

QUALIFICATION FILE

Cloud Infrastructure Analyst

- ☒ 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: 6

Submitted By:

IT-ITeS Sector Skills Council NASSCOM (SSC NASSCOM)

Plot No. – 7, 8, 9 & 10

Sector – 126, Noida, Uttar Pradesh - 201303

Table of Contents

Section 1: Basic Details 3

Section 2: Module Summary 5

 NOS/s of Qualifications..... 5

 Mandatory NOS/s: 5

 Elective NOS/s: 7

 Optional NOS/s: 7

 Assessment - Minimum Qualifying Percentage..... 7

Section 3: Training Related..... 7

Section 4: Assessment Related..... 8

Section 5: Evidence of the Need for the Qualification 9

Section 6: Annexure & Supporting Documents Check List..... 9

 Annexure: Evidence of Level 10

 Annexure: Tools and Equipment (lab set-up)..... 13

 Annexure: Industry Validations Summary 13

 Annexure: Training & Employment Details 15

 Annexure: Blended Learning 16

 Annexure: Detailed Assessment Criteria 17

 Annexure: Assessment Strategy 20

 Annexure: Acronym and Glossary 22

Section 1: Basic Details

1.	Qualification Name	Cloud Infrastructure Analyst							
2.	Sector/s	IT/ITeS SSC NASSCOM							
3.	Type of Qualification: ☐ New ☒ Revised ☐ Has Electives/Options ☐ OEM	NQR Code & version of the existing /previous qualification: <i>QG-05-IT-01541-2023-V1.1-NASSCOM & Version 3</i>	Qualification Name of the existing/previous version: Cloud Infrastructure Analyst						
4.	a. OEM Name b. Qualification Name (Wherever applicable)	Cloud Infrastructure Analyst							
5.	National Qualification Register (NQR) Code &Version (Will be issued after NSQC approval)	QG-06-IT-03645-2025-V2-NASSCOM & Version 4	6. NCrF/NSQF Level:6						
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	Individuals in this job are responsible for designing, maintaining, evaluating, and testing architectures of cloud products and solutions. Cloud Architects also create enterprise policies and guidelines for cloud implementation and governance. They assess cloud vendors and third-party cloud service providers. They also assist in validating customer proposals and project plans for cloud implementation.							
9.	Eligibility Criteria for Entry for a Student/Trainee/Learner/Employee	a. Entry Qualification & Relevant Experience: **Relevant Experience in job roles related to IT/Computer Science/Cloud Computing The relevant experience would include work, internship and apprenticeship after completion of relevant educational qualification. *PG/UG/Degree/Diploma in (Engg./Science) <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 4th year UG*</td> <td>-</td> </tr> </tbody> </table>		S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)	1	Completed 4th year UG*	-
S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)							
1	Completed 4th year UG*	-							

