

Qualification Code
QG-05-TL-00470-2023-V1.1-TSSC

CONTACT DETAILS OF THE BODY SUBMITTING THE QUALIFICATION FILE

Name and address of submitting body:

Telecom Sector Skill Council

Estel House, 3rd Floor, Plot No: - 126, Sector 44, Gurugram, Haryana 122003

Name and contact details of individual dealing with the submission

Name: Mr. Satyaveer Gulati

Position in the organization: Chief Technical Officer

Address if different from above: Same as above

Tel number(s): 0124-4148029

E-mail address: satyaveer.gulati@tsscindia.com

List of documents submitted in support of the Qualifications File

1. Model Curriculum

Model Curriculum to be added which will include the following:

- Indicative list of tools/equipment to conduct the training
- Trainers' qualification
- Lesson Plan
- Distribution of training duration into theory/practical/OJT component

NSQF QUALIFICATION FILE

Approved in 20th NSQC Meeting – NCVET-Dated 30 June 2022

SUMMARY

1	Qualification Title: IoT Installation Solution Architect
2	Qualification Code, if any: TEL/Q6216
3	NCO code and occupation: NCO-2015/3114.6216 Network Operation and Maintenance
4	Nature and purpose of the qualification (Please specify whether a qualification is short term or long term): IoT Installation Solution Architect Responsible for conducting the site survey for layout, planning and designing for installation and deployment of IoT sensors/devices, IoT gateways and access layer connectivity in IoT ecosystem to suggest and implement the best IoT solution for the business model. Short Term Course
5	Body/bodies which will award the qualification: Telecom Sector Skill Council
6	Body which will accredit providers to offer courses leading to the qualification: Telecom Sector Skill Council
7	Whether accreditation/affiliation norms are already in place or not, if applicable (if yes, attach a copy): Yes. SIP norms for accreditation and SSC norms for affiliation are available on the SIP portal.
8	Occupation(s) to which the qualification gives access: Network Operation and Maintenance
9	Job description of the occupation: An IoT Installation Solution Architect is responsible for conducting the site survey for layout, planning and designing for installation and deployment of IoT sensors/devices, IoT gateways and access layer connectivity in IoT ecosystem to suggest and implement the best IoT solution for the business model.
10	Licensing requirements: N/A
11	Statutory and Regulatory requirement of the relevant sector (documentary evidence to be provided): N/A
12	Level of the qualification in the NSQF: Level 5
13	Anticipated volume of training/learning required to complete the qualification: 630 Hours
14	Indicative list of training tools required to deliver this qualification: Ping Tool, Tracert, Ipconfig, Ns lookup, Netstat, Putty/Tera Term, Subnet Calculator, Speed Test, IP Scanner, Integrated Circuit, Wi-Fi, Bluetooth etc.

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15		<p>Entry requirements and/or recommendations and minimum age: Completed 2nd year of 3-year/ 4-years UG OR Pursuing 2nd year of 3-year/ 4-years UG and continuing education OR Completed 2nd year of diploma (after 12th) OR Pursuing 2nd year of 2-year diploma after 12th with No Experience required OR 12th pass with 2 years of any combination of NTC/NAC/CITS or equivalent with No Experience required OR Completed 3-year diploma after 10th OR 12th Grade pass with 1-year of NTC/NAC OR Completed 1st year of 3-year/ 4-years UG with 1-year relevant experience OR 12th Grade pass with 2-year relevant experience OR 10th Grade pass with 4-year relevant experience Previous relevant Qualification of NSQF Level 4 with 3-year relevant experience.21 years</p>			
16		<p>Progression from the qualification (Please show Professional and academic progression): Level-6 (Vertical) IoT System ArchitectManager</p>			
17		<p>Arrangements for the Recognition of Prior learning (RPL): RPL will be based on the same approved Qualification Pack and Assessment Criteria mentioned in the Qualification Pack by Telecom SectorSkill Council.</p>			
18		<p>International comparability where known (research evidence to be provided): No</p>			
19		<p>Date of a planned review of the qualification: 30 June 2025</p>			
20		<p>The formal structure of the qualification Mandatory components</p>			
(i)	<p>Title of component and identification code/NOSs/Learning outcomes</p>	<p>Estimated size (learninghours)</p>			<p>Level</p>
1	<p>Bridge Module (Role and Responsibilities of IoT Installation Solution Architect)</p>	20	10	0	5

