Kaushik	Co-founder	Senryaku Management Private Limited Address: UTC031, DLF The	udit.kau@gmail.com	

				Ultima, Sector 81, Gurugram, HR 122004			
25	Sopra Steria	Rikan Singh Tomar	Team Leader	Plot No. 20 & 21, Seaview Special Economic Zone, Building 4, Sector 135, Noida, Uttar Pradesh 201304		rikan.singh@soprasteria.com	

Annexure 4: 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
2025	852	596	42	21	42	21
2026	852	596	42	21	42	21
2027	1136	795	56	28	56	28

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	April 2023 to March 2024	404	347	325									
3.0	April 2024 to March 2025	1865	411	345									

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 5: 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	LMS Portal- TSSC Telco Learning Portal will be utilized with online content/virtual lectures (Telcolearning.com)	100:100
2	☒ Imparting Soft Skills, Life Skills, and Employability Skills /Mentorship to Learners	LMS Portal- TSSC Telco Learning Portal will be utilized with online content/virtual lectures (Telcolearning.com)	100:100
3	☐ Showing Practical Demonstrations to the learners		
4	☐ Imparting Practical Hands-on Skills/ Lab Work/ workshop/ shop floor training		
5	☐ Tutorials/ Assignments/ Drill/ Practice		
6	☐ Proctored Monitoring/ Assessment/ Evaluation/ Examinations		
7	☐ On the Job Training (OJT)/ Project Work Internship/ Apprenticeship Training		

Annexure 6: 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
TEL/N6319: Check Availability of Hardware Equipment at the Site Location	Pre-requisites for 5G mobile/radio networking	10	17	-	5
	PC1. review and interpret 3GPP standards, project budget, architectural blueprints, and client-specific design documents	2	4	-	1
	PC2. coordinate with cross-functional teams to translate high-level architecture into actionable deployment deliverables	2	3	-	1

	PC3. assess and validate Multiple Input, Multiple Output (MIMO) antenna parameters such as diversity gain, MIMO capacity, and beamforming requirements	2	4	-	1
	PC4. evaluate the radiation pattern of MIMO antenna and implement network slicing and Network Function Virtualization (NFV) strategies	2	3	-	1
	PC5. conduct pre-deployment software testing using automated scripts and verify backhaul network integration with planned 5G site programs	2	3	-	1
	<i>Carry out 5G NR site hardware/equipment installation</i>	<i>14</i>	<i>22</i>	<i>-</i>	<i>11</i>
	PC6. verify the availability of passive equipment like battery bank, power plant, air conditioning etc, in case of a shelter site, single/dual/triple-band MIMO antennas, feeder and jumper cables, and mounting accessories	2	3		1.5
	PC7. ensure active equipment, such as gNodeB, fibre based transmission networks of SDH or ethernet hierarchy, microwave link devices, and edge computing units, are ready for deployment at the site	2	3		1.5
	PC8. validate the functionality and compatibility of utilities, including command centers, alarm managers, historical alarm reports, PM reports, and alarm correlation tools	2	3	-	1.5
	PC9. implement orchestration among teams, Network Function Virtualization Infrastructure (NFVI), and cloud-native network functions to optimize site deployment	2	3	-	1.5
	PC10. conduct impact assessment and risk analysis of solution lifecycle activities, including revisions and system upgrades as required	2	4	-	2
	PC11. execute Proof of Concepts (PoC) and present findings to stakeholders to confirm deployment feasibility and alignment with requirements	2	3		1.5
	PC12. install, configure, and commission the equipment at designated locations, ensuring compliance with safety and operational standards	2	3		1.5
	<i>Prepare site for 5G implementation</i>	<i>6</i>	<i>11</i>	<i>-</i>	<i>4</i>
	PC13. conduct signal strength analysis using antenna parameters to ensure compliance with customer specifications	2	3	-	1
	PC14. adjust antenna tilt, zenith, and azimuth angles to optimize coverage and minimize interference	2	3	-	1
	PC15. perform pre-activation checks to validate equipment readiness and network synchronization	1	3	-	1
	PC16. document site conditions, equipment inventory, and test results for quality assurance and compliance tracking	1	2	-	1
Total Marks		30	50	-	20
TEL/N6320: Perform Installation and Commissioning of 5G Tower Site	<i>Perform pre-installation activities and checks</i>	<i>8</i>	<i>15</i>	<i>-</i>	<i>5</i>
	PC1. ensure the availability and integrity of all gNodeB and transmission units required for installation, ensuring they match the Bill of Materials (BoM)	1	1.5	-	0.5
	PC2. verify the availability and suitability of transmission racks for installation purposes	1	1.5	-	0.5
	PC3. interpret and assess the installation plan from the planning team, recommending modifications if necessary to meet site-specific requirements	1	2	-	0.5

