

QUALIFICATION FILE

Cloud Application Developer

☒ 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:

IT-ITeS Sector Skills Council NASSCOM (SSC NASSCOM)

Plot No. - 7, 8, 9 & 10

Sector - 126, Noida, Uttar Pradesh - 201303

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Section 1: Basic Details

1.	Qualification Name	Cloud Application Developer													
2.	Sector/s	IT/ITeS													
3.	Type of Qualification: ☐ New ☒ Revised ☐ Has Electives/Options ☐ OEM	NQR Code & version of existing/previous qualification: 2022/ITES/ITSSC/06154 & v3.0	Qualification Name of existing/previous version: Cloud Application Developer												
4.	a. OEM Name b. Qualification Name (Wherever applicable)	NA													
5.	National Qualification Register (NQR) Code &Version (Will be issued after NSQC approval)	QG-05-IT-045902025-V2-NASSCOM, V4.0	6. NCrf/NSQF Level: 5												
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 Cloud Application Developer is responsible for designing, developing, and maintaining secure, resilient, and scalable cloud-native applications. The person gathers and validates functional and non-functional requirements, implements modern architectures and DevSecOps practices, and manages the full application lifecycle using continuous integration and delivery (CI/CD) pipelines. The individual also ensures regulatory compliance, application performance, and efficient use of cloud infrastructure and services.													
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>UG Diploma*</td> <td></td> </tr> <tr> <td>2.</td> <td>3-year diploma** after 10th</td> <td>1.5 years of experience ***</td> </tr> <tr> <td>3.</td> <td>Previous relevant Qualification of NSQF Level 4.5</td> <td>1.5 years of experience ***</td> </tr> </tbody> </table> *UG in Computer Science/ Information Technology/ Electrical and Electronics Engineering **Diploma in CS/IT/Electronics ***Relevant Experience in cloud application development or DevOps		S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)	1.	UG Diploma*		2.	3-year diploma** after 10th	1.5 years of experience ***	3.	Previous relevant Qualification of NSQF Level 4.5	1.5 years of experience ***
S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)													
1.	UG Diploma*														
2.	3-year diploma** after 10th	1.5 years of experience ***													
3.	Previous relevant Qualification of NSQF Level 4.5	1.5 years of experience ***													
10.	Credits Assigned to this Qualification, Subject to Assessment (as per National Credit Framework (NCrF))	17	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 (<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>144</td> <td>246</td> <td>120</td> <td></td> <td>510</td> </tr> <tr> <td>Online</td> <td>144</td> <td>246</td> <td>120</td> <td></td> <td>510</td> </tr> </tbody> </table>				Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)	Classroom (offline)	144	246	120		510	Online	144	246	120		510
Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)																		
Classroom (offline)	144	246	120		510																		
Online	144	246	120		510																		
		(Refer Blended Learning Annexure for details)																					
14.	Aligned to NCO/ISCO Code/s (<i>if no code is available mention the same</i>)	NCO-2015/2512.0204																					
15.	Progression path after attaining the qualification (<i>Please show Professional and Academic progression</i>)	This entry should refer to one or more of the following: Professional Progression: access to related qualification(s) at the next NSQF level - Senior Cloud Application Developer, Cloud Infrastructure Specialist, Cloud Consultant, etc. Academic Progression: access to other qualifications at the same NSQF level – Cloud Infrastructure Analyst, Application Developer - Web & Mobile, etc.																					
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: <i>Visual, Hearing or Speech impairment, Locomotor Disability</i>																					
19.	How Participation of Women will be Encouraged	The program is gender-neutral, promoting equal opportunities for all participants. However, to foster greater participation from women, some organizations have designated a specific number of seats exclusively for female candidates to encourage their involvement.																					
20.	Are Greening/ Environment Sustainability Aspects Covered (<i>Specify the NOS/Module which covers it</i>)	☒ Yes ☐ No (Covered in DGT/VSQ/N0102)																					
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: Namrata Kapur Email: standards@nasscom.in Website: https://nasscom.in Contact No.: 0120-4990111																					
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 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.	Monitor and manage cloud applications and the deployed systems	SSC/N8323, v4.0	Core	5.0	2	30	30	-	-	60	30	50	-	20	100	20
2.	Package software for secure and successful deployment on the cloud	SSC/N8322, v3.0	Core	5.0	3	30	30	30	-	90	30	50	-	20	100	15
3.	Migrate applications to utilize the full potential of the cloud platform	SSC/N8321, v3.0	Core	5.0	2	15	15	30	-	60	30	50	-	20	100	15
4.	Develop and maintain secure, resilient and highly available cloud applications	SSC/N8320, v3.0	Core	5.0	3	15	45	30	-	90	30	50	-	20	100	15
5.	Design the application architecture to ensure scalable, resilient, and fault-tolerant cloud applications	SSC/N8319, v3.0	Core	5.0	3	15	45	30	-	90	30	50	-	20	100	15
6.	Develop functional and non-functional requirements for the defined scope of the application	SSC/N8318, v3.0	Core	5.0	2	15	45	-	-	60	30	50	-	20	100	15
7.	Employability Skills (60 Hours)	DGT/VSQ/N 0102, v1.0	Non-Core	4.0	2	24	36	-	-	60	20	30	-	-	50	5

