

Qualification Pack



Telecom Terminal Equipment Application Developer (Native)

QP Code: TEL/Q2301

Version: 2.0

NSQF Level: 4

Telecom Sector Skill Council || 3rd Floor, Plot No 126, Sector - 44
Gurgaon - 122003

Qualification Pack

Contents

TEL/Q2301: Telecom Terminal Equipment Application Developer (Native)	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/N2304: Develop Applications in HTML5 with JavaScript and Cascading Style Sheets (CSS3)	5
TEL/N2305: Configure Native Applications using HTML5 and JavaScript	11
TEL/N2306: Test and Publish Native Phone Applications	16
TEL/N9101: Organise Work and Resources as per Health and Safety Standards	20
TEL/N9102: Interact Effectively with Team Members and Customers	27
Assessment Guidelines and Weightage	31
<i>Assessment Guidelines</i>	31
<i>Assessment Weightage</i>	32
Acronyms	33
Glossary	34

Qualification Pack

TEL/Q2301: Telecom Terminal Equipment Application Developer (Native)

Brief Job Description

The individual is responsible for creating customized applications for various mobile platform that can be used by smartphone or tablets running across different platforms. The individual also performs tests for the written codes and ensures that adequate security measures are taken to protect valuable data used in the application from unauthorised external agents.

Personal Attributes

A telecom terminal equipment application developer (native) should be customer oriented, self-motivated, effective communicator and a team player with strong analytical and problem-solving skills. The individual should be proficient in the latest app development languages and have good coding skills with a flair for designing/structuring activities.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [TEL/N2304: Develop Applications in HTML5 with JavaScript and Cascading Style Sheets \(CSS3\)](#)
2. [TEL/N2305: Configure Native Applications using HTML5 and JavaScript](#)
3. [TEL/N2306: Test and Publish Native Phone Applications](#)
4. [TEL/N9101: Organise Work and Resources as per Health and Safety Standards](#)
5. [TEL/N9102: Interact Effectively with Team Members and Customers](#)

Qualification Pack (QP) Parameters

Sector	Telecom
Sub-Sector	Handset
Occupation	Terminal Equipment Application Developer
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/2153.0102

Qualification Pack

Minimum Educational Qualification & Experience	12th Class OR 10th Class + I.T.I OR Diploma (Science/Electronics/Telecom/IT and other relevant fields)
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	30/12/2021
Next Review Date	30/12/2025
NSQC Approval Date	30/12/2021
Version	2.0
Reference code on NQR	2021/TEL/TSSC/04904
NQR Version	1.0

Qualification Pack

TEL/N2304: Develop Applications in HTML5 with JavaScript and Cascading Style Sheets (CSS3)

Description

This OS unit is about programming in Hypertext Mark-up Language (HTML5) and developing Cascading Style Sheets (CSS3) applications.

Scope

The scope covers the following :

- Implement and manipulate document structures and objects
- Implement program flow
- Access and secure data
- Execute CSS3 in applications
- Execute JavaScript in Application Development

Elements and Performance Criteria

Implement and manipulate document structures and objects

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

- PC1.** create the document structure using different HTML tags such as section, article, navigation, header, footer, aside and other tags
- PC2.** develop User Interface (UI) elements
- PC3.** add and modify HTML elements programmatically
- PC4.** implement media controls, HTML canvas, Scalable Vector Graphics (SVG) and HTML5 Application Programming Interface (APIs)
- PC5.** create variables, objects and methods and implement them

Implement program flow

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

- PC6.** create and modify the control statements of the applications
- PC7.** implement handling of events exposed by DOM (Document Object Model)
- PC8.** perform steps to manage exception handling
- PC9.** implement a callback
- PC10.** create a web worker process

Access and secure data

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

- PC11.** validate user input using HTML5 elements and Java Script
- PC12.** use JavaScript Object Notation (JSON) and Extensive Markup Language (XML) data
- PC13.** ensure to serialize, deserialize, and transmit data