PC4.	identify and procure any additional equipment or accessories needed for a complete installation	1	2	-	0.5
PC5.	measure the current capacity of cables and equipment using appropriate tools to ensure they meet the total load requirements	1	2		0.5
PC6.	ensure the selection and installation of appropriate Miniature Circuit Breakers (MCBs) at the rack, corresponding to the equipment's power consumption	1	2		0.5
PC7.	confirm that MCBs have –48 V DC and proper grounding connectivity with the equipment	1	2		1
PC8.	execute the correct procedures for mounting antennas on various structures (e.g., Ground-Based Towers, Roof-Top Towers, pole mounts) as per design specifications	1	2		1
<i>Inspect routing of power cables, IF, and RF Cables</i>		<i>9</i>	<i>17</i>	<i>-</i>	<i>7</i>
PC9.	ensure the proper arrangement and sequencing of equipment within the rack to facilitate optimal performance and maintenance	1	1.5	-	0.5
PC10.	mount antennas securely on designated structures, ensuring alignment with network design parameters	1	1.5	-	0.5
PC11.	connect various cables from the antenna to the tower shelter, transitioning appropriately between feeder cables and jumper/fiber cables	1	2	-	0.5
PC12.	inspect and verify the interconnection of jumper, Common Public Radio Interface (CPRI), RF, and other cables at the site, ensuring proper functionality	1	2	-	1
PC13.	route power and data cables according to the specified architecture and design, adhering to industry standards	1	2	-	1
PC14.	label all cables accurately with appropriate markers to facilitate easy identification and maintenance	1	2	-	0.5
PC15.	ensure that feeder and jumper cables are adequately supported and grounded to prevent signal loss and enhance safety	1	2	-	1
PC16.	confirm the completion and secure termination of all electrical wiring, adhering to safety protocols	1	2	-	1
PC17.	handle all cables and connectors with care during connection and disconnection to prevent damage and ensure longevity	1	2		1
<i>Carry out installation and commissioning of gNodeB</i>		<i>13</i>	<i>18</i>	<i>-</i>	<i>8</i>
PC18.	install the gNodeB unit in designated indoor or outdoor locations as per planning guidelines, ensuring structural stability and accessibility	2	1.5	-	1
PC19.	install and interconnect gNodeB and microwave equipment, ensuring seamless integration with existing network components	2	1.5	-	1
PC20.	establish reliable power connections, verifying voltage levels and grounding to prevent electrical issues	1	2	-	1
PC21.	identify and configure all equipment and network elements required for optimal operation	1	2	-	0.5
PC22.	install 5G equipment in Non-Standalone (NSA) mode as per the installation design, facilitating coexistence with existing networks	1	2	-	0.5
PC23.	configure network equipment to ensure proper data flow and connectivity as per technical specifications	1	1.5	-	0.5

TEL/N6321: Perform Compliance and Quality Checks	PC24. measure and analyze Quality of Service (QoS) parameters, ensuring they meet the standards for Operations, Administration, and Maintenance (OAM)	1	1.5	-	1
	PC25. execute network rollout activities and perform software upgrades on network nodes post-installation to enhance functionality	1	1.5	-	1
	PC26. onboard and validate enterprise Virtual Network Functions (VNFs) to support diverse service requirements	1	1.5	-	0.5
	PC27. integrate new sites and expand existing ones to alleviate network congestion and improve coverage	1	1.5	-	0.5
	PC28. utilize scientific computation, data acquisition, and processing techniques to ensure successful site installation and commissioning in line with planning guidelines	1	1.5	-	0.5
	Total Marks	30	50	-	20
	<i>Conduct installation and commissioning checks</i>	<i>20</i>	<i>35</i>	<i>-</i>	<i>15</i>
	PC1. verify site commissioning requirements as per network planning guidelines and technical specifications	2	4	-	1.5
	PC2. conduct power-on tests and validate equipment configurations (e.g., gNodeB, microwave equipment, NSA 5G mode, software upgrades)	2.5	4	-	2
	PC3. perform functional tests using industry-standard tools like IXIA, Spirent, and user equipment (UE) simulators	2.5	4	-	2
	PC4. log and analyze test results in predefined report formats to ensure compliance with performance benchmarks	2.5	4	-	2
	PC5. identify and document any technical issues, software bugs, or misconfigurations encountered during the test run	2.5	4	-	1.5
	PC6. coordinate with the technical team to troubleshoot and resolve installation or commissioning issues	2	4	-	1.5
	PC7. conduct a retest after issue resolution to validate corrective measures and confirm site stability	2	4	-	1.5
	PC8. ensure all processes are executed in line with service provider guidelines, and confirm site readiness	2	4	-	1.5
	PC9. document and report the final status of installation and commissioning activities to relevant stakeholders	2	3	-	1.5
	<i>Prepare compliance reports</i>	<i>10</i>	<i>15</i>	<i>-</i>	<i>5</i>
	PC10. identify and maintain required installation, commissioning, and test documentation, ensuring accuracy and completeness	2	3	-	1
	PC11. prepare detailed compliance reports covering functional tests, site-specific deviations, and corrective actions taken	2	3	-	1
	PC12. ensure all reports and logs are stored in appropriate formats (PDF, XML, HTML, DOC) for regulatory and operational use	2	3	-	1
	PC13. submit compliance reports for review and approval by authorized personnel before site handover	2	3	-	1
	PC14. obtain official sign-off from stakeholders confirming compliance, operational readiness, and closure of site installation	2	3	-	1
	Total Marks	30	50	-	20