		<table border="1"> <tr> <td>2</td><td>Completed 3-Year UG*Degree</td><td>1.5 year of relevant experience**</td></tr> <tr> <td>3</td><td>Previous Relevant qualification of NSQF level 5</td><td>3 years of relevant experience* *</td></tr> </table>	2	Completed 3-Year UG*Degree	1.5 year of relevant experience**	3	Previous Relevant qualification of NSQF level 5	3 years of relevant experience* *													
2	Completed 3-Year UG*Degree	1.5 year of relevant experience**																			
3	Previous Relevant qualification of NSQF level 5	3 years of relevant experience* *																			
10.	Credits Assigned to this Qualification, Subject to Assessment (<i>as per National Credit Framework (NCrF)</i>)	20 Credits	11. Common Cost Norm Category (I/II/III) (<i>wherever applicable</i>): II																		
12.	Any Licensing Requirements for Undertaking Training on This Qualification (<i>wherever applicable</i>)	NA																			
13.	Training Duration by Modes of Training Delivery (<i>Specify Total Duration as per selected training delivery modes and as per requirement of the qualification</i>)	☐ Offline Only ☐ Online Only ☒ Blended <table border="1"> <thead> <tr> <th>Training Delivery Mode</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>180</td><td>300</td><td>120</td><td>-</td><td>600</td></tr> <tr> <td>Online</td><td>180</td><td>300</td><td>120</td><td>-</td><td>600</td></tr> </tbody> </table> (Refer Blended Learning Annexure for details)		Training Delivery Mode	Theory (Hours)	Practical (Hours)	OJT (Mandatory) Hours	OJT (Recommended) Hours	Total (Hours)	Classroom (offline)	180	300	120	-	600	Online	180	300	120	-	600
Training Delivery Mode	Theory (Hours)	Practical (Hours)	OJT (Mandatory) Hours	OJT (Recommended) Hours	Total (Hours)																
Classroom (offline)	180	300	120	-	600																
Online	180	300	120	-	600																
14.	Aligned to NCO/ISCO Code/s (<i>if no code is available mention the same</i>)	NCO-2015/ 3513.0301																			
15.	Progression Path After Attaining the Qualification, wherever applicable (<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 Infrastructure Analyst, Senior Site-Reliability Analyst, etc Academic progression: access to other qualifications at the same NSQF level – Site-Reliability Analyst 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 Amenable to Persons with Disability	☒ Yes ☐ No If "Yes", specify applicable type of Disability: Visual, Hearing or Speech impairment, Locomotor Disability	
19.	How participation of women will be encouraged?	The Program is gender neutral although to increase the women participation, organizations are keeping aside few seats to encourage the female candidates	
20.	Are Greening/Environment Sustainability Aspects covered (Specify the NOS/Module which Covers it)	☒ Yes ☐ No, DGT/VSQ/N0102 Employability Skills (60 Hours)	
21.	Is Qualification suitable to be offered in Schools/Colleges	Schools: ☐ Yes ☒ No Colleges ☒ Yes ☐ No	
22.	Name and Contact Details Submitting / Awarding Body SPOC (In case of CS or MS, provide details of both Lead AB & Supporting ABs)	Name: Namrata Kapur Email: standards@nasscom.in Contact No.: 0120-4990111 Website: https://nasscom.in	
23.	Final Approval Date by NSQC: 18 th February 2025	24. Validity Duration: 3 Years	25. Next Review Date: 18 th February 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 Training** **Rec.-Recommended** **Proj.- Project**

S.No.	NOS Module Name	NOS/Module Code & Version (If Applicable)	Core/Non-Core	NCrF/NSQF Level	Credits as per NcrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) (if applicable)
1.	Provision, configure, test, and deploy cloud infrastructure.	SSC/N8313, V4.0	Core	6	05	51:00	69:00	30:00	00:00	150:00	30	50	-	20	100	18
2.	Maintain compute, network, and storage systems deployed on the cloud and ensure backup and recovery	SSC/N8314, V4.0	Core	6	03	20:00	50:00	20:00	00:00	90:00	30	50	-	20	100	18
3.	Automate cloud infrastructure management	SSC/N8315, V4.0	Core	6	03	25:00	45:00	20:00	00:00	90:00	30	50	-	20	100	18
4.	Migrate legacy/on-premises/cloud applications and data to new cloud platforms	SSC/N8316, V4.0	Core	6	03	25:00	45:00	20:00	00:00	90:00	30	50	-	20	100	18
5.	Integrate cloud infrastructure with existing IT systems.	SSC/N8317, V4.0	Core	6	04	35:00	55:00	30:00	00:00	120:00	30	50	-	20	100	18
6.	Employability Skills (60 Hours)	DGT/VSQ/N0102, V1.0	Non-Core	4	02	24:00	36:00	00:00	00:00	60:00	20	30	-	-	50	10
Duration (in Hours)/Total Marks					20	180:00	300:00	120:00	00:00	600:00	170	280	-	100	550	100

Elective NOS/s:

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.																
2.																
Duration (in Hours) / Total Marks																

Optional NOS/s:

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.																
2.																
Duration (in Hours) / Total Marks																

Assessment - Minimum Qualifying Percentage**Assessment - Minimum Qualifying Percentage**

Minimum Pass Percentage – Aggregate at qualification level: 70 % (Every Trainee should score a specified minimum aggregate passing percentage at qualification level 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 (Engineering/ Technology/ Computer Science) Industry & training experience: 2 years of industry experience in Cloud Computing. The industry experience would include work, internship, and apprenticeships undertaken after regular graduation.
----	---	--

