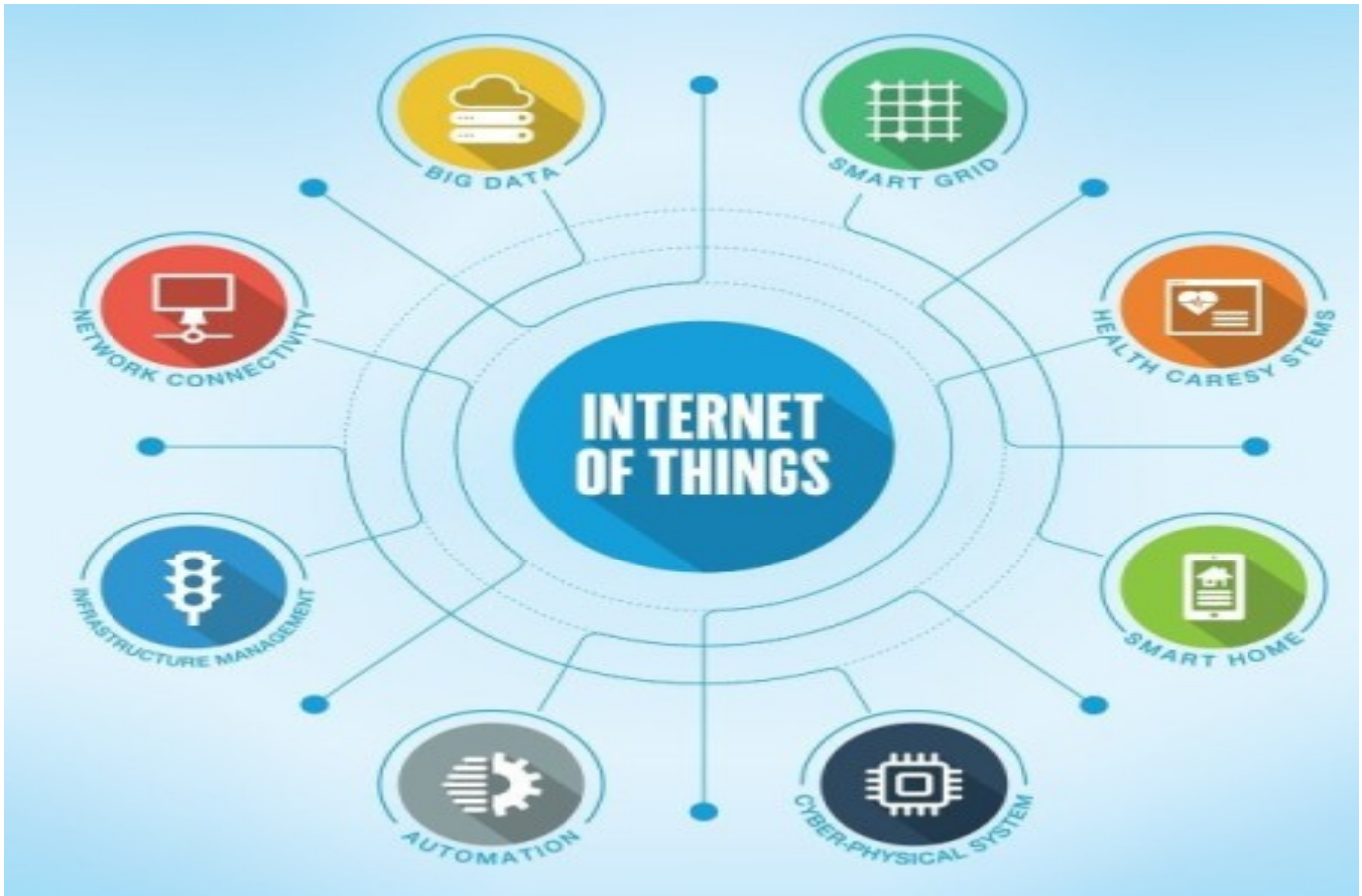


Qualification Pack



Telecom Technician - IoT Devices/Systems

QP Code: TEL/Q6210

Version: 5.0

NSQF Level: 4

Telecom || 3rd Floor, Plot No 126, Sector - 44
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Qualification Pack