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2	Perform Market Analysis on Application of IoT	60	80	40	5
3	Supervise installation of IoT devices and system	40	70	40	5
4	Administer acceptance testing and site optimization activities	40	70	40	5
5	Implement Effective Interaction at workplace	10	20	0	5
6	Manage Work, Resources and Safety at workplace	10	20	0	5
	Employability Skills (DGT/VSQ/N0102)	60	00	00	4
	Sub Total (A)	240	270	120	
	Total	630			

SECTION 1
ASSESSMENT

<p>21</p>	<p>Body/Bodies which will carry out an assessment: Telecom Sector Skill Council.</p> <p>Proposed Body/Bodies which will carry out an assessment: The assessment will be carried out via our affiliated assessment body.</p>
<p>22</p>	<p>How will RPL assessment be managed and who will carry it out? The RPL assessment will be managed by TSSC via its affiliate assessment partners.</p>
<p>23</p>	<p>Describe the overall assessment strategy and specific arrangements which have been put in place to ensure that assessment is always valid, reliable and fair and show that these are in line with the requirements of the NSQF.</p> <p>The emphasis is on practical demonstration of skills and knowledge based on the performance criteria. The assessment papers are developed by Subject Matter Experts (SME) available with the Assessment Agency as per the performance and assessment criteria mentioned in the Qualification Pack. The assessment papers are also checked for the various outcome-based parameters such as quality, time taken, precision, tools & equipment requirement etc. The assessment results are backed by evidence collected by assessors.</p> <ol style="list-style-type: none"> 1. The assessor needs to collect a copy of the attendance for the training done under the scheme. The attendance sheets are signed and stamped by the In-charge / Head of the Training Centre. 2. The assessor needs to verify the authenticity of the candidates by checking the photo ID card issued by the institute as well as any one Photo ID card issued by the Central/Government. The same needs to be mentioned in the attendance sheet. In case of suspicion, the assessor should authenticate, and cross verify trainee's credentials in the enrolment form. 3. The assessor needs to punch the trainee's roll number on all the test pieces. 4. The assessor can take a photograph of all the students along with the assessor standing in the middle and with the center name/banner at the back as evidence. 5. The assessor also needs to carry a photo ID card. <p>The assessment agencies are instructed to hire assessors with integrity, reliability and fairness. Each assessor shall sign a document with its assessment agency by which they commit themselves to comply with the rules of confidentiality and conflict of interest, independence from commercial and other interests that would compromise impartiality of the assessments.</p>

Please attach most relevant and recent documents giving further information about assessment and/or RPL.

Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.

ASSESSMENT EVIDENCE

Complete a grid for each component as listed in “Formal structure of the qualification” in the Summary.

NOTE: this grid can be replaced by any part of the qualification documentation which shows the same information – i.e., Learning Outcomes to be assessed, assessment criteria and the means of assessment.

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24. Assessment evidence

Title of Component:

CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role: IoT Installation Solution Architect

Qualification Pack TEL/Q6216

Sector Skill Council Telecom Sector Skill Council

Guidelines for Assessment

1. Criteria for assessment for each Qualifications Pack will be approved by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2. The assessment for the theory part will be based on knowledge bank of questions approved by the SSC.
3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/ option NOS/ Set of NOS.
4. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).
5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criterion.
6. To pass the Qualifications Pack, every trainee should score a minimum of 70% of aggregate marks.
7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
TEL/N6260: Perform Market Analysis on Application of IoT				
<i>Assess industry trends</i>	9	22	-	4
PC1. guide team to collect data pertaining to the industry trends from various reliable sources	1	2	-	1
PC2. analyse the data about changing technologies in the industry	1	2	-	
PC3. identify the products, customers, competitors and landscapes to ensure the reliability/preferences on IoT devices	1	3	-	
PC4. ensure that standards and practices of emerging IoT technologies is regularly updated	1	2	-	1

