QUALIFICATION FILE

Application Architect - Web & Mobile

☒ 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

<table>
<tr><td>1.</td><td>Qualification Name</td><td colspan="2">Application Architect - Web & Mobile</td></tr>
<tr><td>2.</td><td>Sector/s</td><td colspan="2">IT/ITeS</td></tr>
<tr><td>3.</td><td>Type of Qualification: ☐ New ☒ Revised ☐ Has Electives/Options ☐OEM</td><td>NQR Code & version of existing/previous qualification: 2020/ITES/ITSSC/03793 & v2.0</td><td>Qualification Name of existing/previous version: Application Architect - Web & Mobile</td></tr>
<tr><td>4.</td><td>a. OEM Name
b. Qualification Name
(Wherever applicable)</td><td colspan="2">NA</td></tr>
<tr><td>5.</td><td>National Qualification Register (NQR) Code &Version
(Will be issued after NSQC approval)</td><td>QG-06-IT-03644-2025-V2-NASSCOM & v3.0</td><td>6. NCrF/NSQF Level: 6</td></tr>
<tr><td>7.</td><td>Award (Certificate/Diploma/Advance Diploma/ Any Other (Wherever applicable specify multiple entry/exits also & provide details in annexure)</td><td colspan="2">Certificate</td></tr>
<tr><td>8.</td><td>Brief Description of the Qualification</td><td colspan="2">An Application Architect – Web & Mobile is responsible for designing, maintaining, evaluating, and testing the architectures of web-based and mobile-based products and solutions. The individual develops enterprise-wide policies and guidelines for software implementation, governance, and compliance. Additionally, the person evaluates and selects third-party tools, APIs, and service providers to enhance and optimize software solutions.</td></tr>
<tr><td>9.</td><td>Eligibility Criteria for Entry for Student/Trainee/Learner/Employee</td><td colspan="2">a. Entry Qualification & Relevant Experience:
<table>
<tr><th>S. No.</th><th>Academic/Skill Qualification (with Specialization - if applicable)</th><th>Required Experience (with Specialization - if applicable)</th></tr>
<tr><td>1.</td><td>Completed 4th year UG*</td><td></td></tr>
<tr><td>2.</td><td>Completed 3-Year UG* Degree</td><td>1.5-year relevant experience**</td></tr>
<tr><td>3.</td><td>Previous relevant Qualification of NSQF Level 5</td><td>3-year relevant experience**</td></tr>
</table>
*UG or diploma with courses related to Engg. / Science
**Relevant Experience (including work, internship and apprenticeship) related to Web and Mobile</td></tr>
<tr><td>10.</td><td>Credits Assigned to this Qualification, Subject to Assessment (as per National Credit Framework (NCrF))</td><td>Min: 16
Max: 20</td><td>11. Common Cost Norm Category (I/II/III) (wherever applicable): II</td></tr>
</table>

<table>
<tr><td>12.</td><td>Any Licensing requirements for Undertaking Training on This Qualification (wherever applicable)</td><td>NA</td></tr>
<tr><td>13.</td><td>Training Duration by Modes of Training Delivery (Specify Total Duration as per selected training delivery modes and as per requirement of the qualification)</td><td>Minimum Duration:
☐Offline ☐Online ☒Blended

<table>
<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>
<tr><td>Classroom (offline)</td><td>180</td><td>180</td><td>120</td><td></td><td>480</td></tr>
<tr><td>Online</td><td>180</td><td>180</td><td>120</td><td></td><td>480</td></tr>
</table>
(Refer Blended Learning Annexure for details)

(Refer Blended Learning Annexure for details)</td></tr>
<tr><td>14.</td><td>Aligned to NCO/ISCO Code/s (if no code is available mention the same)</td><td>NCO-2015/NIL</td></tr>
<tr><td>15.</td><td>Progression path after attaining the qualification (Please show Professional and Academic progression)</td><td>This entry should refer to one or more of the following:
Academic progression: access to related qualification(s) at the same NSQF level: Product Manager – Web & Mobile, Senior User Experience Designer, Senior Application Developer Web & Mobile, Senior Test Analyst – Web & Mobile, Senior DevOps Analyst – Web & Mobile
Professional progression: access to related qualification(s) at the next NSQF level: Senior Product Manager – Web & Mobile, Lead User Experience Designer, Senior Application Architect – Web & Mobile, Lead Application Developer – Web & Mobile, Lead Test Analyst – Web & Mobile, Lead DevOps Analyst – Web & Mobile</td></tr>
<tr><td>16.</td><td>Other Indian languages in which the Qualification & Model Curriculum are being submitted</td><td>Hindi</td></tr>
<tr><td>17.</td><td>Is similar Qualification(s) available on NQR-if yes, justification for this qualification</td><td>☐ Yes ☒ No URLs of similar Qualifications:</td></tr>
<tr><td>18.</td><td>Is the Job Role Amenable to Persons with Disability</td><td>☒ Yes ☐ No
If “Yes”, specify applicable type of Disability: Visual, Hearing or Speech impairment, Locomotor Disability</td></tr>
<tr><td>19.</td><td>How Participation of Women will be Encouraged</td><td>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.</td></tr>
<tr><td>20.</td><td>Are Greening/ Environment Sustainability Aspects Covered (Specify the NOS/Module which covers it)</td><td>☒ Yes ☐ No
(Covered in DGT/VSQ/N0102)</td></tr>
<tr><td>21.</td><td>Is Qualification Suitable to be Offered in Schools/Colleges</td><td>Schools ☐ Yes ☒ No Colleges ☒ Yes ☐ No</td></tr>
</table>

