

Qualification Pack



Network System Associate

QP Code: TEL/Q6208

Version: 2.0

NSQF Level: 4

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

Qualification Pack

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TEL/Q6208: Network System Associate

Brief Job Description

The individual in this job role is responsible for the implementation, maintenance, and integration of WAN, LAN and server architecture. This individual is also responsible for implementation and administration of network security hardware and software, enforcing the network security policy and complying with requirements of external security audits and recommendations.

Personal Attributes

The individual in this job is required to work closely with multiple teams and third party vendors. The individual should be willing to work in the field, handle high pressure situations, adapt to changing work environment and have practical knowledge to successfully perform the assigned responsibilities.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [TEL/N6231: Establish network infrastructure](#)
2. [TEL/N6230: Implement Network and Data Security](#)
3. [TEL/N6232: Perform Preventive and Corrective Maintenance](#)
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	Network Managed Services
Occupation	Network Operation and Maintenance
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7422.0205

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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	12th Class
Pre-Requisite License or Training	NA
Minimum Job Entry Age	17 Years
Last Reviewed On	27/01/2022
Next Review Date	27/01/2026
NSQC Approval Date	27/01/2022
Version	2.0
Reference code on NQR	2022/TEL/TSSC/05290
NQR Version	1.0

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TEL/N6231: Establish network infrastructure

Description

This unit describes the outcomes required to identify the network requirement, physically realize the network and evaluate the performance.

Scope

The scope covers the following :

- Prepare for installation
- Set up network infrastructure
- Testing and performance evaluation
- Maintain required records

Elements and Performance Criteria

Prepare for installation

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

- PC1.** interact with the customer to assess the network infrastructure requirement, network service and support level
- PC2.** identify requirements of nodes, operating systems, internet connectivity pattern, applications and communication protocol to be used in the network
- PC3.** plan the space requirement for various devices along with the power and backup requirements
- PC4.** identify activities to be done for network installation, implementation and handover
- PC5.** prepare a list of the various components and accessories, such as devices, routers, switches etc. required for setting up the network
- PC6.** design a prototype of the network based on the requirements along with the IP addressing scheme and VLAN as specified by the customer
- PC7.** determine the total cost of procuring network components from third party vendor and setting up the network infrastructure
- PC8.** prepare the network design and cost estimate for customer approval
- PC9.** arrange for procurement of various components in the pre installation phase

Set up network infrastructure

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

- PC10.** collect necessary instructions/work related tasks for establishing network infrastructure from supervisor
- PC11.** identify the various components and devices needed along with their required quantity, based on the network design
- PC12.** test all devices and components to ensure that they are in proper working condition
- PC13.** collect the necessary tools, accessories and equipment needed for installation of the network
- PC14.** install local area network (LAN), wide area network (WAN), network segments, Internet, and intranet systems

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- PC15.** monitor role based data access to the users based on instructions received from the supervisor
- PC16.** perform configuration of the network hardware, switches, routers, bridges, devices and interfaces as per network design
- PC17.** install and configure all the necessary network software including operating systems, firewalls, monitoring and management tools
- PC18.** provide remote support to on-site engineers and end users/customers during installation
- PC19.** ensure network connectivity throughout the company's LAN/WAN infrastructure, both inter department and intra department, as per the organisational policy
- PC20.** provide support in creation/compilation of basic operating policies and procedures
- PC21.** monitor inter/intra department connectivity to ensure smooth flow of network traffic

Testing and performance evaluation

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

- PC22.** test the load on the network/LAN/WAN devices when under full capacity for switching/routing loops
- PC23.** inform supervisor about major faults/malfunctions in network devices
- PC24.** resolve any congestion/connectivity issues or report to supervisor if unresolved
- PC25.** evaluate functioning of the network management software (NMS) after installation and configuration

Maintain required records

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

- PC26.** maintain network details in prescribed formats for future fault localization
- PC27.** summarize results of NMS tests to be shared with concerned departments/people
- PC28.** use archived/new data to generate required reports for business
- PC29.** perform handover/sign off of the network infrastructure implementation with the authorized person

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** organizational architecture of information technology business systems
- KU2.** configuring routing and switching equipment
- KU3.** IP addressing both IPV4 & IPV6
- KU4.** different routing protocols TCP/IP, UDP, Telnet etc.
- KU5.** different network devices and other accessories required to set up a network infrastructure
- KU6.** service request procedures, tools, and techniques
- KU7.** LAN, VLAN and their limitation
- KU8.** different ways of configuring access-list
- KU9.** basic configuration of firewalls
- KU10.** organisational guidelines with respect to network connectivity and availability
- KU11.** remote troubleshooting and fault analysis