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PC5. collate the information on latest industry trends and requirements of the company	1	3	-	0
PC6. determine the logistics operations and rethink the ways to approach businesses	1	2	-	1
PC7. identify the type of industry (Agriculture, Transport, Port, etc.) for implementation of technology	1	2	-	0
PC8. analyse the geographical aspects using various identification and map reading parameters	1	3	-	0
PC9. evaluate the range of access technology and frequency band required as per site/customer specifications	1	3	-	1
<i>Collate data on leading suppliers of IoT device</i>	5	12	-	1
PC10. identify the leading suppliers and key solution providers	1	2	-	0
PC11. evaluate the supplier on the basis of solution performance, geographic availability, support services and security, etc..	1	2	-	0
PC12. identify various ways for a business to operate with a real-time data that is constantly changing	1	3	-	1
PC13. ensure that the machines providing real-time data perform as per requirements and specifications	1	2	-	0
PC14. analyse the existing and potential tools to improve business strategies for selling and integrating IoT devices	1	3	-	0
<i>Analyse existing services and derive potential need for a new IoT service</i>	7	20	-	3
PC15. assess the key optimization requirements of the business (assets, operations, or workforce) for choosing an IoT solution	1	3	-	0
PC16. analyse the application of IoT for the current business model and the benefits that could be achieved in the value chain	1	4	-	0
PC17. evaluate the potential of stakeholders and customers for the business	1	2	-	0
PC18. assess the usage of sensors and other IoT devices within different fields like agriculture, home-automation and	1	3	-	1

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healthcare, and their usage in the current business model				
PC19. analyse the extent of monitoring business processes and improvement of the customer experience (CX) based on application of latest IoT devices from varied competitors	1	4	-	1
PC20. advise a suitable IoT solution for the business model based on requirements and specifications and collated market data	1	2	-	1
PC21. analyse the application server requirements by creating a connectivity diagram of the required devices to the application server	1	2	-	0
<i>Prepare a budget (cost workout) for implementing the IoT solution in the business</i>	4	11	-	2
PC22. prepare two cost workouts–cost of implementation/integration of IoT devices and services into the current business and ongoing operational costs	1	3	-	0
PC23. categorize the implementation/integration costs involved such as hardware (firmware & devices and their testing tools/equipment) and software (dashboard, cloud platform, analytics etc.)	1	3	-	1
PC24. prepare an explanatory report for the costs and discuss with the authorized personnel before implementation of the IoT solution	1	3	-	0
PC25. get a sign-off on all budgets/costs before starting IoT solution implementation	1	3	-	1
NOS Total	25	65	-	10
TEL/N6261: Supervise in Installation of IoT devices and system				
<i>Advise the team on pre-installation activities</i>	23	40	-	10
PC1. ensure that the team checks the basic connectivity, network and communication protocols.	2	2	-	1
PC2. assess the availability of the basic elements required for of installation, set up and connection of the devices	2	4	-	1
PC3. identify the embedded systems such as processors, controllers, sensors and communication hardware and analyse their effectiveness for collating and monitoring data	3	4	-	1

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PC4. list the types of micro-processor boards like Arduino, raspberry-Pi, customized platforms etc. that need to be integrated as per the current required setup on site	2	3	-	1
PC5. identify the microcontrollers that need to be installed and their quantity and application in the current business model	2	4	-	1
PC6. analyse the working of sensors like humidity sensor, temperature sensor, gyro meter, accelerometer, video surveillance cameras etc. and check their requirement for the current business model	3	6	-	1
PC7. assess the application of sensors fitment to the business model	1	2	-	1
PC8. evaluate the implementation of advanced features including Data Distribution Service (DDS), Advanced Message Queuing Protocol (AMQP), Constrained Application Protocol (CoAP), etc.	3	5	-	1
PC9. analyse the application of short- and long-range protocols including 3G/4G, 6LowPAN, LoRa, Bluetooth, RFID, ZigBee, etc.	3	6	-	1
PC10. identify the application of communication protocols in IoT and which ones are required for the current scenario/specification	2	4	-	1
<i>Inspect routing for connected devices</i>	7	15	-	5
PC11. identify the software/hardware requirement into IoT solution to achieve optimal output	2	4	-	1
PC12. ensure requirements fits the architecture of IoT and map it to the business need	1	2	-	1
PC13. identify the working process including Data Collection, Device Integration, Real-Time Analytics, Application and Process Extension	1	3	-	1
PC14. detect the application of devices to collect, send and act on data	1	2	-	1
PC15. collect the list of frameworks used in IoT including Amazon Web Services (AWS) IoT, Arm Mbed IoT, Microsoft's Azure IoT, Google's Brillo/Weave, Calvin,	2	4	-	1