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)
Duration (in Hours) / Total Marks					17	144	246	120		510	200	330	-	120	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 Engineering/Technology/ Statistics/ Mathematics/Computer Science. Industry & Training Experience: 2 years of industry experience IT/Computer science/Cloud Computing 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 Engineering/Technology/ Statistics/ Mathematics/Computer Science. Industry & Training Experience: 4 years of industry experience IT/Computer science/Cloud Computing 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 Engineering/Technology/ Statistics/ Mathematics/Computer Science. Industry & Training Experience: 2 years of industry experience IT/Computer science/Cloud Computing domain.
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		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 Engineering/Technology/ Statistics/ Mathematics/Computer Science. Industry & Training Experience: 2 years of industry experience IT/Computer science/Cloud Computing 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) (as per NCVET guidelines)	Educational Qualification: Graduate in Engineering/Technology/ Statistics/ Mathematics/Computer Science. Industry & Training Experience: 4 years of industry experience IT/Computer science/Cloud Computing domain. Certification: "Lead Assessor" mapped to the Qualification Pack "MEP/Q2702, v3.0" Minimum accepted score is 90% aggregate.
4.	Assessment Mode (Specify the assessment mode)	The assessment will consist of a blend of hands-on practical evaluations, viva-voce, and online proctored scenario-based multiple-choice questions ensuring a thorough evaluation of the individual's proficiency in learning outcomes, practical understanding, and real-world application of concepts.
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): 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: 1000
6.	Evidence of Concurrence/Consultation with Line Ministry/State Departments: In Process 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)	Annexure 1
2.	Annexure: List of tools and equipment relevant for qualification (Mandatory, except in case of online course)	Annexure 2
3.	Annexure: Detailed Assessment Criteria (Mandatory)	Annexure 6
4.	Annexure: Assessment Strategy (Mandatory)	Annexure 7
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)	NA
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	A command of wide-ranging specialized theoretical and practical skills, involving variable routine and non-routine contexts. Develop Functional & Non-Functional Requirements - Identify business-value user stories (functional) - Capture performance, security, usability targets (non-functional) - Confirm completeness & traceability with stakeholders Design Scalable, Resilient & Secure Cloud Architecture - Create modular, loosely-coupled service architecture - Embed redundancy, auto-scaling, fault-tolerance patterns - Integrate defence-in-depth security controls Develop & Maintain Secure, Highly Available Cloud Apps	A Cloud Application Developer at this level must command advanced theoretical and practical expertise in DevSecOps, automated CI/CD pipelines, and AI-assisted quality-assurance frameworks. They are expected to design cloud-native architectures, package releases for secure deployment, migrate legacy workloads, and continuously monitor live systems using intelligent analytics. Proficiency in debugging, performance tuning, and enforcing defense-in-depth security is essential, alongside the soft skills needed to collaborate and communicate improvements. They should also be adept at building intuitive web/mobile front-ends and scalable back-end services that strictly meet functional, non-functional, UX, and compliance	5.0