TEL/N6322: Carry out Acceptance Testing and Site Monitoring	<i>Prepare for Acceptance Testing (AT) and monitoring</i>	<i>6</i>	<i>12</i>	<i>-</i>	<i>4</i>
	PC1. develop a test strategy using available resources, test tools, and simulators based on project requirements	1	2	-	1
	PC2. design comprehensive test cases for 5G Standalone (SA) and Non-Standalone (NSA) features, ensuring alignment with 3GPP standards and client specifications	1	2	-	1
	PC3. analyze and document standard operating procedures for acceptance testing, ensuring clarity for all stakeholders	1	2	-	0.5
	PC4. review and optimize test scripts using automation tools and devise practical approaches to simulate real-world scenarios	1	2	-	0.5
	PC5. set up test environments, including hardware and software configurations, as per finalized test strategy	1	2	-	0.5
	PC6. obtain site-specific documentation, including checklists, site specifications, and safety guidelines, from relevant teams	1	2	-	0.5
	<i>Perform Acceptance Testing of new sites</i>	<i>10</i>	<i>20</i>	<i>-</i>	<i>8</i>
	PC7. execute test cases and validate expected results against actual outcomes	1	2	-	0.5
	PC8. ensure the availability and proper functionality of all test equipment required for acceptance testing	1	2	-	0.5
	PC9. verify the installation of correct software versions on test devices (laptop, tablet, etc.) before testing	1	2	-	1
	PC10. inspect the site for physical compliance, including structural integrity, weatherproofing, equipment placement, grounding, and cabling	1	2	-	1
	PC11. identify and debug field data anomalies, replicating issues in lab environments for further analysis	1	2	-	1
	PC12. perform logical tests, including VSWR levels, alarm connectivity, and end-to-end equipment connectivity	1	2	-	1
	PC13. coordinate with infrastructure engineers and riggers to validate passive infrastructure elements such as antenna alignment, power backup systems, and connectivity	1	2		1
	PC14. validate functional configurations and network parameters against project specifications	1	2		0.5
	PC15. analyze and interpret test results, recommending corrective actions for any deviations	1	2		1
	PC16. collaborate with development and infrastructure teams to resolve site issues effectively	1	2		0.5
	<i>Monitor site performance and traffic</i>	<i>8</i>	<i>11</i>	<i>-</i>	<i>4</i>
	PC17. conduct real-time performance monitoring of radio networks using authorized test instruments	1	1.5	-	0.5
	PC18. perform network health checks, including radio node status, card functionalities, call performance, and sector-wise traffic analysis	1	1.5	-	0.5
	PC19. diagnose and rectify network issues to optimize site performance and ensure service stability	1	1.5	-	0.5