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- KU12.** escalation matrix for reporting identified incidents, troubles and/or emergencies e.g. system failures, fire and power failures
- KU13.** troubleshooting of common LAN issues
- KU14.** different Network Management Systems
- KU15.** records to be maintained and implications of non-maintenance of the same
- KU16.** types of documentation in organization and importance of the same

Generic Skills (GS)

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

- GS1.** read and understand organizational documents
- GS2.** build customer relationships and use customer centric approach
- GS3.** fill appropriate forms in required format of the company
- GS4.** evaluate the information gathered from observation, experience, reasoning, or communication
- GS5.** liaise with third party vendors
- GS6.** make decisions pertaining to the concerned area of work
- GS7.** handle multiple tasks and complete them successfully within due timelines
- GS8.** communicate effectively and respectfully with supervisor and peers
- GS9.** identify immediate or temporary solutions to resolve issues
- GS10.** document forms/logs in required format

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Prepare for installation</i>	18	10	-	4
PC1. interact with the customer to assess the network infrastructure requirement, network service and support level	2	-	-	1
PC2. identify requirements of nodes, operating systems, internet connectivity pattern, applications and communication protocol to be used in the network	2	3	-	-
PC3. plan the space requirement for various devices along with the power and backup requirements	2	-	-	-
PC4. identify activities to be done for network installation, implementation and handover	2	-	-	1
PC5. prepare a list of the various components and accessories, such as devices, routers, switches etc. required for setting up the network	2	-	-	-
PC6. design a prototype of the network based on the requirements along with the IP addressing scheme and VLAN as specified by the customer	2	-	-	1
PC7. determine the total cost of procuring network components from third party vendor and setting up the network infrastructure	2	3	-	-
PC8. prepare the network design and cost estimate for customer approval	2	-	-	1
PC9. arrange for procurement of various components in the pre installation phase	2	4	-	-
<i>Set up network infrastructure</i>	15	31	-	6
PC10. collect necessary instructions/work related tasks for establishing network infrastructure from supervisor	1	4	-	-
PC11. identify the various components and devices needed along with their required quantity, based on the network design	1	3	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. test all devices and components to ensure that they are in proper working condition	1	3	-	1
PC13. collect the necessary tools, accessories and equipment needed for installation of the network	-	3	-	-
PC14. install local area network (LAN), wide area network (WAN), network segments, Internet, and intranet systems	2	3	-	1
PC15. monitor role based data access to the users based on instructions received from the supervisor	1	3	-	-
PC16. perform configuration of the network hardware, switches, routers, bridges, devices and interfaces as per network design	2	3	-	1
PC17. install and configure all the necessary network software including operating systems, firewalls, monitoring and management tools	2	3	-	1
PC18. provide remote support to on-site engineers and end users/customers during installation	1	-	-	-
PC19. ensure network connectivity throughout the company's LAN/WAN infrastructure, both inter department and intra department, as per the organisational policy	2	3	-	-
PC20. provide support in creation/compilation of basic operating policies and procedures	1	-	-	1
PC21. monitor inter/intra department connectivity to ensure smooth flow of network traffic	1	3	-	1
<i>Testing and performance evaluation</i>	3	9	-	-
PC22. test the load on the network/LAN/WAN devices when under full capacity for switching/routing loops	-	3	-	-
PC23. inform supervisor about major faults/malfunctions in network devices	1	-	-	-
PC24. resolve any congestion/connectivity issues or report to supervisor if unresolved	1	3	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC25. evaluate functioning of the network management software (NMS) after installation and configuration	1	3	-	-
<i>Maintain required records</i>	4	-	-	-
PC26. maintain network details in prescribed formats for future fault localization	1	-	-	-
PC27. summarize results of NMS tests to be shared with concerned departments/people	1	-	-	-
PC28. use archived/new data to generate required reports for business	1	-	-	-
PC29. perform handover/sign off of the network infrastructure implementation with the authorized person	1	-	-	-
NOS Total	40	50	-	10

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National Occupational Standards (NOS) Parameters

NOS Code	TEL/N6231
NOS Name	Establish network infrastructure
Sector	Telecom
Sub-Sector	Network Managed Services
Occupation	Network Operation and Maintenance
NSQF Level	4
Credits	TBD
Version	2.0
Last Reviewed Date	27/01/2022
Next Review Date	27/01/2026
NSQC Clearance Date	27/01/2022

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TEL/N6230: Implement Network and Data Security

Description

This unit is about defining and enforcing security policies to ensure data security on the network. It also includes testing networks for vulnerabilities and developing mitigation strategies in case of intrusions.