	• Build cloud-native code with CI/CD pipelines • Implement HA & self-healing mechanisms • Enforce robust security at code, data & network layers Migrate Applications to Leverage Cloud Potential • Align migration goals with business objectives • Assess source code, architecture & data mappings • Execute re-host/re-platform/re-factor/re-architect paths • Validate via AI/ML-driven testing; enable predictive monitoring Package Software for Secure Cloud Deployment • Build & version application artifacts/containers • Define deployment topology & rollback plan • Automate release using IaC and AI/ML-enhanced pipelines Monitor & Manage Deployed Cloud Systems • Establish SLO-driven monitoring & optimization metrics • Track performance/anomalies across app & infrastructure layers • Apply AI/ML analytics for intelligent insights • Report findings and recommend continuous improvements	requirements. Therefore, this position aligns with NSQF Level 5.	
Professional and Technical Skills/ Expertise/ Professional Knowledge	Wide-ranging factual and theoretical knowledge in broad contexts within a field of work or study. • Know modern DevSecOps principles, toolchains, and best practices for secure software delivery. • Know containerization, orchestration, and Infrastructure-as-Code for packaging and deploying cloud workloads. • Knowledge of CI/CD pipeline design, automation scripts, and AI-driven testing frameworks. • Knowledge of cloud-native architectural patterns that ensure scalability, resilience, and fault-tolerance. • Knowledge of major public-cloud services (compute, storage, networking, identity, monitoring, and serverless). • Understand functional and non-functional requirement elicitation and validation techniques.	The Cloud Application Developer must demonstrate technical skills to implement DevSecOps and automated CI/CD practices for seamless deployment and integration, along with expertise in leveraging AI-driven testing frameworks for comprehensive quality assurance. They should be proficient in identifying and resolving application issues, optimizing performance, and enforcing security across both web and mobile platforms. For cloud-based systems, they must monitor and manage applications to ensure high availability, resilience, and intelligent performance insights. • For front-end development, they should be skilled in creating intuitive, responsive user interfaces aligned with functional and user experience requirements.	5.0

	- Understand secure coding standards, vulnerability assessment, and compliance mandates. - Understand performance-monitoring metrics, anomaly detection, and optimization methodologies. - Understand migration strategies—re-host, re-platform, re-factor, and re-architect—aligned to business goals. - Know scripting languages (e.g., Bash, PowerShell) and at least one programming language (e.g., Python, Java, Node.js). - Knowledge of database paradigms (SQL, NoSQL) and data-integration patterns for cloud applications. - Understand RESTful API design, microservices communication, and event-driven workflows. - Know UX principles for developing user-friendly web and mobile interfaces. - Knowledge of agile frameworks, backlog management, and collaborative tools for cross-functional teamwork.	- For mobile development, they must build reliable, secure native or cross-platform applications. - For back-end engineering, they are responsible for developing scalable, secure services and integrating them seamlessly into the overall cloud application architecture. Hence, this role falls under Level 5.	
Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill	Wide range of cognitive and practical skills required to generate solutions to specific problems in a field of work of study. - Select appropriate cloud platforms, tools, and technologies based on project requirements. - Identify security risks, performance bottlenecks, and optimization opportunities in cloud applications. - Develop effective communication and collaboration skills to work within cross-functional teams. - Create clear documentation, reports, and technical specifications for stakeholders. - Conduct root cause analysis for application failures and implement corrective actions. - Establish best practices for code quality, version control, and deployment automation. - Manage time efficiently to meet project deadlines and agile sprint goals. - Demonstrate problem-solving abilities and adaptability in dynamic cloud environments. - Integrate feedback from users and stakeholders to continuously improve application features and performance. - Build professional networks and maintain ethical standards in all project activities.	The Cloud Application Developer must possess core employability skills including critical thinking, adaptability, and effective problem-solving. They should be prepared to collaborate seamlessly with cross-functional teams, manage cloud development projects with agility, and align technical efforts with broader business objectives. An entrepreneurial mindset is crucial for embracing evolving technologies, driving innovation, and ensuring applications consistently meet performance, security, and user experience standards. Professionalism, teamwork, and a commitment to continuous learning are essential to succeed and grow in this role. Therefore, this role is considered at Level 5.	5.0