22.	**Name and Contact Details of 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://www.sscnasscom.com/	
23.	**Final Approval Date by NSQC: 18-02-2025**	**24. Validity Duration: 3 years**	**25. Next Review Date: 18-02-2028**

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/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.	Define best practices, checklist, reference implementations for application design and development	SSC/N8407, v2.0	Core	6.0	2	10	20	30	-	60	30	50	-	20	100	20
2.	Translate business-level use cases into technical requirements and specifications	SSC/N8306, v3.0	Core	6.0	2	15	15	30	-	60	30	50	-	20	100	20
3.	Define parameters and tools to monitor and manage application performance	SSC/N8410, v2.0	Core	6.0	2	15	15	30	-	60	30	50	-	20	100	20
4.	Ensure compliance of regulatory standards, best practices and policies in	SSC/N8411, v2.0	Core	6.0	2	10	20	30	-	60	30	50	-	20	100	20

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)*
	software development across the organization															
5.	Optimize Revenue, Security, and Accessibility in Web and Mobile Products	SSC/N8452, v1.0	Non-Core	5.0	1	10	20	-	-	30	30	50	-	20	100	5
6.	Employability Skills (60 Hours)	DGT/VSQ/N0102, v1.0	Non-Core	4.0	2	60	-	-	-	60	20	30	-	-	50	5
Duration (in Hours) / Total Marks					**11**	**120**	**90**	**120**		**330**	**170**	**280**	**-**	**100**	**550**	**90**

Elective NOS/s:

Elective 1: Web Application Architecture

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.	Define the architecture for the web-based solution	SSC/N8408, v2.0	Core	6.0	3	40	50	-	-	90	30	50	-	20	100	5
2.	Define security architecture and security controls to ensure security of the web-based solution	SSC/N8412, 2.0	Core	6.0	2	20	40	-	-	60	30	50	-	20	100	5
Duration (in Hours) / Total Marks					**5**	**60**	**90**	**-**	**-**	**150**	**60**	**100**		**40**	**200**	10

Elective 2: Mobile Application Architecture

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.	Define the architecture for the mobile-based solution	SSC/N8409, v3.0	Core	6.0	2	15	45	-	-	60	30	50	-	20	100	5
2.	Define security architecture and security controls to ensure security of the mobile application/solution	SSC/N8413, v2.0	Core	6.0	2	15	45	-	-	60	30	50	-	20	100	5
Duration (in Hours) / Total Marks					**4**	**30**	**90**			**120**	**60**	**100**		**40**	**200**	10

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.)*

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 Engineering/Science/Computer Science/Electronics and Engineering /Information Technology. **Industry & Training Experience: Minimum** 2 years of industry experience in the field of web & mobile. **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 in any discipline, preferably Engineering/Science/Computer Science/Electronics and Engineering /Information Technology. **Industry & Training Experience:** 4 years of industry experience in relevant field of web & mobile. **Certification:** "Master Trainer" mapped to the Qualification Pack "MEP/Q2602". 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 Engineering/Science/Computer Science/Electronics and Engineering /Information Technology. **Industry & Training Experience:** 2 years of industry experience in the field of web & mobile. **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)*	**Educational Qualification:** Graduate in any discipline, preferably Engineering/Science/Computer Science/Electronics and Engineering /Information Technology. **Industry & Training Experience:** 2 years of industry experience in the field of web & mobile. **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 in any discipline, preferably Engineering/Science/Computer Science/Electronics and Engineering /Information Technology. **Industry & Training Experience:** 4 years of industry experience in the field of web & mobile. **Certification:** "Lead Assessor" mapped to the Qualification Pack "MEP/Q2702" Minimum accepted score is 90% aggregate.
4.	**Assessment Mode** *(Specify the assessment mode)*	The assessment shall be conducted through an online proctored format, incorporating scenario-based multiple-choice questions designed to effectively evaluate practical understanding and real-world application of concepts. Additionally, it will include a viva-voice and hands-on practical evaluation to comprehensively assess the individual's proficiency in specific learning outcomes.
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:** 30
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:**	*N0*

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 specialised theoretical and practical skills, involving variable routine and non-routine contexts.** **Preparation for Application Architecture Operations:** • Define Architectural Strategy and Guidelines for Applications • Establish Development Frameworks and Best Practices	An Application Architect must possess advanced knowledge in designing web-based and mobile-based solutions, adhering to best practices and regulatory standards. This includes expertise in defining architectural blueprints, system components, and integrations. They should be skilled in creating reference implementations, managing application performance, and translating business use cases	6.0

	• Ensure Alignment with Business Goals and Technological Trends **Technical Requirements Gathering:** • Collect and Define Technical Requirements through Stakeholder Interaction • Translate Requirements into System and Application Architecture • Identify Non-Functional Requirements (Scalability, Security, Maintainability) **Design and Prototype Finalization:** • Finalize High-Level Design Based on Technical and Functional Requirements • Develop and Validate Architectural Prototypes and Solutions • Ensure Design Meets Usability, Performance, and Security Standards **Performance Optimization and Scalability:** • Define Metrics to Assess Application Performance, Scalability, and Security • Monitor and Optimize Performance, Identifying Bottlenecks • Implement Load Testing and Capacity Planning for Scalability **Technology Stack and Tools Selection:** • Select Appropriate Technology Stack for Frontend, Backend, and Middleware • Evaluate and Implement Tools, Frameworks, and APIs for System Efficiency • Ensure Long-Term Compatibility and Supportability of Technology Choices **Security and Compliance Strategy:** • Design Security Architecture for Data Integrity and Application Compliance • Implement Identity Management, Encryption, and Data Privacy Measures • Align Security Architecture with Industry Standards (e.g., OWASP, GDPR) **Project Architecture Management:** • Create and Maintain an Architecture Blueprint for Ongoing Development	into detailed technical requirements. The architect must also define and implement security controls, ensuring application security and compliance with regulatory standards. This foundational expertise ensures the architect can design scalable, secure, and compliant systems aligned with business goals. Hence, this role falls under Level 6.	