	PC20. take system backups before performing operations such as OMC stop/start, shutdowns, or database re-syncs	1	1.5	-	0.5
	PC21. perform scheduled backups (daily, weekly, monthly) as per maintenance protocols	1	1.5	-	0.5
	PC22. maintain system logs and test tool logs for future debugging and root cause analysis	1	1.5	-	0.5
	PC23. analyze performance trends and identify recurring issues to implement proactive monitoring strategies	1	1		0.5
	PC24. conduct logical fault analysis and ensure timely rectification to minimize downtime	1	1		0.5
	<i>Communicate test results and record findings</i>	6	7	-	4
	PC25. share test results with relevant stakeholders, including the NOC team, supervisors, and project teams	0.5	1		0.5
	PC26. communicate pending site issues (punch points) that need resolution before handover	0.5	1		0.5
	PC27. update site test records and maintain documentation as per organizational standards	1	1		0.5
	PC28. ensure test reports and related documentation are accessible to authorized personnel for audits and inspections	1	1		0.5
	PC29. maintain historical records of test results to support future troubleshooting and network optimization efforts	1	1		0.5
	PC30. provide structured technical feedback to development teams regarding system performance and optimization opportunities	1	1		0.5
	PC31. collect and analyze customer-reported issues to improve site reliability and service quality	1	1		1
	Total Marks	30	50	-	20
TEL/N9109: Follow sustainable practices in telecom infrastructure management	<i>Manage hazardous and e-waste at telecom sites</i>	8	15	-	5
	PC1. identify, segregate, and categorize e-waste (batteries, cables, outdated equipment) and hazardous waste (lead-acid batteries, diesel residues, etc.)	2	4	-	2
	PC2. dispose of or recycle waste following the applicable e-waste management guidelines	2	4	-	1
	PC3. follow safe handling procedures for hazardous materials, including protective gear usage	2	4	-	1
	PC4. maintain logs and records of disposed, recycled, or repurposed telecom waste	2	3	-	1
	<i>Adopt green energy and resource efficiency practices</i>	6	15	-	5
	PC5. optimize power usage through energy-efficient telecom equipment (e.g., LED lighting, smart cooling systems)	2	5	-	2
	PC6. assist in adopting solar-powered telecom towers and integration of hybrid energy systems (e.g. solar power and battery backup)	2	5	-	1
	PC7. monitor and minimize fuel consumption in Diesel Generators (DG) sets through load balancing and regular maintenance	2	5	-	2
	<i>Follow waste reduction strategies</i>	8	10	-	5

	PC8. reduce packaging waste by promoting the reuse of telecom materials and accessories	3	4	-	2
	PC9. follow rainwater harvesting and wastewater reuse practices in telecom cooling systems	3	3	-	2
	PC10. promote structured cabling to reduce cable waste and optimize resource utilization	2	3	-	1
	<i>Ensure compliance with environmental regulations</i>	8	10	-	5
	PC11. follow Central Pollution Control Board (CPCB) guidelines for telecom site waste disposal	3	4	-	2
	PC12. assist in conducting periodic environmental audits to ensure sustainability compliance	3	3	-	2
	PC13. guide co-workers on eco-friendly practices and waste management policies at telecom sites	2	3	-	1
	Total Marks	30	50	-	20
TEL/N9104: Manage Work, Resources and Safety at workplace	<i>Manage learning and self-direction</i>	4	5	-	-
	PC1. develop technical and personal skills to be updated with new technologies prevalent in the industry	2	1	-	-
	PC2. train the team such that they are able to adapt latest products/services in their working environment	1	2	-	-
	PC3. identify opportunities for team building workshops and motivational trainings	1	2	-	-
	<i>Develop critical thinking and problem solving</i>	4	7	-	-
	PC4. guide the team to be accountable for timely completion of tasks	2	3	-	-
	PC5. analyse problems accurately to be able to correctly suggest suitable solutions to the concerned persons	1	2	-	-
	PC6. train the team to estimate the cause of the problem and validate	1	2	-	-
	<i>Perform work as per quality standards</i>	5	9	-	4
	PC7. implement ways to keep immediate as well as team's work area clean and tidy	1	2	-	-
	PC8. maintain efficiency and productivity while performing role/responsibility	1	2	-	2
	PC9. supervise the team to ensure that the work is done as per the assigned and agreed requirements	1	2	-	1
	PC10. create schedules and rosters for the team to ensure they understand individual work requirements	2	3	-	1
	<i>Maintain safe and secure working environment</i>	12	13	-	2
	PC11. identify organisation's health, safety, security policies and procedures	3	3	-	-
	PC12. instruct team to report any identified breaches in health, safety, and security policies and procedures to the designated person	3	3	-	-
	PC13. manage hazards such as illness, accidents, fires or any other natural calamity safely, as per organisation's emergency procedures, within the limits of individual's authority	3	4	-	1