	- Evaluate emerging cloud technologies and recommend their adoption for business value. - Cultivate an entrepreneurial mindset by identifying innovation opportunities and proposing scalable solutions.		
Broad Learning Outcomes/Core Skill	Broad Learning Outcomes / Core Skills - Apply DevSecOps principles and automate CI/CD pipelines for efficient cloud application delivery. - Design, develop, and deploy scalable, secure, and resilient cloud-native applications. - Analyze and translate functional and non-functional requirements into effective technical solutions. - Perform application migration using appropriate cloud strategies and AI-driven testing frameworks. - Monitor cloud applications and infrastructure to ensure high availability, performance, and security. - Develop intuitive user interfaces and reliable mobile applications aligned with UX and business needs. - Collaborate effectively within multidisciplinary teams using agile methodologies and professional communication. - Demonstrate problem-solving skills in troubleshooting, debugging, and optimizing cloud applications. - Integrate security best practices and compliance requirements throughout the application lifecycle. - Continuously evaluate emerging cloud technologies and incorporate innovations to enhance application quality.	The Cloud Application Developer applies specialized theoretical knowledge and technical skills to develop secure, scalable, and high-performance web and mobile applications. They are responsible for ensuring application reliability through rigorous testing and quality assurance, optimizing performance, and managing cloud-based systems effectively. This role demands continuous skill development, staying current with evolving technologies, and adopting new tools and frameworks to enhance efficiency and scalability. Hence, this role falls under Level 5.	5.0
Responsibility	The participant is responsible for: - Designing, developing, and deploying secure and scalable cloud-native applications. - Implementing DevSecOps and automated CI/CD pipelines to streamline application delivery. - Migrating existing applications using appropriate cloud strategies and ensuring minimal downtime. - Monitoring application and system performance, identifying anomalies, and recommending improvements. - Applying AI/ML tools for intelligent testing, performance analysis, and predictive monitoring. - Ensuring compliance with security standards and best practices throughout the development lifecycle.	A Cloud Application Developer is responsible for designing, developing, and maintaining secure, resilient, and scalable cloud-native applications. The person gathers and validates functional and non-functional requirements, implements modern architectures and DevSecOps practices, and manages the full application lifecycle using continuous integration and delivery (CI/CD) pipelines. The individual also ensures regulatory compliance, application performance, and efficient use of cloud infrastructure and services. Thus, this role falls under Level 5.	5.0

	• Collaborating effectively with cross-functional teams to align technical solutions with business goals. • Developing user-friendly front-end interfaces and reliable mobile applications that meet UX requirements. • Maintaining comprehensive documentation and communicating technical information clearly to stakeholders. • Continuously updating skills to incorporate emerging cloud technologies and development frameworks.		
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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.	Version Control Systems (e.g., Git, GitLab, Gitea, etc.)	Nos	
2.	CI/CD Tools (e.g., Jenkins, Concourse CI, etc.)	Nos	
3.	DevSecOps Integration (e.g., Jenkins, GitLab CI/CD, etc.)	Nos	
4.	Testing Frameworks (e.g., JUnit, TestNG, etc.)	Nos	
5.	Agile Methodology Tools (e.g., Taiga, OpenProject, etc.)	Nos	
6.	Backend Development Frameworks (e.g., Node.js, Django, Spring Boot, Flask)	Nos	

*Tools are open source

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.	Reckitt Benckiser	Sachin Sharma	Demand Manager	Udyog Vihar, Phase V, Gurgaon, Haryana	9758573077	Sachin.Sharma@rb.com	
2.	PwC India	Yatharth Bhatnagar	Software Engineer	Pune	7276325777	yatharth23@gmail.com	
3.	Dell Technologies	Ariba Syed	Software Engineer	Surat		ariba.syed2017@gmail.com	
4.	Movate	Rohit Kumar Sharma	Manager - Development	A-21, sector 4, Block A, Kailash Colony, Greater Kailash, New Delhi,	9927564461	rohit.sharma.movate@gopangea.com	
5.	Nasdaq Inc	Alfiya Khan	Software Engineer	Unit 201 and 203, Akruti Center Point, MIDC Road, Andheri (East) Mumbai: 400-093, India.	8109690056	alfiya.Khan@Nasdaq.com	
6.	Getronics Solutions India Private Limited	Devendra Prasad	Team Lead - Quality & Performance	Gurgaon	9711592810	devprasad83@gmail.com	
7.	Nagarro	Firoz Zaidi	Senior Developer	Noida	8218191014	firoz@nagarro.com	
8.	Tata Consultancy Services	Ankit Garg	Assistant Consultant	Gurgaon	9808254808	ankit.garg8@tcs.com	
9.	T-Systems ICT India Pvt Ltd	Monica Sharma	Sr. Consultant	Pune	7389777739	monica.sharma@t-systems.com	
10.	Michelin India Private Ltd.	Himanshu Sharma	Business Analyst/Product Owner	Pune		sharmaaz.himanshu@gmail.com	
11.	Siemens Digital Industries Software	Snehal Pandey	Software Engineer	Pune	7387151993	snehalpande93@gmail.com	
12.	Deloitte Support Services Private Limited	Shreya Sharma	Senior Analyst (PMO)	Hyderabad Deloitte Towers, MindSpace Road, P Janardhan Reddy Nagar, Gachibowli, Hyderabad, Telangana 500032	8999530108	shreyasharma5@deloitte.com	