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IBM Watson IoT platform, Artik Cloud IoT platform etc.				
NOS Total	30	55	-	15
TEL/N6262: Administer Acceptance testing and site optimization activities				
<i>Supervise acceptance testing (AT) of the integrated IoT solution in the business</i>	11	26	-	5
PC1. identify the requirements of the implemented solution to carry out acceptance testing	1	3	-	1
PC2. assess the validation of all installed sensors and other IoT devices as per the business model	1	2	-	0
PC3. supervise the testing based on the desired/expected output as identified in requirement analysis stage or as per user specifications	1	3	-	1
PC4. ensure that the team checks the alarms and faults, if any	1	2	-	0
PC5. validate the proper functioning of test tools	1	2	-	0
PC6. guide team to check system settings, alarms, and nodal functionality of the system	1	2	-	0
PC7. evaluate the efficiency of system test for IoT application to measure baseline noises, movements and noise sensitivity and ensure its efficiency and effectiveness in the business model	1	3	-	1
PC8. deliver test results to site engineers/authorized personnel to validate the efficiency of the IoT solution	1	2	-	0
PC9. analyse the strength of the current network security and test its resistance to hacking and other attacks	1	3	-	1
PC10. guide the team to test security of integrated IoT devices against outsider invasion or other threats	1	2	-	0
PC11. validate the integrity of the IoT solution and level of data security of IoT devices, and take necessary actions	1	2	-	1
<i>Monitor optimization of devices</i>	9	22	-	6
PC12. supervise optimization activities such as performing basic walk tests as per requirements to get optimum, expected results	1	2	-	0
PC13. analyse the current network traffic and data used by IoT devices and apply optimization techniques to improve transfer and monitoring of data	1	4	-	1

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PC14. observe and regulate IoT traffic from installed devices and its services	1	2	-	0
PC15. optimize device integration to the IoT application(s) to achieve expected results even with higher volume of traffic (or control plane messages)	1	3	-	1
PC16. guide team to achieve optimization of IoT devices and network using efficient mechanism to boost the control plane messaging from IoT devices	1	3	-	1
PC17. confirm that site is assessed for safety and emergency readiness compliance as defined by the organization	1	2	-	1
PC18. use personal protection equipment like helmets, knee pads, safety boots, safety glasses and trench guards as required and defined by the protocol of the organization	1	2	-	0
PC19. ensure that the team works while considering environmental conditions and hazards like Earth Potential Rise (EPR)	1	2	-	1
PC20. supervise data transfer over a network without human-to-human or human-to-computer interaction	1	2	-	1
<i>Prepare reports and logs</i>	5	12	-	4
PC21. record all data and monitoring activities from sensors into pre-defined online logs/formats	1	2	-	1
PC22. maintain records of all test results in prescribed formats	1	2	-	0
PC23. ensure all reports are timely maintained and reported to authorized personnel	1	2	-	1
PC24. manage all installation and functioning of all active and passive equipment and ensure the status is maintained in a logbook periodically	1	3	-	1
PC25. ensure that all records are validated and verified timely to check for any anomalies in the working of IoT devices	1	3	-	1
NOS Total	25	60	-	15
TEL/N9103: Implement Effective Interaction at workplace				
<i>Interact effectively with superiors</i>	2	9	-	1
PC1. interpret work requirements from the superior and customers	1	2	-	-