Execute CSS3 in applications

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

Qualification Pack

- PC14.** implement style HTML text properties and box properties
- PC15.** interpret application requirements, User Interface (UI) requirements and logic/control flow
- PC16.** create a flexible content layout with an animated and adaptive UI
- PC17.** perform structuring of Cascading Style Sheets (CSS3) file by using selectors
- PC18.** find elements by using CSS selectors and jQuery
- PC19.** configure the native application suite/tools for application development

Execute Java Script in Application Development

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

- PC20.** create objects and methods by using JavaScript
- PC21.** refine the code for maintainability and extensibility
- PC22.** create interactive pages using HTML5 Application Program Interface (API)
- PC23.** employ offline support to Web Applications
- PC24.** implement adaptive and animated UI and generics in the application
- PC25.** implement real-time communications by using web sockets
- PC26.** perform installation and set up the emulator
- PC27.** perform testing of the functionality and UI using the emulators

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** semantic elements of HTML
- KU2.** fundamentals of application development platforms and environment
- KU3.** software development process and lifecycle
- KU4.** HTML layout elements and techniques
- KU5.** use of canvas and SVG in HTML
- KU6.** scope of variables in programming
- KU7.** DOM standards
- KU8.** control flow and exception handling procedures
- KU9.** basics of web workers
- KU10.** process of form validation in HTML and JavaScript
- KU11.** features and application of JSON (JavaScript Object Notation) and XML (Extensive Markup Language)
- KU12.** concept of converting the data like serialization and deserialization
- KU13.** working of user interface in various devices
- KU14.** working of CSS in a proper manner
- KU15.** implementation process of generics
- KU16.** implementation process of web sockets
- KU17.** process of setting up an emulator

Generic Skills (GS)

Qualification Pack

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

- GS1.** read and interpret manual and other materials
- GS2.** work systematically with required attention to detail and adherence to all safety requirements
- GS3.** communicate in the local language (preferable)
- GS4.** keep abreast with the new technologies and languages for programming

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Implement and manipulate document structures and objects</i>	8	13	-	3
PC1. create the document structure using different HTML tags such as section, article, navigation, header, footer, aside and other tags	2	3	-	1
PC2. develop User Interface (UI) elements	2	3	-	-
PC3. add and modify HTML elements programmatically	1	3	-	1
PC4. implement media controls, HTML canvas, Scalable Vector Graphics (SVG) and HTML5 Application Programming Interface (APIs)	2	2	-	-
PC5. create variables, objects and methods and implement them	1	2	-	1
<i>Implement program flow</i>	6	10	-	3
PC6. create and modify the control statements of the applications	1	2	-	1
PC7. implement handling of events exposed by DOM (Document Object Model)	2	2	-	-
PC8. perform steps to manage exception handling	1	2	-	1
PC9. implement a callback	1	2	-	-
PC10. create a web worker process	1	2	-	1
<i>Access and secure data</i>	4	5	-	2
PC11. validate user input using HTML5 elements and Java Script	2	2	-	1
PC12. use JavaScript Object Notation (JSON) and Extensive Markup Language (XML) data	1	3	-	-
PC13. ensure to serialize, deserialize, and transmit data	1	-	-	1
<i>Execute CSS3 in applications</i>	6	6	-	2

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. implement style HTML text properties and box properties	1	-	-	-
PC15. interpret application requirements, User Interface (UI) requirements and logic/control flow	1	-	-	-
PC16. create a flexible content layout with an animated and adaptive UI	1	-	-	1
PC17. perform structuring of Cascading Style Sheets (CSS3) file by using selectors	1	2	-	-
PC18. find elements by using CSS selectors and jQuery	1	2	-	1
PC19. configure the native application suite/tools for application development	1	2	-	-
<i>Execute Java Script in Application Development</i>	11	16	-	5
PC20. create objects and methods by using JavaScript	2	2	-	1
PC21. refine the code for maintainability and extensibility	1	2	-	1
PC22. create interactive pages using HTML5 Application Program Interface (API)	2	2	-	1
PC23. employ offline support to Web Applications	1	2	-	-
PC24. implement adaptive and animated UI and generics in the application	2	2	-	1
PC25. implement real-time communications by using web sockets	1	2	-	-
PC26. perform installation and set up the emulator	1	2	-	1
PC27. perform testing of the functionality and UI using the emulators	1	2	-	-
NOS Total	35	50	-	15