13.	PwC India	Ruchita Panchal	Senior Consultant	Gurgaon	7354047944	ruchita.panchal@pwc@gmail.com	
14.	Conduent	Prince Jain	Sr. Business Analyst	Noida	9013 241797	prince.jain@conduent.com	
15.	Tata Consultancy Services	Sheepra Kaushik	Associate Consultant	Mumbai, India	8433595090	sheepra.sharma@tcs.com	
16.	Infosys Ltd.	Yash Kumawat	Senior product engineer	Bengaluru	8319749784	yash120997@gmail.com	
17.	Capgemini	Shruti Gupta	Manager	Chennai, Tamil Nadu, India	9004343572	shrutivijendra@gmail.com	
18.	Protiviti Global Business Consulting	Sakshi Samtani	Senior Manager	Mumbai	8080536463	sakshi3192@gmail.com	
19.	HCL Tech	Sheeloo Sachan	Technical Specialist	Plot No 3A, Sector 126, Noida, Uttar Pradesh 201301	9717036547	sachan.sheeloo@gmail.com	
20.	Infosys Ltd	Shraddha Sethiya	Technology Analyst	No. 44 & 97/A, Infosys Avenue, Next SBI Bank, Hosur Road, Electronic City- Bengaluru 560100, Karnataka, India	99267854201	shraddha.sethiya@infosys.com	
21.	Sycamore Informatics	Rahul Kumar Kaushik	Product Manager	No. 6, 2nd Floor, 2nd Main, Arekere, Off Bannerghatta Road, Bangalore 560076	8859885973	rahul.kaushik@sycamoreinformatics.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	200	75	10	5	5	5
2026	300	100	15	10	10	10
2027	500	200	25	10	10	10

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
v2.0	2024												
v2.0	2023												
v2.0	2022												

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: Hindi

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	- Books/ e-books - Presentations - Reference Material - Audio / Video Modules	
2	☒ Imparting Soft Skills, Life Skills, and Employability Skills /Mentorship to Learners	- Self-Learning Videos (optional) - Broadcasts (optional) - Mobile Learning - Curated Digital content (optional)	
3	☒ Showing Practical Demonstrations to the learners	- Video Content (optional) - E-Resource library (optional)	
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 - MCQ based tests	
6	☒ Proctored Monitoring/ Assessment/ Evaluation/ Examinations	- Assessment engine for Essays (optional) - Mock test sessions	
7	☒ On the Job Training (OJT)/ Project Work Internship/ Apprenticeship Training	- Online tests - Offline assessments	

Annexure 6: Detailed Assessment Criteria

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

Procter online assessment and case study base questions are included.

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
SSC/N8323: Monitor and manage cloud applications and the deployed systems	<i>Determine monitoring and optimization requirements</i>	6	10	-	4
	PC1. identify performance-impacting factors of the cloud application, such as memory leaks, traffic loads, or latency	2	3	-	1
	PC2. evaluate application performance bottlenecks using historical performance data and logs	2	3	-	2