		Certification: “Trainer” mapped to the Qualification Pack “MEP/Q2601” 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 (Engineering/ Technology/ Computer Science) Industry & training experience: 4 years of industry experience in Cloud Computing. The full-time experience would include work, internship, and apprenticeship undertaken after regular graduation. Certification: “Master Trainer” mapped to the Qualification Pack “MEP/Q2602” Minimum accepted score is 90% aggregate.
3.	Tools and Equipment Required for the 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 (Engineering/ Technology/ Computer Science) Industry & Training Experience: 2 years of industry experience in Cloud Computing. The full-time experience would include work, internship, and apprenticeship undertaken after regular graduation. Certification: “Assessor” mapped to the Qualification Pack “MEP/Q2701” Minimum accepted score is 80% aggregate.
2.	Proctor’s Qualification and experience in relevant sector (in years) (as per NCVET guidelines), (wherever applicable)	Educational Qualification: Graduate (Engineering/ Technology/ Computer Science) Industry & Training Experience: 2 years of industry experience Cloud Computing. The full-time experience would include work, internship, and apprenticeship undertaken after regular graduation. Certification: “Assessor” mapped to the Qualification Pack “MEP/Q2701” 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 (Engineering/ Technology/ Computer Science)

		Industry & Training Experience: 4 years of industry experience Cloud Computing. The full-time experience would include work, internship, and apprenticeship undertaken after regular graduation. Certification: “Lead Assessor” mapped to the Qualification Pack “MEP/Q2702” Minimum accepted score is 90% aggregate.
4.	Assessment Mode <i>(Specify the assessment mode)</i>	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 <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):
2.	Latest Market Research Reports or any other source (not older than 2 years) (Yes/No):
3.	Government/Industry initiatives/requirement (Yes/No):
4.	Number of industry validations provided:
5.	Estimated number of people to be trained and employed:
6.	Evidence of Concurrence/Consultation with Line/State Departments: 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/NSQF descriptors <i>(Mandatory)</i>	Evidence of Level
----	--	-------------------

2.	Annexure: List of tools and equipment relevant for NOS (Mandatory, except in case of online course)	Tools and Equipment (lab set-up)
3.	Annexure: Detailed Assessment criteria (Mandatory)	Performance Criteria Details
4.	Annexure: Assessment Strategy (Mandatory)	Assessment Strategy
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)	Acronym and Glossary
7.	Annexure: Acronym and Glossary (Optional)	Acronym and Glossary
8.	Supporting Document: Model Curriculum (Mandatory-Public View)	MC_Q8304_Cloud Infrastructure Analyst_V4
9.	Supporting Document: Career Progression (Mandatory- Public View)	Occupational Map-Cloud Computing
10.	Supporting Document: Occupational Map (Mandatory)	Occupational Map-Cloud Computing
11.	Supporting Document: Assessment SOP (Mandatory)	NA
12.	Any Other document you wish to submit:	NA

Annexure: Evidence of Level

NCrF/NSQF Level Descriptors	Key requirements of the job role/ outcome of the qualification	How the job role/ outcomes relate to the NCrF/NSQF level descriptor	NCrF/NSQF Level
Professional Theoretical Knowledge/Process	- Provision, configure, test and deploy cloud infrastructure and related components. - Implement multi-routing, switching and load-balancing solutions to ensure scalability of infrastructure.	The individual in this role needs to have a comprehensive understanding of the infrastructure solution being developed by the organization. The individual should be able to use standard and non-standard processes to define the organisation's requirements and implement solutions for different use cases.	6

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
	• Troubleshoot issues related to the provisioning of compute and storage systems. • Establish and implement services, processes and tools to support cloud infrastructure.		
Professional and Technical Skills/ Expertise/ Professional Knowledge	• Knowledge of different deployment models and schemas • Knowledge of cloud native and cloud first frameworks • Knowledge of load-balancing techniques and tools • Knowledge of solution interoperability • Knowledge of compliance/regulatory standards and policies • Knowledge of infrastructure configurations • Principles of DevSecOps • Knowledge of configuration management tools and orchestration tools to automate systems deployment and management	The individual should have in-depth knowledge of the different types of business requirements from the solution and the various platforms on which the solution can be deployed.	6
Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill	• Leverage appropriate multi-cloud/hybrid cloud architecture and solutions • Build and deploy containers and virtual environments in the cloud	The individual should also be able to write detailed component specifications for the solution and should understand how the components might evolve. They should also know how to write scripts to assess the data being used by the solution.	6