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N2304
NOS Name	Develop Applications in HTML5 with JavaScript and Cascading Style Sheets (CSS3)
Sector	Telecom
Sub-Sector	Handset
Occupation	Terminal Equipment Application Developer
NSQF Level	4
Credits	TBD
Version	2.0
Last Reviewed Date	30/12/2021
Next Review Date	30/12/2025
NSQC Clearance Date	30/12/2021

Qualification Pack

TEL/N2305: Configure Native Applications using HTML5 and JavaScript

Description

This OS unit is about setting up native application development tools/suite, developing basic and Value Added Services (VAS) native applications using HTML5 and JavaScript for various mobile operating systems.

Scope

The scope covers the following :

- Configure the native application platform suite/tools
- Enhance the UI Design using various layouts and controls
- Perform data and file handling, and other database operations
- Implement process lifetime management and VAS support for the application

Elements and Performance Criteria

Configure the native application platform suite/tools

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

- PC1.** identify the native application development tools/suite available from different vendor as per the requirement
- PC2.** perform installation of the native application suite/tools and the emulator
- PC3.** make the required configuration changes for application ready platform
- PC4.** design a theme for User Interface and navigation flow of the application (with the user and mobile device) as per the specifications of the selected development tool/suite

Execute principles and components of UI (User Interface) design, layouts and control

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

- PC5.** create layout controls and templates for UI design
- PC6.** work with controls specific to Operating Systems (OS) platforms
- PC7.** implement tiles, live tiles, secondary tiles, and badge notifications for the application
- PC8.** add toast notifications for Windows platform and other iOS and android specific interface designs
- PC9.** develop response to mouse, touch and other actions as per the requirements and specifications

Perform data and file handling and other database operations

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

- PC10.** design and implement a data access strategy for the application
- PC11.** enable file and input streams handling for the application using various components
- PC12.** implement reading and writing of data to the notes file through the application
- PC13.** create and manage queries on Structured Query Language (SQL) lite for the application to interact with the database

Implement process lifetime management and VAS support for an applications

Qualification Pack

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

- PC14.** evaluate different Product Lifecycle Management (PLM) states of the application
- PC15.** implement the appropriate state management of data for the application
- PC16.** implement semantic zoom and other functionalities for specific mobile platform/OS
- PC17.** identify the VAS elements that should be added to the application for using and implementing specific features of Android and iOS
- PC18.** implement network components and controls for the VAS components of the application
- PC19.** modify the application to support General Packet Radio services (GPRS)
- PC20.** integrate mails usage with the application

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** features and applications of various native application development tools/suite
- KU2.** types of user interfaces
- KU3.** elements and principles of UI
- KU4.** process of UI design
- KU5.** types of data access strategies
- KU6.** implementation procedure of data access strategies
- KU7.** applications of SQL
- KU8.** basics of Product Lifecycle Management (PLM)
- KU9.** methods of backing up and recovering databases
- KU10.** database security issues
- KU11.** ways and means of database design

Generic Skills (GS)

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

- GS1.** read and interpret manual and other materials
- GS2.** analyse random requirements and create logics for the software
- GS3.** analyse and interpret problems and create codes
- GS4.** communicate with the superiors and colleagues
- GS5.** work systematically with required attention-to-detail