	• Ensure Alignment of Project Goals with Architecture Standards and Timelines • Review Architecture Regularly to Incorporate Feedback and New Requirements **Collaboration and Team Leadership:** • Collaborate with Development, UX, and QA Teams for Seamless Implementation • Provide Technical Leadership in Solving Architectural and Development Challenges • Guide and Mentor Engineering Teams in Adhering to Architectural Guidelines **Problem-Solving and Decision-Making:** • Conduct Root Cause Analysis for Architectural Issues and Performance Gaps • Make Informed Decisions on System Improvements and Innovations • Balance Trade-offs Between Technical Debt, Performance, and Time Constraints **Optimize Revenue, Security, and Accessibility in Web and Mobile Products** • Revenue Strategy • Product Solution Strategy • Customer Requirement Analysis • Product Security • Data Privacy and Security • Accessibility		
Professional and Technical Skills/ Expertise/ Professional Knowledge	**Wide-ranging factual and theoretical knowledge in broad contexts within a field of work or study.** • Knowledge of the architecture and design principles for both web-based and mobile-based applications. • Understand the process of translating business use cases into detailed technical specifications and requirements.	The Application Architect must demonstrate advanced cognitive and technical skills, including the ability to define the system architecture, establish best practices for application development, and oversee security architectures. They should be proficient in tools and parameters to monitor application performance and ensure compliance with regulatory and organizational standards. Experience in cloud platforms, web technologies, and mobile platforms, along with expertise in creating checklists and reference implementations, is critical. Effective	6.0

	• Know the best practices for defining system components and creating reference implementations for application development. • Knowledge of cloud platforms, web technologies, and mobile platforms for scalable architecture design. • Understand the regulatory standards and compliance requirements in software development across organizations. • Know the tools and parameters to monitor application performance and ensure optimal functioning. • Knowledge of security architecture principles and controls to safeguard both web and mobile applications. • Understand the importance of user authentication, authorization, and encryption techniques for secure application design. • Know the methodologies for continuous monitoring and performance tuning of applications in real-time environments. • Understand the strategies to ensure high availability, fault tolerance, and scalability in both web and mobile solutions. • Knowledge of creating checklists, guidelines, and architectural blueprints to streamline the development process. • Understand the importance of optimizing application architectures for both frontend and backend interactions. • Know the protocols and APIs commonly used in mobile and web solutions, such as RESTful APIs and WebSockets. • Knowledge of secure coding practices and techniques to prevent vulnerabilities like SQL injection and cross-site scripting. • Understand the need for performance benchmarking tools to analyze KPIs and improve system performance.	leadership and communication skills are required to guide development teams, ensuring technical specifications and architectural goals are met. Hence, this role falls under Level 6.	
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 the appropriate architecture frameworks and tools for designing scalable and secure web and mobile applications. • Identify key business challenges and develop technical solutions that align with business goals and user requirements. • Develop innovative application architectures that ensure seamless integration between web and mobile platforms.	An Application Architect must possess an entrepreneurial mindset and the ability to adapt quickly to changing business and technology environments. They must proactively define security architectures for both web and mobile applications and ensure solutions meet security and performance benchmarks. Problem-solving, decision-making, and a strategic approach are critical to addressing technical challenges such as system scalability, security vulnerabilities, and performance optimization. Strong leadership, negotiation, and collaboration skills are vital for	6.0

	• Evaluate emerging technologies and trends to incorporate modern solutions that enhance application performance and user experience. • Implement best practices in application lifecycle management, ensuring continuous improvement and optimization. • Design solutions that ensure cross-platform compatibility, enhancing user engagement and minimizing development costs. • Define strategies for handling complex system requirements while maintaining simplicity and performance in architecture. • Select performance monitoring tools to assess real-time application performance and make necessary adjustments. • Develop comprehensive documentation and architectural blueprints to guide development teams through implementation. • Establish security protocols and control measures to safeguard applications against cyber threats and data breaches. • Prioritize key performance indicators (KPIs) for monitoring application adoption, user engagement, and overall performance. • Lead cross-functional teams to ensure efficient collaboration between design, development, and quality assurance teams. • Formulate disaster recovery and business continuity plans to mitigate risks associated with application downtime. • Assess the trade-offs between cost, performance, and scalability to make informed decisions regarding infrastructure. • Advocate for continuous learning and adaptation to new tools, methodologies, and industry standards to maintain a competitive edge.	coordinating with multiple stakeholders, ensuring compliance with both business and regulatory standards while fostering innovation. Therefore, this role is considered at Level 6.	
Broad Learning Outcomes/Core Skill	**Full responsibility for output of group and development** The job holder is expected to communicate complex and specialized information clearly and effectively, both in written and oral forms, to diverse stakeholders, including cross-functional teams, senior management, and external partners. They must possess advanced analytical and problem-solving skills, be capable of interpreting and presenting data and insights to drive informed decision-making, and	The Application Architect leverages advanced theoretical knowledge and specialized technical skills to design secure, scalable, and high-performance solutions for both web and mobile platforms. They are responsible for translating business requirements into architectural designs and technical specifications, ensuring that both security and regulatory standards are met across the entire software development lifecycle. Their role requires continuous	6.0