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
	• Implement multi-routing, switching and load balancing solutions to ensure scalability of infrastructure • Backup and maintain storage and systems configuration • Automate infrastructure operations • Recover data and storage in case of system failures.		
Broad Learning Outcomes/Core Skill	• Evaluate changes in cross-border data governance issues, PII regulations, GDPR, security and monitoring standards • Undertake impact analysis on major design options • Develop technical capabilities roadmap for upgrading cloud infrastructure • Identify data quality metrics and guide processes that track and measure performance of deployed systems • Identify potential risks, and define mitigation plans and processes in case of system failures • How to scale the cloud infrastructure.	The individual in this role is responsible for overseeing any changes in cloud infrastructure based on internal and external factors. The individual should be able to undertake impact analysis on the major design options to identify the most suitable one. The individual needs to make plans to scale the cloud infrastructure to accommodate user growth	6
Responsibility	• Make decisions on suitable courses • Pass on relevant information to others • Contribute to the quality of team working • Apply balanced judgments to different situations	The role demands working in a team to create and maintain software. This may involve helping peers with their work from time to time and providing feedback and advice to help improve the quality of their work. Since this role is likely to have people reporting to it, the individual performing this role is	6

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
	- Check your work is complete and free from errors - Ensure that software being developed is deployed across the IoT solution as per specifications	supposed to take responsibility for the output and the development of the entire team.	

Annexure: Tools and Equipment (lab set-up)

List of Tools and Equipment

Batch Size:

S. No.	Tool / Equipment Name	Specification	Quantity for specified Batch size
1	PC/Laptops	NA	
2	Internet Connection	NA	
3	Projector or Large Display	NA	
4	White Board	NA	
5	Cloud Service Providers	Cloudstack, AWS (Free Tier)	
6	Monitoring and analytics tool	Cloudwatch (Free Tier)	
7	Security and Compliance		
8	Cost Management		
9	Development Environment (IDE)	Visual Studio Code	
10	CI/CD Tools	Jenkins	
11	Programming languages	Java, C#, Python, etc.	

Annexure: Industry Validations Summary

Provide summary information of all the industry validation 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	Infosys	Vivek Pilaniya	Program Manager	Infosys, delhi	9718423687	vivek.pilania@infosys.com	https://www.linkedin.com/in/vivekpilania-iimc/?originalSubdomain=in
2	Capegemini	Anuapm Srivastava	Sr. Director	-	-	srivanupamk@gmail.com	https://www.linkedin.com/in/anupamksrivastava/
3	Bluevine	Krishn Gopal Rajput	Sr. Business operation analyst	-	9555863231	krishn.rajput@bluevine.com	https://www.linkedin.com/in/krishn-gopal-rajput-44a30611a/
4	Kwalee	Ravi Chaudhary	Software Engineering consultant	-	8750108744	ravi.chaudhary@kwalee.com	https://www.linkedin.com/in/ravi-xo/
5	wellsfargo	Akash Sah	Senior Quantitative Analytics Specialist		9148506475	akashsah.work@gmail.com	https://www.linkedin.com/in/akash-sah-201b29118/
6	Forbes Advisor	Naveenkumar Janakiraman	Data Research Analyst		9976773109	naveenkumarj4997@gmail.com	
7	iAccept Softwares Pvt Ltd	B Mohan Kumar	Founder		9845208784	mohan@iaccept.in	https://www.linkedin.com/in/bmohankumar/
8	IBM	Arpita Majumder	Tech Consultant	-	7894369677	Arpita.majumder@ibm.com	https://www.linkedin.com/in/arpita-majumder-85612a67/
9	Intellibren	Kailash PD	Director	-	6374700185	kailash@intellibren.com	
10	Kornferry	Ragul Kumar	Data analyst	-	9659964881	ragulblooper143@gmail.com	https://www.linkedin.com/in/ragul-kumar-b2297a171/
11	Mindshare (Inclusive Minds)	Pamindar Singh	Team Lead	-	8713901984	paminder.singh@theminshare.in	https://www.linkedin.com/in/paminder-singh-7990b8101/
12	Synergy Software Systems	Aravind Raj	Functional Consultant	-	+971 555782899	aravindrajjayachandran@gmail.com	https://www.linkedin.com/in/aravind-raj-17554071/