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Configure the native application platform suite/tools</i>	5	11	-	4
PC1. identify the native application development tools/suite available from different vendor as per the requirement	1	3	-	1
PC2. perform installation of the native application suite/tools and the emulator	2	2	-	1
PC3. make the required configuration changes for application ready platform	1	2	-	1
PC4. design a theme for User Interface and navigation flow of the application (with the user and mobile device) as per the specifications of the selected development tool/suite	1	4	-	1
<i>Execute principles and components of UI (User Interface) design, layouts and control</i>	8	14	-	5
PC5. create layout controls and templates for UI design	2	2	-	1
PC6. work with controls specific to Operating Systems (OS) platforms	1	3	-	1
PC7. implement tiles, live tiles, secondary tiles, and badge notifications for the application	2	3	-	1
PC8. add toast notifications for Windows platform and other iOS and android specific interface designs	2	3	-	1
PC9. develop response to mouse, touch and other actions as per the requirements and specifications	1	3	-	1
<i>Perform data and file handling and other database operations</i>	6	10	-	4
PC10. design and implement a data access strategy for the application	2	3	-	1
PC11. enable file and input streams handling for the application using various components	1	2	-	1

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. implement reading and writing of data to the notes file through the application	1	2	-	1
PC13. create and manage queries on Structured Query Language (SQL) lite for the application to interact with the database	2	3	-	1
<i>Implement process lifetime management and VAS support for an applications</i>	11	15	-	7
PC14. evaluate different Product Lifecycle Management (PLM) states of the application	2	3	-	1
PC15. implement the appropriate state management of data for the application	1	1	-	1
PC16. implement semantic zoom and other functionalities for specific mobile platform/OS	1	3	-	1
PC17. identify the VAS elements that should be added to the application for using and implementing specific features of Android and iOS	2	1	-	1
PC18. implement network components and controls for the VAS components of the application	2	2	-	1
PC19. modify the application to support General Packet Radio services (GPRS)	2	3	-	1
PC20. integrate mails usage with the application	1	2	-	1
NOS Total	30	50	-	20

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N2305
NOS Name	Configure Native Applications using HTML5 and JavaScript
Sector	Telecom
Sub-Sector	Handset
Occupation	Terminal Equipment Application Developer
NSQF Level	4
Credits	TBD
Version	2.0
Last Reviewed Date	30/12/2021
Next Review Date	30/12/2025
NSQC Clearance Date	30/12/2021

Qualification Pack

TEL/N2306: Test and Publish Native Phone Applications

Description

This OS unit is about testing and publishing various platform specific phone applications.

Scope

The scope covers the following :

- Test and secure the phone applications
- Publish the phone applications

Elements and Performance Criteria

Test and secure the phone applications

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

- PC1.** identify the testing methodology to be used for the application
- PC2.** create different test cases and scenarios for testing the application
- PC3.** perform functional, compatibility and performance testing of the application on different mobile phones/platforms/OS
- PC4.** carry out network testing to check connectivity parameters
- PC5.** perform User Interface/User Experience (UI/UX) testing based on various parameters
- PC6.** test the application for data/information security
- PC7.** resolve any issues/problems associated with the application, network and user interface after troubleshooting

Publish the phone applications

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

- PC8.** configure the application's manifest file to prepare for publishing it on the app store(s)
- PC9.** obtain the application certification from authorised source
- PC10.** deploy and publish the application across various platforms

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** types of testing for applications
- KU2.** fundamentals and application of android application kit used in testing mobile applications
- KU3.** performance parameters used in application testing
- KU4.** security policies of android and organisation commissioning the application
- KU5.** techniques for troubleshooting application problems
- KU6.** procedure to publish an application on different platforms
- KU7.** fundamentals of services and background processing



KU8. fundamentals of networking

Generic Skills (GS)