	demonstrate proficiency in project management and strategic planning. They should be skilled in advanced arithmetic, statistical analysis, and understanding complex systems, as well as applying these skills to optimize processes, enhance quality, and ensure compliance with standards.	learning to stay abreast of emerging technologies and industry trends to maintain architectural integrity and enhance system performance. Hence, this role falls under Level 6.	
Responsibility	• Define standards and best practices • Map and translate requirements • Analyze performance patterns • Monitor and report • Legal/ Regulatory/ Compliance standards • Documentation • Assess tools, technologies, frameworks, and third-party APIs/services • Design scalable architecture design • Identify and mitigate risks • Maintain web solution architecture • Define security architecture and controls • Design architecture for mobile-based solutions • Design user-centric UX/UI interfaces • Optimize mobile application performance • Apply agile methodologies for mobile development • Identify and mitigate risks • Maintain mobile solution architecture • Revenue Strategy • Product Solution Strategy • Customer Requirement Analysis • Product Security • Data Privacy and Security • Accessibility in Web and Mobile Products	An Application Architect – Web & Mobile is responsible for designing, maintaining, evaluating, and testing the architectures of web-based and mobile-based products and solutions. The individual develops enterprise-wide policies and guidelines for software implementation, governance, and compliance. Additionally, the person evaluates and selects third-party tools, APIs, and service providers to enhance and optimize software solutions	6.0

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.	Programming and Design Standards (e.g., GitLab, Gitea, etc.)		
2.	Software Testing Standards (e.g., Selenium, JUnit, etc.)		
3.	Agile and DevOps Integration (e.g., OpenShift, Kubernetes, etc.)		
4.	Risk Assessment (e.g., OpenRisk, RiskScape, etc.)		
5.	CI/CD Performance Monitoring Integration (e.g., Jenkins, CI/CD, etc.)		
6.	Architecture Design (e.g., Draw.io, etc.)		
7.	UX/UI Design (e.g., Pencil Project, Penpot, etc.)		

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.	PwC India	Yatharth Bhatnagar	Software Engineer	Pune	7276325777	yatharth23@gmail.com	
2.	Siemens Digital Industries Software	Snehal Pandey	Software Engineer	Pune	7387151993	snehalpande93@gmail.com	
3.	Dell Technologies	Ariba Syed	Software Engineer	Surat		ariba.syed2017@gmail.com	

4.	Protiviti Global Business Consulting	Sakshi Samtani	Senior Manager	Mumbai	8080536463	sakshi3192@gmail.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.	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	
7.	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	
8.	Capgemini	Shruti Gupta	Manager	Chennai, Tamil Nadu, India	9004343572	shrutivijendra@gmail.com	
9.	Sopra Steria India	Rikan Singh	Team Leader	Plot No. 20 & 21, Seaview Special Economic Zone, Building 4, Sector 135, Noida, Uttar Pradesh 201304	9899507967	rikan.singh@soprasteria.com	
10.	Sycamore Informatics	Rahul Kumar Kaushik	Product Manager	No. 6, 2nd Floor, 2nd Main, Arekere, Off Bannerghatta Road, Bangalore 560076	8859885973	rahul.kaushik@sycamoreinformatics.com	
11.	Movate	Rohit Kumar Sharma	Manager – Development	A-21, sector 4, Block A, Kailash Colony, Greater Kailash, New Delhi,	9927564461	rohit.sharma.movate@gopangea.com	
12.	GlobalLogic	Rashid Muhammad	Associate Manager	Oxygen Business Park SEZ, Tower, 3, Noida-Greater Noida	8881474420	rashid.muhammad@globallogic.com	
13.	HCL Tech	Sheeloo Sachan	Technical Specialist	Plot No 3A, Sector 126, Noida, Uttar Pradesh 201301	9717036547	sachan.sheeloo@gmail.com	
14.	Globant	Rishi Kumar	Analytics	Wing A & B, Level 5, Tower IV, Cybercity, Magarpatta City, Hadapsar, Pune – 411 013. Pune	9717036547	rishi.kumar@globant.com	
15.	Reckitt Benckiser	Sachin Sharma	Demand Manager	Udyog Vihar, Phase V, Gurgaon, Haryana	9758573077	Sachin.Sharma@rb.com	
16.	PWC	Mahbub Khan	Human Capital Lead	Pine Valley 4th Floor, Village, Intermediate Ring Rd, Embassy Golf Links Business Park, Challaghatta, Bengaluru, Karnataka 560071			
17.	Mindtree	Rosalee M Kombial	Vice President-People Function	LTIMindtree Ltd, Global Village, RVCE Post, Mysore Road,Bengaluru-560059, Karnataka.			

18.	Tech Mahindra	Krishna Ramaswami	Head- Human Resources	Gateway Building, Apollo Bunder, Mumbai- 400001			
19.	Capital Numbers	Mrs. Paromita Biswas Panja	HR	Mani Casadona- IT Building, unit Number 8E4, 8th Floor, Plot 2 F/4, Action Area # 2 F New Town, Rajarhat, Kolkata: 700156, West Bengal, India	033 6799 2222	info@capitalnumbers.com	
20.	Merce Technologies	Mr Jayant Bhatt	Operation Head	301 Technocity, X-5/3, T.T.C. Industrial Area, MIDC Industrial Area, Mahape, Navi Mumbai, Maharashtra 400710		accounts@remiges.tech	
21.	eSquare	Md.Ali	Director Operation	5, AC- 709, 5th A Cross Road, Balachandra Layout, HRBR Layout 2nd Block, HRBR Layout, Kalyan Nagar, Bengaluru, Karnataka-560043			
22.	Senrysa Technologies Private Limited	Triparna Mukherjee	HR Business Partner & Leadership Acquisition	6th Floor, TOWER-1, GODREJ WATERSIDE, DP Block, Sector V, Bidhannagar, Kolkata, West Bengal 700091	033 66212222	mail.senrysa.com	
23.	MaxMobility	Arijeet Mukherjee	CEO	2nd Floor, Unit, Block-2b, ECOSPACE BUSINESS PARK, 202B, AA II, Newtown, Kolkata, Chakpachuria, West Bengal 700156		infomaxmibilty.in	
24.	Prerogative Business Solution Pvt.Ltd.	Sujit Singha Roy	Director	9 Victoria Park, GN Block, Sector V, Bidhannagar, Kolkata, West Bengal 700091			
25.	DXC Technology	Lokendra Sethi	Vice President-Human Resources	Hosur Rd, near to THE OTTERA HOTEL, Konappana Agrahara, Electronic City, Bengaluru, Karnataka 560100			
26.	Mass Mutual India	Ravi Tangirala	Head GCC	7th Floor, Block I, BSR IT SEZ, Financial District Nanakramguda Village, Serilingampalle (M), Hyderabad, Telangana 500008			
27.	PI-Square Tech	Ananya Varma	HR Executive	3a, Mindspace Madhapur Rd, Mindspace, Vittal Rao Nagar, HITEC City, Hyderabad, Telangana 500081			
28.	TeckValley India Pvt. Ltd	Chandrika Prasad	Assistant Manager- HR	J-38, Block J, Sector 63, Noida, Uttar Pradesh 201301			