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PC2. report any unforeseen disruptions or delays to superiors and/or concerned person	1	2	-	1
PC3. achieve productivity and quality of work as per the company procedure	-	5	-	-
Interact effectively with colleagues and customers	13	27	-	5
PC4. explain the work requirements and the scope of work to the team	2	3	-	-
PC5. communicate information using different techniques such as face-to-face, telephonic and written means	2	4	-	1
PC6. co-ordinate with team to integrate work as per requirements	-	4	-	1
PC7. respect colleagues and customers and communicate taking care of their personal spaces	-	3	-	-
PC8. find solutions to work related difficulties with mutual agreement with colleagues and customers	3	3	-	-
PC9. resolve conflicts within the team at work to achieve smooth workflow	-	4	-	1
PC10. motivate team members to put organizational goals over individual goals	3	4	-	1
PC11. encourage the team to provide feedback on any issues facing them	3	2	-	1
Respect differences of gender and ability	15	24	-	4
PC12. ensure personal behaviour of self and team is conducted taking gender and disability of the person into consideration	2	4	-	-
PC13. demonstrate sensitivity towards gender and person with disability while communicating	2	3	-	1
PC14. list the different types of disabilities with their respective issues	2	3	-	1
PC15. provide help to PwD team members in overcoming any challenges faced in work	2	3	-	-
PC16. use inclusive language irrespective of the disability and the gender of the person	2	3	-	1
PC17. treat all colleagues and co-workers equally	2	3	-	-

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PC18. respect personal space of colleagues and co-workers	3	5	-	1
NOS Total	30	60	-	10
TEL/N9104: Manage work, resources, and safety at workplace				
Manage learning and self-direction	4	5	-	-
PC1. develop technical and personal skills to be updated with new technologies prevalent in the industry	2	1	-	-
PC2. train the team such that they are able to adapt latest products/services in their working environment	1	2	-	-
PC3. identify opportunities for team building workshops and motivational trainings	1	2	-	-
Develop critical thinking and problem solving	4	7	-	-
PC4. guide the team to be accountable for timely completion of tasks	2	3	-	-
PC5. analyse problems accurately to be able to correctly suggest suitable solutions to the concerned persons	1	2	-	-
PC6. train the team to estimate the cause of the problem and validate	1	2	-	-
Perform work as per quality standards	5	9	-	4
PC7. implement ways to keep immediate as well as team's work area clean and tidy	1	2	-	-
PC8. maintain efficiency and productivity while performing role/responsibility	1	2	-	2
PC9. supervise the team to ensure that the work is done as per the assigned and agreed requirements	1	2	-	1
PC10. create schedules and rosters for the team to ensure they understand individual work requirements	2	3	-	1
Maintain safe and secure working environment	12	13	-	2
PC11. identify organisation's health, safety, security policies and procedures	3	3	-	-
PC12. instruct team to report any identified breaches in health, safety, and security policies and procedures to the designated person	3	3	-	-

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PC13. manage hazards such as illness, accidents, fires or any other natural calamity safely, as per organisation's emergency procedures, within the limits of individual's authority	3	4	-	1
PC14. report any hazard outside the individual's authority to the relevant person in line with organisational procedures and warn others who may be affected	3	3	-	1
Material / energy / electricity conservation practices	15	16	-	4
PC15. implement ways to optimize usage of material including water in various tasks/activities/processes	1	2	-	1
PC16. supervise the team to ensure responsible use of resources	2	2	-	1
PC17. motivate the team to carry out routine cleaning of tools, machine and equipment	2	2	-	1
PC18. guide the team to optimize use of electricity/energy in various tasks/activities/processes	3	4	-	-
PC19. implement periodic checks of the functioning of the equipment/machine and rectify wherever required	2	2	-	1
PC20. guide the team to report malfunctioning and lapses in maintenance of equipment	3	2	-	-
PC21. implement ways to use electrical equipment and appliances properly	2	2	-	-
NOS Total	40	50	-	10
Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
DGT/VSQ/N0102: Employability Skills (60 Hours)				
<i>Introduction to Employability Skills</i>	1	1	-	-
PC1. identify employability skills required for jobs in various industries	-	-	-	-
PC2. identify and explore learning and employability portals	-	-	-	-
<i>Constitutional values – Citizenship</i>	1	1	-	-