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

GS1. read and interpret manual and other materials

GS2. interpret testing requirements

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Test and secure the phone applications</i>	19	35	-	13
PC1. identify the testing methodology to be used for the application	3	5	-	1
PC2. create different test cases and scenarios for testing the application	3	6	-	1
PC3. perform functional, compatibility and performance testing of the application on different mobile phones/platforms/OS	3	7	-	2
PC4. carry out network testing to check connectivity parameters	2	4	-	2
PC5. perform User Interface/User Experience (UI/UX) testing based on various parameters	3	5	-	2
PC6. test the application for data/information security	2	4	-	2
PC7. resolve any issues/problems associated with the application, network and user interface after troubleshooting	3	4	-	3
<i>Publish the phone applications</i>	11	15	-	7
PC8. configure the application's manifest file to prepare for publishing it on the app store(s)	4	5	-	3
PC9. obtain the application certification from authorised source	3	4	-	2
PC10. deploy and publish the application across various platforms	4	6	-	2
NOS Total	30	50	-	20

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N2306
NOS Name	Test and Publish Native Phone Applications
Sector	Telecom
Sub-Sector	Handset
Occupation	Terminal Equipment Application Developer
NSQF Level	4
Credits	TBD
Version	2.0
Last Reviewed Date	30/12/2021
Next Review Date	30/12/2025
NSQC Clearance Date	30/12/2021

Qualification Pack

TEL/N9101: Organise Work and Resources as per Health and Safety Standards

Description

This OS unit is about planning work and following sustainable as well as healthy practices for safety and optimal use of resources.

Scope

The scope covers the following :

- Perform work as per quality standards
- Maintain safe, healthy and secure working environment
- Conserve material/energy/electricity
- Use effective waste management/recycling practices

Elements and Performance Criteria

Perform work as per quality standards

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

- PC1.** keep workspace clean and tidy
- PC2.** perform individual role and responsibilities as per the job role while taking accountability for the work
- PC3.** record/document tasks completed as per the requirements within specific timelines
- PC4.** implement schedules to ensure timely completion of tasks
- PC5.** identify the cause of a problem related to own work and validate it
- PC6.** analyse problems accurately and communicate different possible solutions to the problem

Maintain safe, healthy and secure working environment

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

- PC7.** comply with organisation's current health, safety, security policies and procedures
- PC8.** check for water spills in and around the work space and escalate these to the appropriate authority
- PC9.** report any identified breaches in health, safety, and security policies and procedures to the designated person
- PC10.** use safety materials such as goggles, gloves, ear plugs, caps, ESD pins, covers, shoes, etc.
- PC11.** avoid damage of components due to negligence in ESD procedures or any other loss due to safety negligence
- PC12.** identify 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
- PC13.** participate regularly in fire drills or other safety related workshops organised by the company
- 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

Qualification Pack

- PC15.** maintain appropriate posture while sitting/standing for long hours
- PC16.** handle heavy and hazardous materials with care, while maintaining appropriate posture
- PC17.** sanitize workstation and equipment regularly
- PC18.** clean hands with soap, alcohol-based sanitizer regularly
- PC19.** avoid contact with anyone suffering from communicable diseases and take necessary precautions
- PC20.** take safety precautions while travelling e.g. maintain 1m distance from others, sanitize hands regularly, wear masks, etc.
- PC21.** report hygiene and sanitation issues to appropriate authority
- PC22.** follow recommended personal hygiene and sanitation practices, for example, washing/sanitizing hands, covering face with a bent elbow while coughing/sneezing, using PPE, etc.

Conserve material/energy/electricity

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

- PC23.** optimize usage of material including water in various tasks/activities/processes
- PC24.** use resources such as water, electricity and others responsibly
- PC25.** carry out routine cleaning of tools, machine and equipment
- PC26.** optimize use of electricity/energy in various tasks/activities/processes
- PC27.** perform periodic checks of the functioning of the equipment/machine and rectify wherever required
- PC28.** report malfunctioning and lapses in maintenance of equipment
- PC29.** use electrical equipment and appliances properly

Use effective waste management/recycling practices

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

- PC30.** identify recyclable, non-recyclable and hazardous waste
- PC31.** deposit recyclable and reusable material at identified location
- PC32.** dispose non-recyclable and hazardous waste as per recommended processes