29.	ALLSEC Technologies	Aarav Sharma	Human Resources Department	Khykha Castle, 3rd floor, Ashok Nagar, Bengaluru, Karnataka. Lifestyle busstop to come straight take right Empire hotel walk, 25, Castle St, Ashok Nagar, Bengaluru, Karnataka 560025			
30.	Virtusa	Janardhan S	Global Head-Talent Development	Sy No.115, Nanakramguda Rd, Financial District, Serilingampalle (M), Hyderabad, Telangana 500032			

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	▪	
3	☒Showing Practical Demonstrations to the learners	▪	
4	☒Imparting Practical Hands-on Skills/ Lab Work/ workshop/ shop floor training	▪ Training tools (tools list attached) ▪ Presentations	
5	☒Tutorials/ Assignments/ Drill/ Practice	▪ Online Question Bank ▪ MCQ based tests	
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:

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/N8407: Define best practices, checklist, reference implementations for application design and development	*Standards, best practices, and design documentation*	*30*	*50*	*-*	*20*
	PC1. conduct a comprehensive analysis of the business requirements of the organization, ensuring alignment with both functional and technical goals.	1	2	-	1
	PC2. develop and implement programming and design standards for developing, maintaining, and scaling software solutions, ensuring best practices are followed.	2	3	-	1
	PC3. select appropriate software tools, frameworks, and computer languages that align with organizational objectives, documenting the choices for transparency.	1	3	-	2

	PC4. define standards for the allocation, management, and optimization of IT resources, ensuring alignment with business requirements.	1	2	-	1
	PC5. delineate and document policies for user access management across applications, servers, and databases, ensuring adherence to security protocols.	2	3	-	1
	PC6. establish enterprise processes and performance benchmarks to ensure the satisfactory performance of software products and solutions.	1	3	-	1
	PC7. develop and disseminate guidelines for contributing to open-source projects, if relevant to the organization, ensuring compliance with contribution standards.	2	3	-	1
	PC8. identify and ensure compliance with regulatory standards such as PCI DSS, HIPAA, and GDPR, among others, that the organization must adhere to	1	2	-	1
	PC9. develop a cohesive operational checklist to ensure bug-free deployment and release of software, with measurable quality benchmarks.	2	3	-	1
	PC10. establish robust standards for source code management, control, and versioning, ensuring that code repositories are secure and scalable.	2	2	-	1
	PC11. elucidate and document guidelines for maintaining a repository of successful software implementations for future reference and reuse.	2	3	-	1
	PC12. specify standards and protocols to reference prior implementations when working on new projects to promote consistency and reduce errors.	1	3	-	1
	PC13. define and implement a quality assurance checklist and standards to ensure compliance with software testing and review practices.	2	3	-	1
	PC14. select and enforce appropriate security standards and guidelines such as OWASP or other relevant security frameworks for application development.	2	3	-	1
	PC15. provide a functional overview of design components to the development team, ensuring all stakeholders have a clear understanding of the architectural design and its integration into the system.	1	2	-	1
	PC16. create a cohesive project schedule, including weekly meetings with team members to review progress, address business requirements, and update relevant documentation, ensuring clear and measurable tracking of project deliverables.	2	2	-	1
	PC17. integrate agile software development practices and DevOps principles into the application lifecycle, including iterative development, continuous integration, and automated deployment pipelines.	2	3	-	1
	PC18. apply secure coding practices to ensure the integrity of the application, protect sensitive data, and prevent vulnerabilities throughout the software lifecycle.	2	3	-	1
	PC19. manage the entire application lifecycle, ensuring that all phases are documented and executed according to industry standards	1	2	-	1
	Total Marks	**30**	**50**	**-**	**20**
SSC/N8306: Translate business-level use cases into technical requirements and specifications	*Map and translate requirements*	*30*	*50*	*-*	*20*
	PC1. define the functional and non-functional requirements of the customer, internal departments, or organization, ensuring that all needs are clearly articulated and documented	2	3	-	1
	PC2. document client requirements using standardized templates, ensuring completeness, clarity, and adherence to organizational guidelines	3	3	-	2