13	Draup	MD Mahabub Alam	Architect-Technology	-	9731517171	mahabubalam@draup.com	https://www.linkedin.com/in/mdmahabubalam/?originalSubdomain=in
14	Delta Electronics India	Kabilan R D	Project Manager	-	7010811080	kabilanrdurai@outlook.com	
15	Engagely	Aniruthan.V	Senior software engineer	-	8098978284	Aniruthan.v@engagely.ai	https://www.linkedin.com/in/aniruthan-venkatavaradhan-79849b203/
16	Barq	Satheesh	Senior Decision Scientist	-	9444218513	satheeshk.sekar@gmail.com	
17	Accolite Digital	Ayushmaan Pandey	Senior Software Engineer	-	8077386365	ayushmaan.pandey@accolitedigital.com	https://www.linkedin.com/in/ayushmaanpandey
18	Q Acadmey	Deepak Gour	Product and Academic Head	-	9893554394	deepak@qacademy.ca	https://ca.linkedin.com/in/deepak-gour-8853968
19	Wipro	Narendra Nande	Practice Director VLSI SW and PSV Practice)	-	9900086708	narendra.nande@wipro.com	https://www.linkedin.com/in/narendra-nande-84402a2/
20	Data Switch	Thilak hariharasudhan A	Product Engineer	-	6393798750	thilakhariharan@gmail.com	https://www.linkedin.com/in/thilak-hariharasudhan-43a89b269/
21	Skillsda	Dr. R Thirukumar Kottaram Ramesh	Head R&D Director-Engg.	-	9500123029/9894801793	thiru@skillsda.com ram@skillsda.com	https://www.linkedin.com/in/kottaram-v-ramesh/ https://in.linkedin.com/in/dr-thirukkumaran-raman-1435a1216

Annexure: Training & Employment Details

Training & Employment Projections:

Year	Total Candidates		Women		People with Disability	
	Estimated Training #	Estimated Employed	Estimated Training #	Estimated Employed	Estimated Training #	Estimated Employed

		Opportunities		Opportunities		Opportunities

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	Trained	Assessed	Certified	Trained	Assessed	Certified

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

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

1.

Content availability for previous version of qualifications:

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

Language in which content is available:

Annexure: Blended Learning

Blended Learning Estimated Ratio & Recommended Tools:

Refer NCVET “Guidelines for Blended Learning for Vocational Education, Training & Skilling” available on:

<https://ncvet.gov.in/sites/default/files/Guidelines%20for%20Blended%20Learning%20for%20Vocational%20Education,%20Training%20&%20Skilling.pdf>

S. No.	Select the Components of the Qualification	List Recommended Tools – for all Selected Components	Offline: Online Ratio
1	☐ Theory/ Lectures - Imparting theoretical and conceptual knowledge	NA	NA
2	☐ Imparting Soft Skills, Life Skills, and Employability Skills /Mentorship to Learners	NA	NA

3	☐ Showing Practical Demonstrations to the learners	NA	NA
4	☐ Imparting Practical Hands-on Skills/ Lab Work/ workshop/ shop floor training	NA	NA
5	☐ Tutorials/ Assignments/ Drill/ Practice	NA	NA
6	☐ Proctored Monitoring/ Assessment/ Evaluation/ Examinations	NA	NA
7	☐ On the Job Training (OJT)/ Project Work Internship/ Candidate Training	NA	NA

Annexure: Detailed Assessment Criteria

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

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
SSC/N8313 Provision, configure, test and deploy cloud infrastructure	PC1. Implement appropriate multi-cloud/hybrid cloud architecture and solutions	2	4	-	2
	PC2. Provision, configure, test, and deploy cloud infrastructure and related components	2	4	-	2
	PC3. Build, configure and deploy containers and virtual environments on the cloud	2	3	-	1
	PC4. Define and predict capacity requirements of the deployed virtual environment	2	4	-	1
	PC5. Implement multi-routing, switching, and load-balancing solutions to ensure the scalability of infrastructure	3	5	-	2
	PC6. Build automated operational processes to ensure scalable cloud deployments	3	5	-	2
	PC7. Ensure interoperability of the cloud platform with other cloud service providers and on-premises/legacy systems	2	3	-	1
	PC8. Implement cloud solutions by adhering to security standards	2	4	-	2
	PC9. Troubleshoot network infrastructure in case of failure	2	4	-	2
	PC10. Troubleshoot issues related to the provisioning of compute and storage systems	3	4	-	2
	PC11. Establish and implement services, processes, and tools to support cloud infrastructure	3	4	-	1
	PC12. Understand the different service models (IaaS, PaaS, SaaS)	2	3	-	1
	PC13. Understand the cloud deployment models (Public, Private, and Hybrid cloud)	2	3	-	1
	Total Marks	30	50	-	20
SSC/N8314 Maintain compute, network, and storage systems	PC1. maintain configuration of compute, storage, and network systems deployed on the cloud	3	5	-	2
	PC2. test new deployment configurations for bugs and errors	3	5	-	2