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** strategies pertinent to their field (such as internet searches, asking peers and managers, enrolling for courses and certifications, etc.) that can be used to pursue an advancement in their skills
- KU2.** key performance indicators for the new tasks
- KU3.** feedback processes and formats
- KU4.** timelines and goals as well as their relevance to work allocated
- KU5.** importance of quality and timely delivery of the product/service
- KU6.** escalation matrix and its importance, especially in case of emergencies
- KU7.** ways of time and cost management
- KU8.** rules/regulation for maintaining health and safety at workplace

Qualification Pack

- KU9.** meaning of hazard, different types of health and safety hazards found in the workplace, risks and threats based on the nature of work
- KU10.** relevant signage, warnings, labels or descriptions on equipment, etc. while carrying out work activities
- KU11.** procedures to report breaches in health, safety and security
- KU12.** organisation's procedures for different emergency situations and the importance of following the same
- KU13.** different methods of cleaning, disinfection, sterilization, and sanitization
- KU14.** significance of personal hygiene practice including hand hygiene
- KU15.** path of disease transmission
- KU16.** correct method of donning and doffing of PPE
- KU17.** ways of managing resources and material efficiently
- KU18.** common electrical problems and common practices of conserving electricity
- KU19.** categorization of waste into dry, wet, recyclable, non-recyclable and items of single-use plastics and use of different colours of dustbins
- KU20.** organisation's procedures for minimizing waste
- KU21.** waste management and methods of waste disposal
- KU22.** common sources of pollution and ways to minimize it

Generic Skills (GS)

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

- GS1.** improve and modify work practices
- GS2.** complete tasks efficiently and accurately within stipulated time
- GS3.** develop skills and mastery of the technologies prevalent in the industry
- GS4.** write in at least one language and complete written work with attention to detail
- GS5.** utilize time and manage workload efficiently
- GS6.** read and comprehend instructions and documents
- GS7.** accept feedback in a constructive way
- GS8.** seek clarifications from superior about the job requirement
- GS9.** read and comprehend statutory documents relevant to safety and hygiene
- GS10.** refer all anomalies to the concerned persons
- GS11.** analyze situations and make appropriate decisions
- GS12.** decide the most suitable course of action for completing the task within resources

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform work as per quality standards</i>	4	9	-	2
PC1. keep workspace clean and tidy	-	1	-	-
PC2. perform individual role and responsibilities as per the job role while taking accountability for the work	1	1	-	1
PC3. record/document tasks completed as per the requirements within specific timelines	-	1	-	1
PC4. implement schedules to ensure timely completion of tasks	-	2	-	-
PC5. identify the cause of a problem related to own work and validate it	2	2	-	-
PC6. analyse problems accurately and communicate different possible solutions to the problem	1	2	-	-
<i>Maintain safe, healthy and secure working environment</i>	16	27	-	4
PC7. comply with organisation's current health, safety, security policies and procedures	1	1	-	-
PC8. check for water spills in and around the work space and escalate these to the appropriate authority	1	2	-	1
PC9. report any identified breaches in health, safety, and security policies and procedures to the designated person	1	2	-	1
PC10. use safety materials such as goggles, gloves, ear plugs, caps, ESD pins, covers, shoes, etc.	1	2	-	1
PC11. avoid damage of components due to negligence in ESD procedures or any other loss due to safety negligence	2	3	-	1
PC12. identify 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	2	1	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. participate regularly in fire drills or other safety related workshops organised by the company	1	3	-	-
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	1	3	-	-
PC15. maintain appropriate posture while sitting/standing for long hours	1	1	-	-
PC16. handle heavy and hazardous materials with care, while maintaining appropriate posture	1	1	-	-
PC17. sanitize workstation and equipment regularly	1	2	-	-
PC18. clean hands with soap, alcohol-based sanitizer regularly	-	1	-	-
PC19. avoid contact with anyone suffering from communicable diseases and take necessary precautions	-	1	-	-
PC20. take safety precautions while travelling e.g. maintain 1m distance from others, sanitize hands regularly, wear masks, etc.	1	2	-	-
PC21. report hygiene and sanitation issues to appropriate authority	1	1	-	-
PC22. follow recommended personal hygiene and sanitation practices, for example, washing/sanitizing hands, covering face with a bent elbow while coughing/sneezing, using PPE, etc.	1	1	-	-
<i>Conserve material/energy/electricity</i>	7	16	-	3
PC23. optimize usage of material including water in various tasks/activities/processes	1	2	-	-
PC24. use resources such as water, electricity and others responsibly	1	2	-	1
PC25. carry out routine cleaning of tools, machine and equipment	1	2	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC26. optimize use of electricity/energy in various tasks/activities/processes	1	3	-	1
PC27. perform periodic checks of the functioning of the equipment/machine and rectify wherever required	1	3	-	1
PC28. report malfunctioning and lapses in maintenance of equipment	1	2	-	-
PC29. use electrical equipment and appliances properly	1	2	-	-
<i>Use effective waste management/recycling practices</i>	3	8	-	1
PC30. identify recyclable, non-recyclable and hazardous waste	1	2	-	1
PC31. deposit recyclable and reusable material at identified location	1	3	-	-
PC32. dispose non-recyclable and hazardous waste as per recommended processes	1	3	-	-
NOS Total	30	60	-	10