	PC3. translate business requirements into clear and actionable technical and IT specifications that align with both business goals and technological constraints	4	4	-	1
	PC4. validate requirements with relevant stakeholders, both internal and external to the organization, ensuring all parties understand and agree on the proposed solution.	2	6	-	2
	PC5. perform business process modeling and mapping to visualize, analyze, and improve the business processes that are relevant to the defined requirements.	3	6	-	2
	PC6. select the appropriate technology stack to meet the defined technical and business requirements, ensuring compatibility, scalability, and alignment with the organization's long- term technology goals.	4	6	-	3
	PC7. conduct a thorough risk assessment for proposed technical solutions, including the evaluation of security, scalability, and regulatory compliance risks	3	6	-	2
	PC8. ensure proper mitigating measures are in place.	3	5	-	2
	PC9. explore the potential of Generative AI (Gen AI) in addressing business needs and technical requirements, considering system integration and its impact on architectural decisions.	4	6	-	3
	PC10. apply prompt engineering techniques to effectively utilize Gen AI for system integration, business process automation, and other technical use cases, ensuring the AI is optimized for specific business challenges.	2	5	-	2
	Total Marks	**30**	**50**	**-**	**20**
SSC/N8410: Define parameters and tools to monitor and manage application performance	*Analyze performance patterns*	*10*	*15*	*-*	*05*
	PC1. analyze the functional and non-functional requirements defined for the software solution, ensuring they are clearly understood and aligned with business goals	2	3	-	1
	PC2. assess the utilization patterns of the product or services and their corresponding IT resources, identifying areas for optimization and improvement	4	6	-	2
	PC3. implement methods to monitor security vulnerabilities in applications, including periodic security audits and assessments to identify potential risks	4	6	-	2
	Monitor and report	*20*	*35*	*-*	*15*
	PC4. establish measurable Key Performance Indicators (KPIs) for monitoring the performance of the product or services, ensuring alignment with organizational objectives	2	4	-	2
	PC5. outline methods for continuously monitoring application and infrastructure resource usage, focusing on performance, availability, and security	2	5	-	3
	PC6. specify standards and templates for reporting usage of applications and resources, ensuring that reports are clear, actionable, and aligned with organizational goals	4	8	-	3
	PC7. identify and implement appropriate tools to monitor the performance of applications, services, and IT resources, ensuring scalability and ease of use	4	8	-	2
	PC8. implement tools for real-time security monitoring, such as Intrusion Detection Systems (IDS), to ensure proactive identification and mitigation of security threats	4	5	-	3
	PC9. integrate performance monitoring into CI/CD pipelines, ensuring quality and security are maintained throughout the software development lifecycle	4	5	-	2
	Total Marks	**30**	**50**	**-**	**20**

SSC/N8411: Ensure compliance of regulatory standards, best practices and policies in software development across the organization	*Legal/regulatory/compliance standards*	*25*	*40*	*-*	*15*
	PC1. conduct an analysis of the organization's business and the market in which it operates	2	4	-	2
	PC2. identify regulatory standards such as PCI DSS, HIPAA, and compliance requirements like GDPR that the organization must adhere to.	4	5	-	2
	PC3. plan and execute audits, activities, and exercises to ensure compliance with governmental regulations, ordinances, and standards.	4	6	-	2
	PC4. collaborate with cross-functional teams to regularly audit IT assets for compliance.	4	5	-	2
	PC5. identify and mitigate compliance risks in software development	3	6	-	2
	PC6. present compliance issues to relevant stakeholders, prioritize issues, and support risk mitigation plans	3	5	-	2
	PC7. monitor data sovereignty and cross-border data regulations to ensure compliance.	3	5	-	2
	PC8. handle and document incidents related to non-compliance, establishing appropriate corrective actions	2	4	-	1
	Documentation	*05*	*10*	*-*	*05*
	PC9. define policies and guidelines on best IT practices that comply with necessary regulatory requirements	1	2	-	1
	PC10. document and implement appropriate regulatory and compliance standards that meet the organization's compliance needs	1	3	-	2
	PC11. create documentation on data sovereignty and cross-border regulations affecting the organization	2	3	-	1
	PC12. develop and maintain a process for tracking compliance issues and mitigation efforts	1	2	-	1
	Total Marks	**30**	**50**	**-**	**20**
SSC/N8452: Optimize Revenue, Security, and Accessibility in Web and Mobile Products	*Revenue Strategy*	*5*	*10*	*-*	*4*
	PC1. develop and implement monetization models (e.g., subscriptions, ads, freemium models) based on market analysis and revenue opportunities	3	5	-	2
	PC2. conduct A/B testing and use analytics tools to evaluate product performance and optimize revenue potential	2	5	-	2
	Product Solution Strategy	*5*	*10*	*-*	*4*
	PC3. design and prioritize product features aligned with business goals, ROI, and customer needs	3	5	-	2
	PC4. coordinate with cross-functional teams to ensure timely and efficient delivery of product solutions	2	5	-	2
	Customer Requirement Analysis	*5*	*10*	*-*	*3*
	PC5. conduct surveys, interviews, and usability testing to gather customer insights and establish continuous feedback loops for iterative improvements	3	5	-	2
	PC6. translate customer requirements into actionable product specifications	2	5	-	1