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
deployed on the cloud and ensure backup and recovery	PC3. update compute and storage systems with security patches and updates	2	3	-	1
	PC4. perform network maintenance, upgrades, and refreshes after consultation with the cloud solution provider	3	4	-	2
	PC5. ensure security protocols are followed across deployed systems	2	3	-	1
	PC6. ensure cloud security and compliance in the systems	2	3	-	1
	PC7. backup and maintain storage and systems configuration data	3	5	-	2
	PC8. execute recovery procedures in case of storage and systems failures	2	4	-	1
	PC9. troubleshoot and resolve issues related to the operation and provisioning of cloud systems using appropriate diagnostic and monitoring tools	2	4	-	2
	PC10. work closely with DevSecOps teams to build and support continuous integration and deployment	2	3	-	1
	PC11. develop new processes to automate infrastructure operations	1	2	-	1
	PC12. develop automation scripts for cloud provisioning and release management	1	2	-	1
	PC13. leverage cloud configuration management tools to automate systems integration, deployment, and management	1	2	-	1
	PC14. Leverage infrastructure automation tools to enable scaling up of infrastructure	3	5	-	2
	Total Marks	30	50	-	20
SSC/N8315 Automate cloud infrastructure management	PC1. Automate and maintain infrastructure configuration and operating procedures for cloud provisioning and release management	4	9	-	3
	PC2. Integrate cloud automation tools with the deployed cloud systems and processes	5	8	-	3
	PC3. Leverage cloud configuration management tools and orchestration tools to automate systems deployment and management	5	8	-	3
	PC4. Implement, manage, and automate load balancing tools to scale up infrastructure on the cloud as and when required	3	5	-	3
	PC5. Leverage tools to automate the container creation process	5	8	-	3
	PC6. Leverage container orchestration tools to automate container deployment and management	4	6	-	3
	PC7. Ensure that automated processes are secure and adhere to the security policies of the organization	4	6	-	2
	Total Marks	30	50	-	20

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
SSC/N8316 Migrate legacy/on-premise/cloud applications and data to new cloud platforms.	PC1. Support the identification and estimation of application remediation and changes in the source code required for the preparation of migration	2	4	-	2
	PC2. Develop plans to create appropriate migration bundles and sequences and prepare data for interfaces	2	4	-	2
	PC3. Create, validate and execute fallback/ rollback plans in case the migration does not perform as intended	2	4	-	2
	PC4. Provision storage disks, virtual storage devices, compute systems, and all other resources on the cloud	2	3	-	1
	PC5. Configure servers including storage & network for migration	2	3	-	1
	PC6. Migrate servers, storage, and databases to the new environment	2	3	-	1
	PC7. Manage the migration of traffic	2	4	-	2
	PC8. Identify and leverage appropriate migration tools to execute migration procedures	2	4	-	2
	PC9. Follow and maintain Standard Operating Procedures (SOPs) for the execution of migration	2	3	-	1
	PC10. Ensure data integrity of the database and other storage information and identify gaps in desired data	2	3	-	1
	PC11. Implement checks and balances and identify protocols to validate successful migration	3	4	-	1
	PC12. Work closely with developers and database admins to align to governance policies and oversee their implementation	2	3	-	1
	PC13. Evaluate proofs-of-concept for server, storage, network, and security technologies to support the cloud infrastructure	1	3	-	1
	PC14. Ensure migrated data adhere to security standards and guidelines as per organizational and regulatory requirements	4	5	-	2
	Total Marks	30	50	-	20
SSC/N8317: Integrate cloud infrastructure with existing IT systems	PC1. Define and document integration needs, users, roles and permissions	3	4	-	1
	PC2. Create a plan to divide the integration activity into different phases	3	4	-	2
	PC3. Map the process flow and the transaction of data in between subsystems	3	4	-	2
	PC4. Plan to block erroneous data from being entered that disrupts the chronological events of a process	3	4	-	2
	PC5. Map upstream and downstream application integration points	3	4	-	2