	PC3. define and document cost, resource utilization, and scalability requirements for optimization	2	4		1
	<i>Monitor application/system performance and anomalies</i>	14	26	-	10
	PC4. define clear metrics (e.g., latency, error rate, CPU/memory usage) to track system health	2	3	-	2
	PC5. configure dashboards and alerts using monitoring tools like CloudWatch, Datadog, or New Relic	2	4	-	2
	PC6. use AI/ML-powered tools to detect anomalies and predict potential system failures	2	4	-	2
	PC7. perform root-cause analysis based on error logs and AI-based diagnostics	2	4	-	1
	PC8. validate cloud resource utilization against cost benchmarks and SLA parameters	2	3	-	1
	PC9. implement automation scripts to respond to predefined thresholds or anomalies	2	4	-	1
	PC10. monitor applications for security breaches and ensure compliance with cloud security policies	2	4	-	1
	<i>Report and recommend performance improvements</i>	10	14	-	6
	PC11. create structured reports with visualizations to summarize performance data and trends	2	4	-	2
	PC12. share performance reports with stakeholders using approved templates or collaboration tools	2	3	-	1
	PC13. provide actionable recommendations for improving performance, cost-efficiency, and scalability	3	4	-	1
	PC14. document any anomalies detected by AI/ML tools and suggest remedial steps	3	3	-	2
	Total Marks	30	50	-	20
SSC/N8322: Package software for secure and successful deployment on the cloud	<i>Build and package cloud applications</i>	10	18	-	6
	PC1. create deployment units from application source code using appropriate build tools	2	4	-	1
	PC2. configure and manage environment-specific service configurations for deployment	2	3	-	2
	PC3. apply secure coding and deployment practices to protect application code and configurations	2	3	-	1
	PC4. use suitable containerization technologies (e.g., Docker) to ensure environment-agnostic deployment	2	4	-	1
	PC5. incorporate AI/ML-based code analysis tools to detect vulnerabilities or inefficiencies during the packaging phase	2	4	-	1
	<i>Plan for deployment</i>	10	14	-	6
	PC6. define deployment strategies based on application architecture, performance, and downtime requirements	4	5	-	2
	PC7. develop and maintain an operational checklist covering procedures, risks, and rollback strategies	3	5	-	2

	PC8. evaluate the use of AI/ML models to forecast deployment risks and recommend optimal deployment windows	3	4	-	2
	<i>Automate deployment with AI/ML tools</i>	10	18	-	8
	PC9. automate the deployment process using CI/CD pipelines, infrastructure-as-code (IaC), and scripting tools	2	5	-	2
	PC10. plan and configure container orchestration platforms (e.g., Kubernetes) to provision, deploy, and manage services	2	5	-	2
	PC11. integrate AI/ML tools for real-time deployment monitoring and anomaly detection	3	4		2
	PC12. coordinate with infrastructure, QA, and support teams to resolve pre- and post-deployment issues	3	4		2
	Total Marks	30	50	-	20
SSC/N8321: Migrate applications to utilize the full potential of the cloud platform	<i>Determine business objectives</i>	4	7	-	2
	PC1. identify business goals and performance requirements using AI-driven assessment tools and analytics dashboards	2	4		1
	PC2. identify AI/ML-based optimization opportunities to reduce cost and enhance performance in cloud migration	2	3		1
	<i>Analyze the source code and architecture</i>	2	3	-	1
	PC3. analyze source code and architecture using automated static/dynamic analysis tools, including AI-powered code scanners for migration compatibility	2	3	-	1
	<i>Map cloud and on-premise data</i>	2	3	-	1
	PC4. perform intelligent data mapping using AI-enabled tools for schema mapping, transformation logic, and minimizing data loss	2	3	-	1
	<i>Re-host and re-platform applications</i>	4	7	-	4
	PC5. identify application components suitable for lift-and-shift using automated cloud migration platforms	2	3	-	2
	PC6. migrate compatible applications with minimal changes, supported by orchestration tools and AI-based dependency resolution	2	4	-	2
	<i>Re-platform OS/middleware</i>	3	3	-	1
	PC7. analyze OS/middleware compatibility and recommend re-platforming options using AI/ML-based migration assistance tools	3	3	-	1
	<i>Re-factor, reengineer, and re-architect applications</i>	8	16	-	8
	PC8. reengineer non-compatible components using AI-assisted code conversion and optimization tools	2	4	-	2
	PC9. refactor application code using ML-powered performance profiling and automated remediation tools	2	4	-	2
	PC10. incorporate cloud-native and AI-first architecture principles for scalability, security, and resilience	2	4	-	2
	PC11. develop API-based integrations for hybrid data migration, utilizing AI for integration testing and dependency mapping	2	4	-	2