Contents

TEL/Q6210: Telecom Technician - IoT Devices/Systems	3
<i>Brief Job Description</i>	3
Applicable National Occupational Standards (NOS)	3
<i>Compulsory NOS</i>	3
<i>Qualification Pack (QP) Parameters</i>	3
TEL/N6234: Install and configure IoT devices at customer premises	5
TEL/N6236: Perform level 1 troubleshooting of IoT devices	11
TEL/N9105: Follow sustainable practices in telecom infrastructure installation	15
DGT/VSQ/N0101: Employability Skills (30 Hours)	20
Assessment Guidelines and Weightage	25
<i>Assessment Guidelines</i>	25
<i>Assessment Weightage</i>	26
Acronyms	27
Glossary	28

Qualification Pack

TEL/Q6210: Telecom Technician - IoT Devices/Systems

Brief Job Description

A Telecom Technician - IoT Devices/Systems is responsible for the on-site installation, configuration, and maintenance of IoT devices (nodes). This includes setting up communication links between nodes and controllers (gateways) and ensuring connectivity to central servers or devices via external communication networks such as WiFi, 4G, or 5G on GSM/CDMA. The individual is also responsible for performing first-level Diagnostics and Investigation (DI) or Damage Recovery (DR).

Personal Attributes

The individual should possess strong analytical and problem-solving skills, along with effective communication abilities. The person should be adaptable to new technologies, detail-oriented, and capable of innovative thinking.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [TEL/N6234: Install and configure IoT devices at customer premises](#)
2. [TEL/N6236: Perform level 1 troubleshooting of IoT devices](#)
3. [TEL/N9105: Follow sustainable practices in telecom infrastructure installation](#)
4. [DGT/VSQ/N0101: Employability Skills \(30 Hours\)](#)

Qualification Pack (QP) Parameters

Sector	Telecom
Sub-Sector	Network Managed Services
Occupation	Network Operation and Maintenance
Country	India
NSQF Level	4
Credits	17
Aligned to NCO/ISCO/ISIC Code	NCO-2015/3114.0803

Qualification Pack

Minimum Educational Qualification & Experience	12th grade Pass OR Completed 2nd year of the 3-year diploma after 10 (in Electronics and Communication Engineering/ Computer Engineering/ IoT and Smart Devices/ Embedded Systems Design Domain) OR 10th grade pass with 3 Years of experience in IoT Devices/ Optical Fiber/Broadband Domain OR Previous relevant Qualification of NSQF Level (3.0) with 3 Years of experience in IoT Devices/ Optical Fiber/Broadband Domain OR Previous relevant Qualification of NSQF Level (3.5) with 1.5 years of experience in IoT Devices/ Optical Fiber/Broadband Domain
Minimum Level of Education for Training in School	10th Class
Pre-Requisite License or Training	NA
Minimum Job Entry Age	17 Years
Last Reviewed On	NA
Next Review Date	30/04/2028
NSQC Approval Date	08/05/2025
Version	5.0
Reference code on NQR	QG-04-TL-04081-2025-V2-TSSC
NQR Version	2

Qualification Pack

TEL/N6234: Install and configure IoT devices at customer premises

Description

This unit is about installing IoT nodes, configuring devices, uploading appropriate software to microcontrollers, defining communication protocols, and establishing communication links for data transfer between devices using short-range and long-range communication networks.

Scope

The scope covers the following :

- Analyze requirements for IoT devices
- Install IoT devices at suitable points/locations
- Configure devices to ensure effective data transfer
- Test connections between nodes, gateways, and backend servers

Elements and Performance Criteria

Analyse requirements for IoT devices

To be competent, the user/individual on the job must be able to:

- PC1.** identify various types of microprocessor boards (Arduino, Raspberry Pi, custom platforms) and microcontrollers used in IoT installations
- PC2.** determine the functions, characteristics, and applicability of different types of IoT sensors (temperature, humidity, pressure, motion, surveillance cameras, etc.) and actuators
- PC3.** select appropriate short-range (Bluetooth, Zigbee, Wi-Fi) and long-range (5G, NB-IoT, LoRaWAN) communication protocols for IoT applications
- PC4.** check the components, pin configurations, and interconnectivity provisions of microcontroller boards for input/output and power supply
- PC5.** differentiate between IoT nodes and gateways, assessing their roles in data transmission and network management

Install IoT devices at suitable points/locations

To be competent, the user/individual on the job must be able to:

- PC6.** determine optimal installation points based on environmental factors, power supply availability, and network signal strength
- PC7.** establish communication line connectivity using suitable nodes, gateways, Ethernet, 5G, NB-IoT, or Wi-Fi networks
- PC8.** mount IoT devices securely at identified locations using industry-approved techniques and tools
- PC9.** connect and secure power supply sources while ensuring proper grounding and compliance with safety standards
- PC10.** implement signal strength testing and RF spectrum analysis to optimize IoT device placement