	Product Security	*5*	*5*	*-*	*3*
	PC7. identify and address potential security threats and vulnerabilities through regular audits, penetration testing, and security protocols (e.g., encryption, secure authentication, API security)	5	5	-	3
	Data Privacy and Security	*5*	*10*	*-*	*3*
	PC8. adhere to global data privacy regulations (e.g., GDPR, CCPA) by establishing clear policies for data collection, storage, and usage	3	5	-	2
	PC9. ensure compliance with data anonymization and encryption standards	2	5	-	1
	Accessibility in Web and Mobile Products	*5*	*5*	*-*	*3*
	PC10. implement and audit accessibility guidelines (e.g., WCAG, ADA) to ensure compliance across web and mobile platforms	3	3	-	2
	PC11. develop inclusive solutions, such as screen reader compatibility, voice commands, and alternative input methods	2	2	-	1
	Total Marks	**30**	**50**		**20**
DGT/VSQ/N0102: Employability Skills	*Introduction to Employability Skills*	*1*	*1*	*-*	*-*
	PC1. identify employability skills required for jobsin various industries	-	-	-	-
	PC2. identify and explore learning andemployability portals	-	-	-	-
	Constitutional values – Citizenship	*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	-	-	-	-
	Becoming a Professional in the 21st Century	*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	-	-	-	-
	Basic English Skills	*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	-	-	-	-
	Career Development & Goal Setting	*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	-	-	-	-
	Communication Skills	*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	-	-	-	-
	Diversity & Inclusion	*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	-	-	-	-
	Financial and Legal Literacy	*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				
	Essential Digital Skills	*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	-	-	-	-
	Entrepreneurship	*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	-	-	-	-
	Customer Service	*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	-	-	-	-
	Getting ready for apprenticeship & Jobs	*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**	**-**	**-**
SSC/N8408: Define the architecture for the web-based solution	*Assess tools, technologies, frameworks, and third-party APIs/services*	*10*	*15*	*-*	*8*
	PC1. delineate the client-side components, server-side components, and other structural components for the web-based solution	1	1	-	1
	PC2. specify the methodologies for evaluating tools, frameworks, and APIs/third-party services to be implemented in the product/solution.	2	2	-	1
	PC3. establish important parameters to be analyzed for shortlisting suitable tools, frameworks, and APIs/third-party service providers.	1	2	-	1
	PC4. collect and compare data on the tools, frameworks, and APIs/third-party service providers under consideration.	1	2	-	1
	PC5. assess long-term dependency risks associated with a tool, framework, API, or service provider to ensure business continuity	2	2	-	1
	PC6. ascertain the security and compliance risks associated with different APIs, tools, frameworks, and third-party services	1	2	-	1
	PC7. assess business continuity for the tools, frameworks, APIs, and service providers, ensuring support and a clear roadmap.	1	2	-	1
	PC8. gauge performance and SLA compliance against business goals for the selected tools, frameworks, APIs, and third-party service providers	1	2	-	1
	Design scalable architecture design	*14*	*20*	*-*	*10*
	PC9. define a suitable technology stack for the web-based solution (such as MEAN, LAMP, MERN, etc.)	1	1	-	1
	PC10. design an appropriate architecture for web applications (such as single-page applications, micro-services, serverless architecture, monolithic architecture, etc.)	1	2	-	1
	PC11. determine a suitable front-end and back-end web framework for building the web solution	2	1	-	1
	PC12. delineate the services (such as database transactions, messaging, etc.) and reusable APIs to be developed as part of the application architecture design.	1	2	-	1
	PC13. define the application boundaries and its integration aspects with adjacent systems	1	2	-	1
	PC14. gather the capacity and scalability requirements of the application	1	2	-	-
	PC15. determine the application's intended operating environment (such as OS types, devices, etc.).	1	2	-	1

	PC16. identify maintainability, portability, and security requirements associated with the application	1	2	-	1
	PC17. specify the data model for the application/solution.	2	1	-	1
	PC18. design application architecture that is scalable, fault-tolerant, highly available, and resilient	1	2	-	1
	PC19. decide on suitable load balancing tools to ensure continuous availability of the web-based solution.	1	1	-	1
	PC20. establish application configuration standards that enable runtime configuration changes to applications/solutions	1	2	-	-
	Identify and mitigate risks	*3*	*6*	*-*	*1*
	PC21. specify the Identity and Access Management (IAM) guidelines	1	2	-	-
	PC22. conduct risk assessments and develop a risk management strategy	1	2	-	-
	PC23. develop a test strategy for the software architecture	1	2	-	1
	Maintain web solution architecture	*3*	*9*	*-*	*1*
	PC24. document and maintain the solution architecture implemented in the organization	1	3	-	-
	PC25. review existing system architecture designs to ensure a balance of service quality, appropriate technology use, and efficient resource utilization	1	3	-	1
	PC26. monitor changes in solution design standards and update architecture accordingly	1	3	-	-
	Total Marks	**30**	**50**	**-**	**20**
SSC/N8412: Define security architecture and security controls to ensure security of the web-based solution	*Define security architecture and controls*	*30*	*50*	*-*	*20*
	PC1. determine the security requirements of the customer/organisation and internal departments	3	5	-	2
	PC2. design the security architecture for the web-based solution.	4	6	-	2
	PC3. research, identify and implement security protocols (such as SSL, TLS, PGP, IPsec etc.) and other best practices to ensure the security of the web-based product.	5	7	-	3
	PC4. identify and adopt security standards (such as OWASP and other applicable standards.), policies and protocols appropriate for the solution	5	7	-	3
	PC5. conduct security tests (such as threat analysis, vulnerability scanning, penetration testing, risk assessment etc.) to identify security vulnerabilities	4	7	-	3
	PC6. establish security safeguards to be implemented (such as access, data, architecture, infrastructure etc.)	3	7	-	3
	PC7. specify the Identity and Access Management (IAM) guidelines.	3	6	-	2
	PC8. elucidate the policies for data leakage prevention (DLP)	3	5	-	2
	Total Marks	**30**	**50**	**-**	**20**
	Assess tools, technologies, frameworks, and third-party APIs/services	*7*	*12*	*-*	*4*