	<i>Test using AI/ML-driven test frameworks</i>	4	7	-	2
	PC12. implement AI/ML-driven testing frameworks to validate performance, reliability, and scalability	2	4	-	1
	PC13. conduct predictive unit testing using AI-enabled test case generation and anomaly detection tools	2	3	-	1
	<i>Ensure smooth operations using predictive and intelligent monitoring</i>	3	4	-	1
	PC14. implement intelligent SOPs and AI-based monitoring dashboards for proactive management of cloud operations post-migration	3	4	-	1
	Total Marks	30	50	-	20
SSC/N8320: Develop and maintain secure, resilient and highly available cloud applications	<i>Develop cloud-native applications</i>	13	22	-	8
	PC1. identify and map service dependencies (e.g., databases, message brokers) for deployment in distributed environments like Kubernetes	4	6	-	2
	PC2. design and build resilient applications using fault-tolerant patterns such as retries, circuit breakers, and fallback mechanisms for automated failover and recovery	3	6	-	2
	PC3. ensure horizontal scalability through container orchestration, auto-scaling policies, and effective load balancing	3	5	-	2
	PC4. implement microservices architectures and use API gateways and service meshes (e.g., Istio) for secure, modular, and scalable services	3	5	-	2
	<i>Ensure high availability and resilience</i>	3	6	-	2
	PC5. ensure applications are operational, functional, and usable for fulfilling business or users' requirements by incorporating AI-driven monitoring and alerting tools (e.g., AIOps platforms) to detect anomalies and preemptively resolve downtime risks	3	6	-	2
	<i>Ensure robust security practices</i>	14	22	-	10
	PC6. integrate DevSecOps practices to implement and maintain security controls in compliance with standards (e.g., ISO 27001, GDPR)	5	5	-	2
	PC7. secure data in transit using HTTPS, TLS, or VPNs, and define network security policies	5	5	-	3
	PC8. implement identity and access management using protocols such as OAuth 2.0, OpenID Connect, or SAML, and enforce role-based access control	2	6	-	3
	PC9. secure data at rest using encryption techniques (e.g., AES, RSA) and cloud-native key management solutions (e.g., AWS KMS, Azure Key Vault)	2	6	-	2
	Total Marks	30	50	-	20
	<i>Design cloud application architecture</i>	21	35	-	14
SSC/N8319: Design the application architecture to ensure scalable, resilient,	PC1. identify appropriate cloud deployment and service models (e.g., public, private, hybrid, IaaS, PaaS, FaaS) based on scalability, availability, and workload requirements	3	5	-	2

and fault-tolerant cloud applications	PC2. apply cloud-native architecture patterns using frameworks and guidelines (e.g., twelve-factor apps, well-architected frameworks) to design modular and scalable solutions	3	5	-	2
	PC3. perform impact analysis of architectural decisions using trade-off models (e.g., cost-performance-latency trade-offs) and tools like AWS Well-Architected Tool or Azure Advisor	3	5	-	2
	PC4. implement modern application design paradigms such as serverless, container-based microservices, and event-driven design using technologies like Kubernetes, Lambda, or Azure Functions	3	5	-	2
	PC5. define and document infrastructure as code (IaC) specifications for reliable provisioning using tools such as Terraform or AWS CloudFormation	3	5	-	2
	PC6. design APIs and reusable services using RESTful or GraphQL architectures, and manage them using API gateways and service meshes	3	5	-	2
	PC7. identify components requiring high availability and apply appropriate deployment strategies (e.g., active-active, auto-scaling, multi-zone replication)	3	5		2
	<i>Secure the cloud application</i>	9	15	-	6
	PC8. incorporate security-by-design principles such as Zero Trust Architecture, DevSecOps, and secure SDLC practices in application architecture	3	5	-	2
	PC9. identify potential attack vectors, vulnerabilities, and threats using automated threat modeling tools and AI-powered risk analysis	3	5	-	2
	PC10. define and document recovery strategies including backup automation, self-healing mechanisms, and disaster recovery as code (DRaaS)	3	5		2
	Total Marks	30	50	-	20
SSC/N8318: Develop functional and non-functional requirements for the defined scope of the application	<i>Determine functional requirements</i>	10	17	-	6
	PC1. identify and document functional requirements based on the defined scope of the cloud application and stakeholder expectations	3	5	-	3
	PC2. analyze and describe business processes, user roles, and critical workflows to support functional mapping	3	4	-	1
	PC3. create user stories or use cases to represent interactions between users, services, and the cloud application	2	4	-	1
	PC4. define usability expectations, UI/UX needs, and data model requirements relevant to the cloud application	2	4	-	1
	<i>Determine non-functional requirements</i>	12	21	-	8
	PC5. define system boundaries and external interfaces for integration with third-party or legacy systems	2	5	-	2
	PC6. identify performance, capacity, and scalability expectations (e.g., latency, throughput, concurrent users)	2	5	-	2
	PC7. document target operating environments, including platforms, devices, and network conditions	2	5	-	1
	PC8. specify non-functional needs related to maintainability, portability, interoperability, and disaster recovery	2	3	-	1