Configure devices to ensure effective data transfer

To be competent, the user/individual on the job must be able to:

Qualification Pack

- PC11.** set up appropriate connectivity options on microcontroller boards for seamless data transfer
- PC12.** use compatible cable connectors and microcontrollers to link IoT devices with data transfer interfaces (desktop/laptop/IoT gateway)
- PC13.** install and configure firmware/software frameworks that enable IoT device communication with cloud platforms (AWS IoT Core, Azure IoT Hub, Google Cloud IoT)
- PC14.** compile and upload software code to microcontrollers, ensuring compatibility with communication protocols
- PC15.** debug software errors and optimize system performance using emulators and network testing tools

Test connections between nodes, gateways, and backend servers

To be competent, the user/individual on the job must be able to:

- PC16.** verify proper execution of installed software by setting up nodes and gateways correctly
- PC17.** validate data transfer between devices using system logs, LED indicators, or real-time dashboards
- PC18.** establish effective connectivity between IoT gateways and backend cloud platforms or local networks
- PC19.** perform network performance testing to detect latency, packet loss, or interference issues
- PC20.** confirm data reception at the backend server and escalate unresolved connectivity issues

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the principles of IoT architecture, including the role of microcontrollers, sensors, actuators, gateways, and cloud platforms
- KU2.** IoT applications across smart cities, healthcare, industry 4.0, and agriculture
- KU3.** communication technologies used in IoT (5G, NB-IoT, LoRaWAN, Wi-Fi, Bluetooth, Zigbee, Sigfox)
- KU4.** IoT data transfer protocols (MQTT, CoAP, HTTP, AMQP, WebSockets, DDS, Modbus, and BACnet) and their role in machine-to-machine communication
- KU5.** Ethernet, Transmission Control Protocol/Internet Protocol (TCP/IP), and Virtual Private Network (VPN)
- KU6.** cellular IoT, such as LTE-M, and 5G variants (URLLC, eMBB, mMTC)
- KU7.** wireless IoT, such as Wi-Fi 6, Zigbee, Bluetooth LE, RFID, and LoRaWAN technologies
- KU8.** how to install and configure smart meters, connected cameras, and industrial IoT devices
- KU9.** configuration and troubleshooting of cloud-based IoT management platforms (AWS IoT Core, Azure IoT Hub, Google Cloud IoT)
- KU10.** IoT cybersecurity threats and preventive measures (DDoS attacks, unauthorized access, encryption techniques)
- KU11.** tools and techniques for RF signal strength measurement and spectrum analysis
- KU12.** the applicable security standards and compliance requirements (ISO 27001, GDPR, TRAI, FCC, ETSI, NIST)
- KU13.** the importance of robust battery backups and energy-efficient IoT deployments
- KU14.** impact of signal interference, data packet loss, and power failures on IoT performance

Qualification Pack

- KU15.** remote diagnostics, monitoring tools, and predictive maintenance methodologies
- KU16.** proper handling, grounding, and safety considerations for IoT device installation
- KU17.** best practices for writing and debugging software code for IoT microcontrollers
- KU18.** edge computing and AI Integration in IoT installations and real-time IoT data processing
- KU19.** fiber optic safety, i.e. laser, glass, and chemical handling
- KU20.** RF hazards, i.e. RF radiation exposure and appropriate safety procedures
- KU21.** the use of appropriate PPE like, hard hat, safety glasses, gloves, high-visibility vest, safety boots, hearing protection (earplugs/earmuffs), fall protection (harness, lanyard, anchor point), respiratory protection (masks, filters)
- KU22.** the basics of Cloud-based IoT Management (AWS IoT, Azure IoT), Ethical Hacking for IoT, CISSP, CEH, Edge AI & Industrial IoT
- KU23.** use of fog computing to reduce latency in telecom applications
- KU24.** how to set up IoT data pipelines and dashboards for network monitoring

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** interpret technical documentation related to IoT installations and troubleshooting
- GS2.** apply problem-solving techniques to diagnose and resolve IoT device failures
- GS3.** communicate effectively with team members and clients to report issues and solutions
- GS4.** plan and prioritize work to complete IoT installations within deadlines
- GS5.** analyze network performance logs and diagnostic data
- GS6.** follow safety protocols when working with high-voltage power sources and telecom towers
- GS7.** follow and apply industry trends related to IoT advancements and security risks
- GS8.** adapt to new technologies such as AI-driven IoT analytics and edge computing
- GS9.** escalate critical issues to the appropriate team for resolution