SSC/N8409: Define the architecture for the mobile-based solution	PC1. specify methodologies for evaluating tools, frameworks, and APIs/third-party services to be implemented in the product/solution	1	1	-	0.5
	PC2. establish important parameters to analyze for shortlisting suitable tools, frameworks, and APIs/third-party service providers.	1	2	-	0.5
	PC3. collect and compare data on tools, frameworks, and APIs/third-party service providers under consideration.	1	2	-	1
	PC4. assess long-term dependency risks associated with tools, frameworks, APIs, or service providers to ensure business continuity	1	2	-	0.5
	PC5. understand and evaluate security and compliance risks associated with APIs/tools/frameworks/third-party services	1	2	-	0.5
	PC6. assess business continuity aspects, ensuring support and roadmap alignment with tools, frameworks, APIs, or service providers	1	2	-	0.5
	PC7. gauge performance and SLA compliance of tools, frameworks, APIs, and third-party service providers based on business goals.	1	1	-	0.5
	Design architecture for mobile-based solutions	*11*	*21*		*10*
	PC8. specify target platforms (such as Android, iOS, SailfishOS, KaiOS, etc.) for the mobile-based solution	1	2	-	1
	PC9. define the type of mobile application (native, hybrid, cross-platform) according to functional and non-functional requirements.	1	2	-	1
	PC10. delineate different client-side, server-side, and other structural components of the mobile solution.	1	2	-	1
	PC11. identify types of system-level/hardware-level access provided by target mobile platforms	1	2	-	0.5
	PC12. design a suitable technology stack for the mobile-based solution based on requirements	1	2	-	1
	PC13. prescribe a suitable framework for developing applications for the target mobile platform	1	2	-	1
	PC14. design services (e.g., database transactions, messaging) and re-usable APIs as part of application architecture	1	2	-	1
	PC15. define application boundaries and integration points with adjacent systems	0.5	2	-	1
	PC16. gather capacity and scalability requirements for the mobile application.	0.5	1	-	0.5
	PC17. determine the application's intended operating environment (OS types, devices, etc.).	1	1	-	0.5
	PC18. identify maintainability, portability, and security requirements	0.5	1	-	0.5
	PC19. design the data model for the mobile application/solution	1	1	-	0.5
	PC20. establish application configuration standards that enable runtime configuration changes for flexibility	0.5	1	-	0.5
	Design user-centric UX/UI interfaces	*3*	*4*	-	*2*
	PC21. apply foundational concepts of UX/UI design to ensure a user-friendly and intuitive interface	1	2	-	1

	PC22. design interfaces based on user needs, personas, and customer journeys, ensuring accessibility and responsiveness	1	1	-	0.5
	PC23. integrate feedback from user testing and iterative design to refine and enhance the user experience.	1	1	-	0.5
	Optimize mobile application performance	*3*	*4*	-	*1*
	PC24. implement performance optimization methods such as caching, efficient data management, and lightweight asset usage	1	2	-	-
	PC25. conduct stress and load testing to assess performance under varying conditions.	1	1	-	0.5
	PC26. use mobile-specific performance monitoring tools to identify bottlenecks and implement performance enhancements.	1	1	-	0.5
	Apply agile methodologies for mobile development	*2*	*3*	-	*1*
	PC27. apply Agile methodologies, focusing on iterative development cycles, user feedback, and continuous improvement	1	1	-	0.5
	PC28. break down tasks into sprints and manage backlogs, ensuring timely delivery and adaptability to user feedback.	0.5	1	-	0.5
	PC29. collaborate with cross-functional teams (development, design, QA) to enhance speed and efficiency.	0.5	1	-	-
	Identify and mitigate risks	*2*	*3*		*1*
	PC30. develop a comprehensive test strategy for mobile application architecture	1	1	-	0.5
	PC31. align architecture with regulatory standards and compliance requirements.	0.5	1	-	-
	PC32. identify application dependencies and conduct thorough risk assessments of mobile solutions.	0.5	1	-	0.5
	Maintain mobile solution architecture	*2*	*3*		*1*
	PC33. document and maintain the solution architecture implemented in the organization	0.5	1	-	0.5
	PC34. review existing system architecture designs to ensure a balance between service quality, technology appropriateness, and resource efficiency.	0.5	1	-	-
	PC35. monitor and implement changes in solution design standards to keep the architecture updated.	1	1	-	0.5
	Total Marks	**30**	**50**	**-**	**20**
SSC/N8413: Define security architecture and implement security controls to ensure security of the mobile application/solution	*Define security architecture and controls*	*30*	*50*	*-*	*20*
	PC1. determine the security requirements of the customer/organisation and internal departments	2	4	-	2
	PC2. specify the security provisions of the target mobile platforms.	3	4	-	2
	PC3. test application code for security vulnerabilities.	4	7	-	2
	PC4. secure the application code through appropriate encryptions	3	5	-	2
	PC5. establish identification, authentication and authorization measures	3	5	-	2

	PC6. ensure third-party APIs are secure and comply by the organizations security standards	3	7	-	2
	PC7. identify and adopt security standards (such as OWASP, CVSS, CWE etc.), policies and protocols appropriate for the solution.	4	7	-	2
	PC8. implement appropriate security controls to secure the data stored in the device	2	4	-	2
	PC9. specify Identity and Access Management (IAM) guidelines	3	4	-	2
	PC10. elucidate policies for data leakage prevention (DLP)	3	3	-	2
	Total Marks	**30**	**50**	**-**	**20**
Grand Total		**290**	**480**	**-**	**180**

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.

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 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
KPIs	Key Performance Indicators
IAM	Identity and Access Management
DLP	Data Leakage Prevention
PCI DSS	Payment Card Industry Data Security Standard
HIPAA	Health Insurance Portability and Accountability Act
GDPR	General Data Protection Regulation
OWASP	Open Web Application Security Project
OS	Operating System
SSL	Secure Sockets Layer
TLS	Transport Layer Security
PGP	Pretty Good Privacy
IPsec	Internet Protocol Security
UX	User Experience
UI	User Interface

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