	PC9. establish service level agreements (SLAs) and uptime/reliability objectives for the cloud application	2	2	-	1
	PC10. identify compliance, data protection, and regulatory requirements applicable to the system	2	1		1
	<i>Validate requirements</i>	8	12	-	6
	PC11. consolidate and communicate documented requirements for review with stakeholders and technical teams	4	6	-	3
	PC12. validate requirements through walkthroughs, peer reviews, or prototyping sessions to ensure completeness, clarity, and feasibility	4	6	-	3
	Total Marks	30	50		20
DGT/VSQ/N0102: Employability Skills	<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		
	Total Marks	200	330		120

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.

For the Schemes offered on SIDH, batches are created on the SIDH portal by the TP/TC; assessment requests are made through SIDH portal. For Off-SID schemes, assessment requests are received electronically and/or through SSM (State Skill Mission) portals. If it is not a Scheme offered on SIDH or offered on SSM, then assessments requests are made via email.

Upon receiving the request, the batches are aligned for assessments to the Assessment Agency basis the assessment readiness for that particular job role/Qualification, Nano credential/Micro-credential/Standalone NOS.

Following this, an email is sent out to the TP/TC to get the confirmation on the assessment date looping IT-ITeS SSC. Once the confirmation is received, the Assessment Agency assigns a TOA certified assessor or the Proctor for conducting/facilitating the assessments as the case may be. The details of the candidates are verified and recorded at the assessment location for future reference.

QA mechanism is implemented ensuring undertaking from the TC, regular feedback is collected from the TP/TC, geo-tagged photographs of the assessment location and PC wise result analysis to enhance the quality of the assessment blueprint and assessment process thereof.

Testing Environment:

This entire process related to the testing environment is managed by the Assessment Agency in conjunction with the guidelines from NCVET.

Assessment Quality Assurance levels/Framework:

IT-ITeS SSC/NASSCOM is responsible for the development and periodic review of the question bank developed for a specific job role/Qualification, Nano credential/Micro-credential/Standalone NOS. We publish a sample question papers on our website for all stakeholders. The quality of the item bank created by the assessment designer is validated by a minimum of 2 reviewers on the following parameters:

Appropriateness of the question bank in terms of facts, data and information required w.r.t the outcome of the Performance Criteria.

Checks for grammar, spellings, scripting and formatting.

The information provided should be specific enough to remove any ambiguity in answers/solutions to the question.

- Relevance – assessing the topic well w.r.t. the job role.
- Check if the difficulty level of each question is as per the matrix.
- Check if the images used in the question are clear and relevant.
- All variables, symbols and abbreviations used must be declared.
- The correct answer option should be unique, and the options should not be overlapping.

Types of evidence or evidence-gathering protocol:

The time stamped and geotagged photographs of the assessment locations are collected by Proctor/Assessor during the assessment process.

Method of verification or validation:

Monitoring of batches is done as per the due process. Surprise visits are conducted at TC location during the training and assessments.

Method for assessment documentation, archiving, and access.

All assessments conducted by IT-ITeS SSC/NASSCOM, excluding those for schools, are conducted online (browser-based tests with face-to-face proctoring/online proctoring/remote auto proctoring).IT-ITeS SSC/NASSCOM stores the digital repository of the attendance sheets, photographs of assessment centres, result sheets for all assessments except school assessments which are usually available in hard copies along with all relevant artifacts.

NSQC Approved

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
NASSCOM	National Association of Software and Service Companies
IT-ITeS	Information Technology and Information Technology Enabled Services
Gen AI	Generative Artificial Intelligence
IT	Information Technology
API	Application Programming Interface
CI/CD	Continuous Integration/Continuous Deployment
QA	Quality Assurance
UX	User Experience
UI	User
AR	Artificial Intelligence
AI	augmented reality
ML	machine learning
SDLC	Software Development Life Cycle

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