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Analyse requirements for IoT devices</i>	7	13	-	5
PC1. identify various types of microprocessor boards (Arduino, Raspberry Pi, custom platforms) and microcontrollers used in IoT installations	1	3	-	1
PC2. determine the functions, characteristics, and applicability of different types of IoT sensors (temperature, humidity, pressure, motion, surveillance cameras, etc.) and actuators	2	2	-	1
PC3. select appropriate short-range (Bluetooth, Zigbee, Wi-Fi) and long-range (5G, NB-IoT, LoRaWAN) communication protocols for IoT applications	1	2	-	1
PC4. check the components, pin configurations, and interconnectivity provisions of microcontroller boards for input/output and power supply	1	3	-	1
PC5. differentiate between IoT nodes and gateways, assessing their roles in data transmission and network management	2	3	-	1
<i>Install IoT devices at suitable points/locations</i>	9	10	-	5
PC6. determine optimal installation points based on environmental factors, power supply availability, and network signal strength	2	2	-	1
PC7. establish communication line connectivity using suitable nodes, gateways, Ethernet, 5G, NB-IoT, or Wi-Fi networks	2	2	-	1
PC8. mount IoT devices securely at identified locations using industry-approved techniques and tools	1	2	-	1
PC9. connect and secure power supply sources while ensuring proper grounding and compliance with safety standards	2	1	-	1
PC10. implement signal strength testing and RF spectrum analysis to optimize IoT device placement	2	3	-	1

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Configure devices to ensure effective data transfer</i>	7	11	-	5
PC11. set up appropriate connectivity options on microcontroller boards for seamless data transfer	2	2	-	1
PC12. use compatible cable connectors and microcontrollers to link IoT devices with data transfer interfaces (desktop/laptop/IoT gateway)	1	3	-	1
PC13. install and configure firmware/software frameworks that enable IoT device communication with cloud platforms (AWS IoT Core, Azure IoT Hub, Google Cloud IoT)	1	1	-	1
PC14. compile and upload software code to microcontrollers, ensuring compatibility with communication protocols	1	2	-	1
PC15. debug software errors and optimize system performance using emulators and network testing tools	2	3	-	1
<i>Test connections between nodes, gateways, and backend servers</i>	7	16	-	5
PC16. verify proper execution of installed software by setting up nodes and gateways correctly	2	2	-	1
PC17. validate data transfer between devices using system logs, LED indicators, or real-time dashboards	1	3	-	1
PC18. establish effective connectivity between IoT gateways and backend cloud platforms or local networks	1	4	-	1
PC19. perform network performance testing to detect latency, packet loss, or interference issues	1	4	-	1
PC20. confirm data reception at the backend server and escalate unresolved connectivity issues	2	3	-	1
NOS Total	30	50	-	20

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N6234
NOS Name	Install and configure IoT devices at customer premises
Sector	Telecom
Sub-Sector	Network Managed Services
Occupation	Operations and Maintenance - Passive Infrastructure
NSQF Level	4
Credits	8
Version	4.0
Last Reviewed Date	08/05/2025
Next Review Date	30/04/2028
NSQC Clearance Date	08/05/2025

Qualification Pack

TEL/N6236: Perform level 1 troubleshooting of IoT devices

Description

This unit is about performing first-level troubleshooting of IoT devices, identifying and resolving network and hardware issues, and escalating unresolved problems.

Scope

The scope covers the following :

- Troubleshoot IOT nodes/gateway
- Troubleshoot communication devices

Elements and Performance Criteria

Troubleshoot IOT nodes/gateway

To be competent, the user/individual on the job must be able to:

- PC1.** set up a test environment and create a structured troubleshooting plan
- PC2.** verify connectivity between sensors, microcontrollers, and other components using diagnostic tools
- PC3.** inspect all wiring, pin configurations, and power supply connections for faults
- PC4.** reload or update software/firmware on IoT nodes and gateways
- PC5.** check onboard memory storage and validate stored sensor data
- PC6.** maintain accurate logs of performance tests and corrective actions

Troubleshoot communication devices

To be competent, the user/individual on the job must be able to:

- PC7.** inspect and verify the functionality of communication modules (Wi-Fi, 5G, NB-IoT, LoRaWAN)
- PC8.** reconfigure device credentials, security settings, and network authentication
- PC9.** measure communication link performance between IoT nodes and gateways
- PC10.** perform protocol-level debugging for MQTT, CoAP, HTTP
- PC11.** reset network configurations and conduct connectivity tests
- PC12.** escalate unresolved technical issues to the engineering team

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** IoT cybersecurity threats and preventive measures (DDoS attacks, unauthorized access, encryption techniques)
- KU2.** communication protocols and troubleshooting methodologies for IoT devices
- KU3.** remote monitoring tools for predictive maintenance and fault detection
- KU4.** tools and techniques for diagnosing network latency and interference
- KU5.** escalation procedures for unresolved hardware/software failures

Qualification Pack

- KU6.** IoT device authentication, encryption (AES-256), and secure access controls
- KU7.** configuration of cloud-based IoT troubleshooting tools
- KU8.** best practices for firmware updates and security patching
- KU9.** compliance with IoT security standards (ISO 27001, GDPR, ETSI, TRAI)
- KU10.** use of diagnostic software to interpret sensor and network performance data

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** read and interpret technical manuals and troubleshooting guides
- GS2.** communicate effectively with the technical team for issue resolution
- GS3.** prioritize tasks to minimize system downtime
- GS4.** maintain logs and reports of troubleshooting activities
- GS5.** follow escalation protocols for unresolved IoT issues
- GS6.** adapt to evolving IoT security and troubleshooting practices
- GS7.** use diagnostic tools effectively for IoT network analysis
- GS8.** apply logical reasoning for identifying root causes of device failures
- GS9.** collaborate with teams for knowledge sharing and best practices

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Troubleshoot IOT nodes/gateway</i>	19	23	-	10
PC1. set up a test environment and create a structured troubleshooting plan	3	5	-	2
PC2. verify connectivity between sensors, microcontrollers, and other components using diagnostic tools	5	5	-	2
PC3. inspect all wiring, pin configurations, and power supply connections for faults	2	2	-	2
PC4. reload or update software/firmware on IoT nodes and gateways	4	4	-	2
PC5. check onboard memory storage and validate stored sensor data	3	4	-	1
PC6. maintain accurate logs of performance tests and corrective actions	2	3	-	1
<i>Troubleshoot communication devices</i>	11	27	-	10
PC7. inspect and verify the functionality of communication modules (Wi-Fi, 5G, NB-IoT, LoRaWAN)	2	5	-	2
PC8. reconfigure device credentials, security settings, and network authentication	1	6	-	1
PC9. measure communication link performance between IoT nodes and gateways	3	4	-	2
PC10. perform protocol-level debugging for MQTT, CoAP, HTTP	1	5	-	1
PC11. reset network configurations and conduct connectivity tests	3	2	-	2
PC12. escalate unresolved technical issues to the engineering team	1	5	-	2
NOS Total	30	50	-	20

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N6236
NOS Name	Perform level 1 troubleshooting of IoT devices
Sector	Telecom
Sub-Sector	Network Managed Services
Occupation	Operations and Maintenance - Passive Infrastructure
NSQF Level	4
Credits	7
Version	4.0
Last Reviewed Date	08/05/2025
Next Review Date	30/04/2028
NSQC Clearance Date	08/05/2025

Qualification Pack

TEL/N9105: Follow sustainable practices in telecom infrastructure installation

Description

This unit covers sustainable practices in telecom infrastructure installation. It includes identifying components for recycling or refurbishment, ensuring compliance with environmental standards, and promoting sustainability during installation and repair processes.

Scope

The scope covers the following :

- Segregate recyclable and refurbishable components
- Dispose of waste
- Use Energy-Efficient Methods
- Follow environmental standards and compliance guidelines
- Guide team members

Elements and Performance Criteria

Segregate recyclable and refurbishable components

To be competent, the user/individual on the job must be able to:

- PC1.** identify telecom components suitable for recycling or refurbishment
- PC2.** sort electronic and non-electronic waste based on disposal protocols
- PC3.** label and store recyclable and refurbishable components separately

Dispose of waste

To be competent, the user/individual on the job must be able to:

- PC4.** follow approved procedures for the safe disposal of hazardous and non-hazardous waste
- PC5.** coordinate with authorized e-waste recycling units or certified disposal agencies
- PC6.** handle batteries, cables, and electronic circuits safely to prevent environmental hazards

Use Energy-Efficient Methods

To be competent, the user/individual on the job must be able to:

- PC7.** select and use energy-efficient tools and equipment during telecom installations
- PC8.** apply best practices to minimize energy consumption
- PC9.** position and install telecom infrastructure to optimize efficiency and sustainability

Follow environmental standards and compliance guidelines

To be competent, the user/individual on the job must be able to:

- PC10.** adhere to national and international environmental regulations for telecom infrastructure installation
- PC11.** maintain records of waste disposal, recycling, and sustainability measures
- PC12.** assist in periodic audits to assess compliance with green standards
- PC13.** follow workplace sustainability protocols and report non-compliance

Qualification Pack

Guide team members

To be competent, the user/individual on the job must be able to:

PC14. guide team members on sustainable telecom installation guidelines and practices

PC15. encourage environmentally responsible work habits

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. the national and international environmental laws and regulations

KU2. e-waste management and recycling policies

KU3. occupational safety and health standards related to environmental practices

KU4. the types of recyclable and refurbishable telecom components

KU5. methods for reducing electronic waste through responsible procurement and reuse

KU6. advancements in eco-friendly telecom infrastructure

KU7. techniques for optimizing energy consumption in telecom operations

KU8. use of renewable energy sources in telecom infrastructure

KU9. best practices for reducing the carbon footprint of telecom installations

KU10. identification and proper disposal methods for hazardous and non-hazardous waste

KU11. the procedures for handling, storing, and transporting waste materials safely

KU12. how to collaborate with authorized agencies for effective waste collection and disposal

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. communicate effectively with team members to ensure adherence to sustainable practices

GS2. follow written instructions for waste segregation, disposal, and energy-efficient installations

GS3. use problem-solving skills to address sustainability challenges in telecom installations

GS4. apply numerical skills to track and record environmental compliance data

GS5. organize tasks efficiently to minimize resource wastage and environmental impact

GS6. adapt to new sustainable technologies in telecom infrastructure

GS7. work collaboratively with authorized agencies to ensure proper e-waste disposal

GS8. maintain safety protocols while handling hazardous materials

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Segregate recyclable and refurbishable components</i>	6	12	-	6
PC1. identify telecom components suitable for recycling or refurbishment	2	4	-	2
PC2. sort electronic and non-electronic waste based on disposal protocols	2	4	-	2
PC3. label and store recyclable and refurbishable components separately	2	4	-	2
<i>Dispose of waste</i>	6	10	-	5
PC4. follow approved procedures for the safe disposal of hazardous and non-hazardous waste	2	4	-	2
PC5. coordinate with authorized e-waste recycling units or certified disposal agencies	2	3	-	2
PC6. handle batteries, cables, and electronic circuits safely to prevent environmental hazards	2	3	-	1
<i>Use Energy-Efficient Methods</i>	6	10	-	3
PC7. select and use energy-efficient tools and equipment during telecom installations	2	4	-	1
PC8. apply best practices to minimize energy consumption	2	3	-	1
PC9. position and install telecom infrastructure to optimize efficiency and sustainability	2	3	-	1
<i>Follow environmental standards and compliance guidelines</i>	8	12	-	4
PC10. adhere to national and international environmental regulations for telecom infrastructure installation	2	3	-	1
PC11. maintain records of waste disposal, recycling, and sustainability measures	2	3	-	1
PC12. assist in periodic audits to assess compliance with green standards	2	3	-	1

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. follow workplace sustainability protocols and report non-compliance	2	3	-	1
<i>Guide team members</i>	4	6	-	2
PC14. guide team members on sustainable telecom installation guidelines and practices	2	3	-	1
PC15. encourage environmentally responsible work habits	2	3	-	1
NOS Total	30	50	-	20

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N9105
NOS Name	Follow sustainable practices in telecom infrastructure installation
Sector	Telecom
Sub-Sector	
Occupation	Generic
NSQF Level	4
Credits	1
Version	1.0
Last Reviewed Date	08/05/2025
Next Review Date	30/04/2028
NSQC Clearance Date	08/05/2025

Qualification Pack

DGT/VSQ/N0101: Employability Skills (30 Hours)

Description

This unit is about employability skills, Constitutional values, becoming a professional in the 21st Century, digital, financial, and legal literacy, diversity and Inclusion, English and communication skills, customer service, entrepreneurship, and apprenticeship, getting ready for jobs and career development.