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PC3. recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.	-	-	-	-
PC4. follow environmentally sustainable practices	-	-	-	-
<i>Becoming a Professional in the 21st Century</i>	2	4	-	-
PC5. recognize the significance of 21st Century Skills for employment	-	-	-	-
PC6. practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life	-	-	-	-
<i>Basic English Skills</i>	2	3	-	-
PC7. use basic English for everyday conversation in different contexts, in person and over the telephone	-	-	-	-
PC8. read and understand routine information, notes, instructions, mails, letters etc. written in English	-	-	-	-
PC9. write short messages, notes, letters, e-mails etc. in English	-	-	-	-
<i>Career Development & Goal Setting</i>	1	2	-	-
PC10. understand the difference between job and career	-	-	-	-
PC11. prepare a career development plan with short- and long-term goals, based on aptitude	-	-	-	-
<i>Communication Skills</i>	2	2	-	-
PC12. follow verbal and non-verbal communication etiquette and active listening techniques in various settings	-	-	-	-
PC13. work collaboratively with others in a team	-	-	-	-
<i>Diversity & Inclusion</i>	1	2	-	-
PC14. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC15. escalate any issues related to sexual harassment at workplace according to POSH Act	-	-	-	-

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<i>Financial and Legal Literacy</i>	2	3	-	-
PC16. select financial institutions, products and services as per requirement	-	-	-	-
PC17. carry out offline and online financial transactions, safely and securely	-	-	-	-
PC18. identify common components of salary and compute income, expenses, taxes, investments etc	-	-	-	-
PC19. identify relevant rights and laws and use legal aids to fight against legal exploitation	-	-	-	-
<i>Essential Digital Skills</i>	3	4	-	-
PC20. operate digital devices and carry out basic internet operations securely and safely	-	-	-	-
PC21. use e- mail and social media platforms and virtual collaboration tools to work effectively	-	-	-	-
PC22. use basic features of word processor, spreadsheets, and presentations	-	-	-	-
<i>Entrepreneurship</i>	2	3	-	-
PC23. identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research	-	-	-	-
PC24. develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion	-	-	-	-
PC25. identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity	-	-	-	-
<i>Customer Service</i>	1	2	-	-
PC26. identify different types of customers	-	-	-	-
PC27. identify and respond to customer requests and needs in a professional manner.	-	-	-	-
PC28. follow appropriate hygiene and grooming standards	-	-	-	-
<i>Getting ready for apprenticeship & Jobs</i>	2	3	-	-
PC29. create a professional Curriculum vitae (Résumé)	-	-	-	-
PC30. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively	-	-	-	-

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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	-	-	-	-
NOS Total	20	30	-	-

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Outcomes to be assessed/NOSs to be assessed	Assessment criteria for the outcome
Provided in the above section	
Means of assessment 1 <ol style="list-style-type: none">1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.3. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training centre (as per assessment criteria below.)4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training centre based on these criteria.	
Means of assessment 2 Add boxes as required.	
Pass/Fail <ol style="list-style-type: none">1. To pass the Qualification File, every trainee should score a minimum of 70% in every Qualification.2. In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification File.	

NSQF QUALIFICATION FILE

SECTION 2

25. EVIDENCE OF LEVEL

Title/Name of qualification/component: IoT Installation Solution Architect Level: 5			
NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relate to the NSQF level descriptors	NSQF Level
Process	<p>Diagnose and rectify faults in the IoT System</p> <ul style="list-style-type: none"> • Troubleshooting for IoT devices and connectivity issues. • Carry out repair and maintenance activities of IoT devices and peripherals at client premises. • Fix the identified bugs and defects 	<p>The individual is responsible to attend to the client queries and providing appropriate solutions following the organisational standards.</p> <p>The individual must have attention to detail along with strong analytical and problem-solving skills.</p> <p>Hence, this is level 5.</p>	5
Professional knowledge	<p>Factual and theoretical knowledge in broad contexts within a field of work or study.</p> <ul style="list-style-type: none"> • Technical specifications of products and processes • Knowledge about the basics of IoT technology and networking fundamentals • Maintenance standards/guidelines 	<p>The individual should have a good understanding of technical specifications and functionalities of products and processes, knowledge functioning techniques and knowledge about managing concern/issues, and standards/guidelines of IoT services</p> <p>Hence, this is level 5.</p>	5