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N9101
NOS Name	Organise Work and Resources as per Health and Safety Standards
Sector	Telecom
Sub-Sector	Generic
Occupation	Generic
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	24/02/2022
Next Review Date	24/02/2026
NSQC Clearance Date	24/02/2022

Qualification Pack

TEL/N9102: Interact Effectively with Team Members and Customers

Description

This OS unit is about interacting with superiors and colleagues as well as customers and other stakeholders in own or other work groups within as well as outside the organisation.

Scope

The scope covers the following :

- Interact effectively with superiors
- Interact effectively with colleagues and customers
- Respect differences of gender and ability

Elements and Performance Criteria

Interact effectively with superiors

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

- PC1.** receive work requirements from superiors and customers and interpret them correctly
- PC2.** inform the supervisor and/or concerned person about any unforeseen disruptions or delays
- PC3.** participate in decision making by providing facts and figures, giving/accepting constructive suggestions
- PC4.** rectify errors as per feedback and ensure the errors are not repeated

Interact effectively with colleagues and customers

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

- PC5.** comply with organisation's policies and procedures for working with team members
- PC6.** communicate professionally using appropriate mode of communication such as face-to-face, telephonic and written
- PC7.** respond to queries and seek/provide clarifications if required
- PC8.** co-ordinate with team to integrate work as per requirements
- PC9.** resolve conflicts within the team/with customers to achieve smooth workflow
- PC10.** recognize emotions accurately in self and others to build good relationships
- PC11.** prioritize team and organization goals above personal goals

Respect differences of gender and ability

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

- PC12.** maintain a conducive environment for all the genders at the workplace
- PC13.** encourage appropriate behavior and conduct with people across gender
- PC14.** assist team members with disability in overcoming any challenges faced in work
- PC15.** practice appropriate verbal and non-verbal communication while interacting with People with Disability (PwD)
- PC16.** ensure equal participation of the people across genders in discussions

Knowledge and Understanding (KU)

Qualification Pack

The individual on the job needs to know and understand:

- KU1.** organisation's policies on dress code, workplace timings, workplace behaviour, performance management, incentives, delivery standards, information security, etc.
- KU2.** organisation's hierarchy and escalation matrix
- KU3.** importance of establishing good working relationships with colleagues and superiors
- KU4.** importance of helping colleagues with problems, in order to meet quality and time standards as a team
- KU5.** different means and methods of communication
- KU6.** different types of information that colleagues might need and the importance of providing this information in an appropriate manner
- KU7.** organisation's policies and procedures for working with colleagues and superiors
- KU8.** importance of understanding consequences of gender biased behaviour
- KU9.** gender based concepts, issues and legislation
- KU10.** organisation standards and guidelines to be followed for PwD and knowledge about laws, acts and provisions defined for PwD by the statutory bodies and the right way to use them including various medical conditions associated with PwD
- KU11.** health and safety requirements at workplace for PwD
- KU12.** process of recruiting people for a particular job profile w.r.t PwD and gender
- KU13.** various government/private schemes and benefits available for PwD and information about various institutes working for PwD to enable in providing livelihood opportunities for PwD