	PC14. report any hazard outside the individual's authority to the relevant person in line with organisational procedures and warn others who may be affected	3	3	-	1
	<i>Material / energy / electricity conservation practices</i>	15	16	-	4
	PC15. implement ways to optimize usage of material including water in various tasks/activities/processes	1	2	-	1
	PC16. supervise the team to ensure responsible use of resources	2	2	-	1
	PC17. motivate the team to carry out routine cleaning of tools, machine and equipment	2	2	-	1
	PC18. guide the team to optimize use of electricity/energy in various tasks/activities/processes	3	4	-	-
	PC19. implement periodic checks of the functioning of the equipment/machine and rectify wherever required	2	2	-	1
	PC20. guide the team to report malfunctioning and lapses in maintenance of equipment	3	2	-	-
	PC21. implement ways to use electrical equipment and appliances properly	2	2	-	-
	Total Marks	40	50	-	10
DGT/VSQ/N0102: Employability Skills (60 Hours)	<i>Introduction to Employability Skills</i>	1	1	-	-
	PC1. identify employability skills required for jobs in various industries	-	-	-	-
	PC2. identify and explore learning and employability portals	-	-	-	-
	<i>Constitutional values – Citizenship</i>	1	1	-	-
	PC3. recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.	-	-	-	-
	PC4. follow environmentally sustainable practices	-	-	-	-
	<i>Becoming a Professional in the 21st Century</i>	2	4	-	-
	PC5. recognize the significance of 21st Century Skills for employment	-	-	-	-
	PC6. practice the 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	-	-
	PC7. use basic English for everyday conversation in different contexts, in person and over the telephone	-	-	-	-
	PC8. read and understand routine information, notes, instructions, mails, letters etc. written in English	-	-	-	-
	PC9. write short messages, notes, letters, e-mails etc. in English	-	-	-	-
	<i>Career Development & Goal Setting</i>	1	2	-	-
	PC10. understand the difference between job and career	-	-	-	-
	PC11. prepare a career development plan with short- and long-term goals, based on aptitude	-	-	-	-
	<i>Communication Skills</i>	2	2	-	-

PC12.	follow verbal and non-verbal communication etiquette and active listening techniques in various settings	-	-	-	-
PC13.	work collaboratively with others in a team	-	-	-	-
	<i>Diversity & Inclusion</i>	1	2	-	-
PC14.	communicate and behave appropriately with all genders and PwD	-	-	-	-
PC15.	escalate any issues related to sexual harassment at workplace according to POSH Act	-	-	-	-
	<i>Financial and Legal Literacy</i>	2	3	-	-
PC16.	select financial institutions, products, and services as per requirement	-	-	-	-
PC17.	carry out offline and online financial transactions, safely and securely	-	-	-	-
PC18.	identify common components of salary and compute income, expenses, taxes, investments etc.	-	-	-	-
PC19.	identify relevant rights and laws and use legal aids to fight against legal exploitation				
	<i>Essential Digital Skills</i>	3	4	-	-
PC20.	operate digital devices and carry out basic internet operations securely and safely	-	-	-	-
PC21.	use e- mail and social media platforms and virtual collaboration tools to work effectively	-	-	-	-
PC22.	use basic features of word processor, spreadsheets, and presentations	-	-	-	-
	<i>Entrepreneurship</i>	2	3	-	-
PC23.	identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research	-	-	-	-
PC24.	develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion	-	-	-	-
PC25.	identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity	-	-	-	-
	<i>Customer Service</i>	1	2	-	-
PC26.	identify different types of customers	-	-	-	-
PC27.	identify and respond to customer requests and needs in a professional manner	-	-	-	-
PC28.	follow appropriate hygiene and grooming standards	-	-	-	-
	<i>Getting ready for apprenticeship & Jobs</i>	2	3	-	-
PC29.	create a professional Curriculum vitae (Résumé)	-	-	-	-
PC30.	search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively	-	-	-	-
PC31.	apply to identified job openings using offline/online methods as per requirement	-	-	-	-
PC32.	answer questions politely, with clarity and confidence, during recruitment and selection	-	-	-	-
PC33.	identify apprenticeship opportunities and register for it as per guidelines and requirements	-	-	-	-
Total Marks		20	30	-	-
Grand Total		210	330	-	110

Annexure 7: 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 SDSM/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 levels 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
- Center 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

The trainee will be tested for the acquired skill, knowledge and attitude through formative/ summative assessment at the end of the course and as this NOS and MC is adopted across sectors and qualifications, the respective AB can conduct the assessments as per their requirements.

Annexure 8: 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
TSSC	Telecom Sector Skill Council
MIMO	Multiple Input, Multiple Output
NFV	Network Function Virtualization
NFVI	Network Function Virtualization Infrastructure
PoC	Proof of Concepts
VNF	Virtualized Network Function
BoM	Bill of Materials
MCB	Miniature Circuit Breakers
CPRI	Common Public Radio Interface
QoS	Quality of Service
OAM	Operations, Administration, and Maintenance

KPI	Key Performance Indicator
CI/CD	Continuous Integration/Continuous Deployment
RRC	Radio Resource Control
RLC	Radio Link Control
CPCB	Central Pollution Control Board

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