NSQF QUALIFICATION FILE

Title/Name of qualification/component: IoT Installation Solution Architect Level: 5			
NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relates to the NSQF level descriptors	NSQF Level
Professional skill	<p>A range of cognitive and practical skills is required to generate solutions to specific problems in a field of work or study.</p> <ul style="list-style-type: none"> • Knowledge of cloud computing platforms, such as AWS, Azure, GCP, etc. • Providing technical support concerning the Internet of Things (IoT) systems. • Troubleshooting Network and Devices. 	<p>The individual is required to have a range of technical skills, to be competitive in this job role, such as strong analytical and problem-solving skills, verbal and written communication skills. Comply with standards related to IoT Services.</p> <p>Hence, this is level 5.</p>	5
Core skill	<p>Core Domain Skill:</p> <ul style="list-style-type: none"> • Understand the functioning of 3G/4G/5G connectivity modules on IoT devices. • Understand the scripting languages, such as BASH, Python or JavaScript • Able to understand the benefits of using Structured Query Language (SQL) • Knowledge of the functioning and process of different types of microcontrollers/processors. 	<p>The individual is required to the process of diagnosing and resolving common and complex IoT device-related issues, assisting in providing IoT solutions to clients and carrying out documentation activities.</p> <p>Hence, this is level 5.</p>	5

NSQF QUALIFICATION FILE

Title/Name of qualification/component: IoT Installation Solution Architect Level: 4			
NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relates to the NSQF level descriptors	NSQF Level
Responsibility	<p>Responsibility for completing the work assigned and reporting the same as per standards.</p> <ul style="list-style-type: none"> • Understand the job role and follow the organisational policy • Record and report about the work status • Follow safety regulations at workplace • Work along with colleagues and supervisors 	<p>The individual is responsible for understanding customer queries/concern and appropriately suggesting the right/suitable product.</p> <p>Hence Level 5.</p>	5

NSQF QUALIFICATION FILE

SECTION 3 **EVIDENCE OF NEED**

26	What evidence is there that the qualification is needed? What is the estimated uptake of this qualification and what is the basis of this estimate? <ol style="list-style-type: none">1. Feedback from industry was collected with respect to roles for which qualification pack development was to be prioritized.2. Skills Gap analysis reports for industry demand Training duration w.r.t current and potential capacity envisaged for potential supply
27	Recommendation from the concerned Line Ministry of the Government/Regulatory Body. To be supported by documentary evidence <p>We have received the approval from the Line Ministry department.</p>
28	What steps were taken to ensure that the qualification(s) does (do) not duplicate already existing or planned qualifications in the NSQF? Give justification for presenting a duplicate qualification <p>List of Approved and Under-Development Q-Files was checked prior to commencement the work as per NQR website.</p>
29	What arrangements are in place to monitor and review the qualification(s)? What data will be used and at what point will the qualification(s) be revised or updated? Specify the review process here <ul style="list-style-type: none">• Agencies have been appointed by the SSC to interact with training providers to gather feedback in implementation• Monitoring of results of assessments• Employer feedback will be sought post-placement• A formal review is scheduled by 2025

Please attach most relevant and recent documents giving further information about any of the topics above.

Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.

SECTION 4

EVIDENCE OF PROGRESSION

- | | |
|-----------|---|
| 30 | What steps have been taken in the design of this or other qualifications to ensure that there is a clear path to other qualifications in this sector? <ol style="list-style-type: none">1. Endorsed and accepted by the Industry players2. Formal recognition from the Industry players3. Horizontal and vertical mobility options are available |
|-----------|---|

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