Scope

The scope covers the following :

- Introduction to Employability Skills
- Constitutional values - Citizenship
- Becoming a Professional in the 21st Century
- Basic English Skills
- Communication Skills
- Diversity & Inclusion
- Financial and Legal Literacy
- Essential Digital Skills
- Entrepreneurship
- Customer Service
- Getting ready for Apprenticeship & Jobs

Elements and Performance Criteria

Introduction to Employability Skills

To be competent, the user/individual on the job must be able to:

PC1. understand the significance of employability skills in meeting the job requirements

Constitutional values – Citizenship

To be competent, the user/individual on the job must be able to:

PC2. identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices

Becoming a Professional in the 21st Century

To be competent, the user/individual on the job must be able to:

PC3. explain 21st Century Skills such as Self-Awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset etc.

Basic English Skills

To be competent, the user/individual on the job must be able to:

PC4. speak with others using some basic English phrases or sentences

Communication Skills

To be competent, the user/individual on the job must be able to:

PC5. follow good manners while communicating with others

PC6. work with others in a team

Qualification Pack

Diversity & Inclusion

To be competent, the user/individual on the job must be able to:

PC7. communicate and behave appropriately with all genders and PwD

PC8. report any issues related to sexual harassment

Financial and Legal Literacy

To be competent, the user/individual on the job must be able to:

PC9. use various financial products and services safely and securely

PC10. calculate income, expenses, savings etc.

PC11. approach the concerned authorities for any exploitation as per legal rights and laws

Essential Digital Skills

To be competent, the user/individual on the job must be able to:

PC12. operate digital devices and use its features and applications securely and safely

PC13. use internet and social media platforms securely and safely

Entrepreneurship

To be competent, the user/individual on the job must be able to:

PC14. identify and assess opportunities for potential business

PC15. identify sources for arranging money and associated financial and legal challenges

Customer Service

To be competent, the user/individual on the job must be able to:

PC16. identify different types of customers

PC17. identify customer needs and address them appropriately

PC18. follow appropriate hygiene and grooming standards

Getting ready for apprenticeship & Jobs

To be competent, the user/individual on the job must be able to:

PC19. create a basic biodata

PC20. search for suitable jobs and apply

PC21. identify and register apprenticeship opportunities as per requirement

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. need for employability skills

KU2. various constitutional and personal values

KU3. different environmentally sustainable practices and their importance

KU4. Twenty first (21st) century skills and their importance

KU5. how to use basic spoken English language

KU6. Do and dont of effective communication

KU7. inclusivity and its importance

KU8. different types of disabilities and appropriate communication and behaviour towards PwD

KU9. different types of financial products and services

Qualification Pack

- KU10.** how to compute income and expenses
- KU11.** importance of maintaining safety and security in financial transactions
- KU12.** different legal rights and laws
- KU13.** how to operate digital devices and applications safely and securely
- KU14.** ways to identify business opportunities
- KU15.** types of customers and their needs
- KU16.** how to apply for a job and prepare for an interview
- KU17.** apprenticeship scheme and the process of registering on apprenticeship portal

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** communicate effectively using appropriate language
- GS2.** behave politely and appropriately with all
- GS3.** perform basic calculations
- GS4.** solve problems effectively
- GS5.** be careful and attentive at work
- GS6.** use time effectively
- GS7.** maintain hygiene and sanitisation to avoid infection

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Introduction to Employability Skills</i>	1	1	-	-
PC1. understand the significance of employability skills in meeting the job requirements	-	-	-	-
<i>Constitutional values – Citizenship</i>	1	1	-	-
PC2. identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices	-	-	-	-
<i>Becoming a Professional in the 21st Century</i>	1	3	-	-
PC3. explain 21st Century Skills such as Self-Awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset etc.	-	-	-	-
<i>Basic English Skills</i>	2	3	-	-
PC4. speak with others using some basic English phrases or sentences	-	-	-	-
<i>Communication Skills</i>	1	1	-	-
PC5. follow good manners while communicating with others	-	-	-	-
PC6. work with others in a team	-	-	-	-
<i>Diversity & Inclusion</i>	1	1	-	-
PC7. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC8. report any issues related to sexual harassment	-	-	-	-
<i>Financial and Legal Literacy</i>	3	4	-	-
PC9. use various financial products and services safely and securely	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. calculate income, expenses, savings etc.	-	-	-	-
PC11. approach the concerned authorities for any exploitation as per legal rights and laws	-	-	-	-
<i>Essential Digital Skills</i>	4	6	-	-
PC12. operate digital devices and use its features and applications securely and safely	-	-	-	-
PC13. use internet and social media platforms securely and safely	-	-	-	-
<i>Entrepreneurship</i>	3	5	-	-
PC14. identify and assess opportunities for potential business	-	-	-	-
PC15. identify sources for arranging money and associated financial and legal challenges	-	-	-	-
<i>Customer Service</i>	2	2	-	-
PC16. identify different types of customers	-	-	-	-
PC17. identify customer needs and address them appropriately	-	-	-	-
PC18. follow appropriate hygiene and grooming standards	-	-	-	-
<i>Getting ready for apprenticeship & Jobs</i>	1	3	-	-
PC19. create a basic biodata	-	-	-	-
PC20. search for suitable jobs and apply	-	-	-	-
PC21. identify and register apprenticeship opportunities as per requirement	-	-	-	-
NOS Total	20	30	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	DGT/VSQ/N0101
NOS Name	Employability Skills (30 Hours)
Sector	Cross Sectoral
Sub-Sector	Professional Skills
Occupation	Employability
NSQF Level	2
Credits	1
Version	1.0
Last Reviewed Date	30/04/2025
Next Review Date	30/04/2028
NSQC Clearance Date	30/04/2025