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
	PC6. Plan and execute data integration elements	2	4	-	2
	PC7. Research on off-the-shelf APIs (Application Programming Interfaces) that supports the integration of sub-systems	2	4	-	2
	PC8. Build APIs to integrate sub-systems	2	4	-	1
	PC9. Carry out unit tests to ensure desired performance from the APIs	2	4	-	1
	PC10. Perform systems tests to verify that the requirements are met	3	5	-	2
	PC11. Ensure the systems are secure before, during, and after integration	2	5	-	2
	PC12. Ensure the right cloud costing strategy is in place for providing a unified view of expenses across different platforms	2	4	-	1
	Total Marks	30	50	-	20
DGT/VSQ/N0102 Employability Skill (60 Hours)	PC1. Introduction to Employability Skills	1	1	-	-
	PC2. Constitutional values – Citizenship	1	1	-	-
	PC3. Becoming a Professional in the 21st Century	2	4	-	-
	PC4. Basic English Skills	2	3	-	-
	PC5. Career Development & Goal Setting	1	2	-	-
	PC6. Communication Skills	2	2	-	-
	PC7. Diversity & Inclusion	1	2	-	-
	PC8. Financial and Legal Literacy	2	3	-	-
	PC9. Essential Digital Skills	3	4	-	-
	PC10. Entrepreneurship	2	3	-	-
	PC11. Customer Service	1	2	-	-
	PC12. Getting Ready for Apprenticeship & Jobs	2	3	-	-
	Total Marks	20	30	-	-
Grand Total Marks		170	280	-	100

Annexure: Assessment Strategy

Assessment Process Overview

Batch Creation & Assessment Request:

Training Providers (TP) or Training Centers (TC), including any other authorized partner of Ministry/ Department create batches / push batches on the SIDH portal. Assessment requests are submitted through the SIDH portal or via email or other media as authorized from time to time. For NON-SIDH schemes, assessment requests are received electronically or through respective State Skill Mission portals. TP/TC initiates the assessment request through the InSDMS portal and processes the payment (where applicable).

Batch Alignment & Confirmation:

Upon payment confirmation, batches are assigned to the Assessment Agency based on factors like:

- Assessment readiness
- Availability of certified assessors for the specific job role
- Assessment capping to an assessment agency as prescribed from time to time for an AB An email communication / prescribed mode communication is sent to TP/TC for confirmation of the assessment date, with IT-ITeS SSC in the loop. Once confirmation is received, the Assessment Agency designates a TOA-certified assessor to conduct or facilitate the assessment.
- Batches are only formed when the Qualification is active.

Candidate Verification & Assessment Execution:

Candidate details are verified and documented at the beginning of the assessment by a certified assessor. A Quality Assurance (QA) mechanism is enforced, requiring an undertaking from the TC. Regular feedback is collected from TP/TC to ensure continuous improvement.

Evidence Collection & Validation:

Proctors or assessors capture date/time-stamped and geo-tagged photographs of the assessment location during the process. Attendance is also ensured offline. A PC-wise result analysis is conducted to refine assessment standards.

Monitoring & Compliance:

Batch monitoring follows established protocols, ensuring adherence to assessment guidelines. Sample based surprise visits are conducted at TC locations during both training and assessments to verify compliance. This structured approach ensures transparency, quality control, and validation throughout the assessment process.

Testing Environment:

- Check the Assessment location, date and time
- 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.

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. We publish an openly accessible sample /model question paper on our website for all stakeholders. The quality of the Question Bank created by the assessment designer is validated by a Subject matter experts on the following parameters:

- Appropriateness of the Question Bank in terms of facts, data and information.
- 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

Annexure: Acronym and Glossary

Acronym

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

Glossary

Term	Description
National Occupational Standards (NOS)	NOS define the measurable performance outcomes required from an individual engaged in a particular task. They list down what an individual performing that task should know and also do.
Qualification	A formal outcome of an assessment and validation process which is obtained when a

	competent body determines that an individual has achieved learning outcomes to given standards
Qualification File	A Qualification File is a template designed to capture necessary information of a Qualification from the perspective of NSQF compliance. The Qualification File will be normally submitted by the awarding body for the qualification.
Sector	A grouping of professional activities based on their main economic function, product, service or technology.