Generic Skills (GS)

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

- GS1.** read and comprehend forms, documents and records
- GS2.** read and write in English and/or local language
- GS3.** complete work with attention to detail
- GS4.** listen effectively and orally communicate information
- GS5.** work as per customer requirements
- GS6.** communicate with empathy across genders and PwD
- GS7.** improve and modify work practices
- GS8.** maintain positive and effective relationships with colleagues and customers
- GS9.** evaluate the possible solution(s) to the problem

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Interact effectively with superiors</i>	7	15	-	2
PC1. receive work requirements from superiors and customers and interpret them correctly	1	2	-	-
PC2. inform the supervisor and/or concerned person about any unforeseen disruptions or delays	2	4	-	1
PC3. participate in decision making by providing facts and figures, giving/accepting constructive suggestions	2	5	-	1
PC4. rectify errors as per feedback and ensure the errors are not repeated	2	4	-	-
<i>Interact effectively with colleagues and customers</i>	7	26	-	4
PC5. comply with organisation's policies and procedures for working with team members	1	2	-	-
PC6. communicate professionally using appropriate mode of communication such as face-to-face, telephonic and written	2	4	-	1
PC7. respond to queries and seek/provide clarifications if required	2	4	-	1
PC8. co-ordinate with team to integrate work as per requirements	-	3	-	-
PC9. resolve conflicts within the team/with customers to achieve smooth workflow	1	5	-	1
PC10. recognize emotions accurately in self and others to build good relationships	1	4	-	-
PC11. prioritize team and organization goals above personal goals	-	4	-	1
<i>Respect differences of gender and ability</i>	11	24	-	4
PC12. maintain a conducive environment for all the genders at the workplace	2	5	-	1

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. encourage appropriate behavior and conduct with people across gender	2	5	-	1
PC14. assist team members with disability in overcoming any challenges faced in work	3	4	-	1
PC15. practice appropriate verbal and non-verbal communication while interacting with People with Disability (PWD)	2	4	-	1
PC16. ensure equal participation of the people across genders in discussions	2	6	-	-
NOS Total	25	65	-	10

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N9102
NOS Name	Interact Effectively with Team Members and Customers
Sector	Telecom
Sub-Sector	Generic
Occupation	Generic
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	24/02/2022
Next Review Date	24/02/2026
NSQC Clearance Date	24/02/2022

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.)

Minimum Passing % at NOS Level: 70

(Please note: A Trainee must score the minimum percentage for each NOS separately as well as on the QP as a whole.)

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
TEL/N2304.Develop Applications in HTML5 with JavaScript and Cascading Style Sheets (CSS3)	35	50	0	15	100	20
TEL/N2305.Configure Native Applications using HTML5 and JavaScript	30	50	0	20	100	20
TEL/N2306.Test and Publish Native Phone Applications	30	50	0	20	100	20
TEL/N9101.Organise Work and Resources as per Health and Safety Standards	30	60	-	10	100	20
TEL/N9102.Interact Effectively with Team Members and Customers	25	65	-	10	100	20
Total	150	275	-	75	500	100

Qualification Pack

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training
VS	Visual Studio
IDE	Integrated Development Environment
SDK	Standard Development Kit
HTML	Hyper Text Markup Language
CSS	Cascading Style Sheets
DOM	Document Object Model
JSON	Java Script Object Notation
API	Application Programming Interface
SQL	Standard Query Language

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.

Qualification Pack

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.
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.