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Element/ 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 Element/ PC.
2. The assessment for the theory part will be based on knowledge bank of questions created 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 these criteria.
6. To pass the Qualification Pack assessment, every trainee should score the Recommended Pass % aggregate for the QP.
7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Qualification Pack

Minimum Aggregate Passing % at QP Level : 70

(Please note: Every Trainee should score a minimum aggregate passing percentage as specified above, to successfully clear the Qualification Pack assessment.)

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
TEL/N6234.Install and configure IoT devices at customer premises	30	50	-	20	100	40
TEL/N6236.Perform level 1 troubleshooting of IoT devices	30	50	-	20	100	40
TEL/N9105.Follow sustainable practices in telecom infrastructure installation	30	50	-	20	100	10
DGT/VSQ/N0101.Employability Skills (30 Hours)	20	30	-	-	50	10
Total	110	180	-	60	350	100

Qualification Pack

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training
NCVET	National Council for Vocational Education and Training
QP	Qualification Pack
MC	Model Curriculum
NSQF	National Skills Qualification Framework
NSQC	National Skills Qualification Committee
NOS	National Occupational Standards
NCO	National Classification of Occupations
ES	Employability Skills
TSSC	Telecom Sector Skill Council
TRAI	Telecom Regulatory Authority of India
IoT	Internet of Things
NB-IoT	Narrowband Internet of Things
LoRaWAN	Long Range Wide Area Network
LED	Light Emitting Diode
ISO	International Organization for Standardization
GDPR	General Data Protection Regulation
NIST	National Institute of Standards and Technology
AES	Advanced Encryption Standard
MQTT	Message Queuing Telemetry Transport
CoAP	Constrained Application Protocol
HTTP	HyperText Transfer Protocol

Qualification Pack

Glossary

Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.
Knowledge and Understanding (KU)	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.

Qualification Pack

Organisational Context	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills/ Generic Skills (GS)	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.
Electives	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.
Sector	Sector is a conglomeration of different business operations having similar businesses and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components
Occupation	Occupation is a set of job roles, which perform similar/related set of functions in an industry.
Function	Function is an activity necessary for achieving the key purpose of the sector, occupation, or area of work, which can be carried out by a person or a group of persons. Functions are identified through functional analysis and form the basis of OS.
Job Role	Job role defines a unique set of functions that together form a unique employment opportunity in an organization.
OS	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the knowledge and understanding they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria	Performance Criteria are statements that together specify the standard of performance required when carrying out a task.

Qualification Pack

NOS	NOS are Occupational Standards which apply uniquely in the Indian context.
Qualifications Pack Code	Qualifications Pack Code is a unique reference code that identifies a qualifications pack.
Qualifications Pack	Qualifications Pack comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A qualifications Pack is assigned a unique qualification pack code.
Unit Code	Unit Code is a unique identifier for an Occupational Standard, which is denoted by an 'N'™.
Unit Title	Unit Title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Knowledge and Understanding	Knowledge and Understanding are statements which together specify the technical, generic, professional and organizational specific knowledge that an individual needs in order to perform to the required standard.
Organizational Context	Organizational Context includes the way the organization is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical Knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
'Core Skills or Generic Skills	Core Skills or Generic Skills are a group of skills that are key to learning and working in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.'
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