Scope

The scope covers the following :

- Assess network vulnerability
- Implement network security measures
- Maintain documentation

Elements and Performance Criteria

Assess network vulnerability

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

- PC1.** identify requirements of nodes, operating systems, internet connectivity pattern and applications in the network from security perspective
- PC2.** perform network-based/host-based intrusion detection and risk assessment
- PC3.** verify file integrity to monitor various software components
- PC4.** evaluate system using vulnerability scanners to verify system security
- PC5.** prioritize vulnerabilities found in network infrastructure, software and hardware systems for suitable action

Implement network security measures

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

- PC6.** enforce security policies and procedures
- PC7.** monitor access control of various users on the network
- PC8.** setup firewall for proper administration
- PC9.** monitor the network to identify anomalies from security perspective for performing remediation
- PC10.** evaluate new security policies/products to help eliminate security risks and recommend suitable options to stakeholders

Maintain documentation

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

- PC11.** record any security incidents/breaches
- PC12.** summarize results of vulnerability and penetration tests
- PC13.** periodically report identified risks and available counter measures

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

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- KU1.** organisation's network topology, network management, systems, hubs, switches, routers, bridges, firewalls, modems etc.
- KU2.** network security issues
- KU3.** use of various vulnerability assessment tools
- KU4.** vulnerabilities, security threats and apt response to the identified issues
- KU5.** different ways of configuring access-list
- KU6.** basic configuration of firewalls
- KU7.** IP addressing format for IPV4 & IPV6
- KU8.** standard templates and tools available and steps to document network issues and remediation work carried out to resolve network issues
- KU9.** records to be maintained and implications of non-maintenance of the same

Generic Skills (GS)

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

- GS1.** read and interpret official documents and emails
- GS2.** analyse problems using critical thinking to arrive at possible solution(s)
- GS3.** maintain proper records as per given format

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Assess network vulnerability</i>	18	16	-	3
PC1. identify requirements of nodes, operating systems, internet connectivity pattern and applications in the network from security perspective	5	3	-	1
PC2. perform network-based/host-based intrusion detection and risk assessment	2	3	-	-
PC3. verify file integrity to monitor various software components	3	3	-	1
PC4. evaluate system using vulnerability scanners to verify system security	4	3	-	-
PC5. prioritize vulnerabilities found in network infrastructure, software and hardware systems for suitable action	4	4	-	1
<i>Implement network security measures</i>	20	20	-	4
PC6. enforce security policies and procedures	4	4	-	1
PC7. monitor access control of various users on the network	4	4	-	1
PC8. setup firewall for proper administration	4	4	-	1
PC9. monitor the network to identify anomalies from security perspective for performing remediation	4	4	-	1
PC10. evaluate new security policies/products to help eliminate security risks and recommend suitable options to stakeholders	4	4	-	-
<i>Maintain documentation</i>	12	4	-	3
PC11. record any security incidents/breaches	4	4	-	1
PC12. summarize results of vulnerability and penetration tests	4	-	-	1
PC13. periodically report identified risks and available counter measures	4	-	-	1

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
NOS Total	50	40	-	10

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National Occupational Standards (NOS) Parameters

NOS Code	TEL/N6230
NOS Name	Implement Network and Data Security
Sector	Telecom
Sub-Sector	Network Managed Services
Occupation	Network Operation and Maintenance
NSQF Level	4
Credits	TBD
Version	2.0
Last Reviewed Date	27/01/2022
Next Review Date	27/01/2026
NSQC Clearance Date	27/01/2022

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TEL/N6232: Perform Preventive and Corrective Maintenance

Description

This OS unit is about carrying out preventive maintenance of the network to reduce the down-time, corrective maintenance, troubleshooting and testing effectiveness

Scope

The scope covers the following :

- Perform preventive maintenance
- Perform corrective maintenance

Elements and Performance Criteria

Perform preventive maintenance

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

- PC1.** obtain maintenance schedule from the supervisor with respect to various devices
- PC2.** carry out inspection of network devices based on maintenance schedule
- PC3.** monitor the network infrastructure services using NMS to determine performance improvement
- PC4.** perform all the required hardware upgradation to remove components that have become obsolete/faulty
- PC5.** maintain network facilities in individual machines
- PC6.** maintain network servers such as file servers, VPN gateways, intrusion detection systems
- PC7.** obtain sign-off from the customer for the scheduled maintenance of various device

Perform corrective maintenance

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

- PC8.** use diagnostic tools and techniques to identify network service level issues and its causes
- PC9.** apply structured approach to network troubleshooting by eliminating the causes one by one
- PC10.** ensure traffic gets diverted to backup link if primary link goes down
- PC11.** implement ways to handle fault and other security issues in a timely manner
- PC12.** perform testing of the network once rectification has been done
- PC13.** maintain all necessary documents for corrective maintenance of network infrastructure such as the network issue log, resolution time etc.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** process of reporting network issues
- KU2.** organisation's network topology, network management, systems, hubs, switches, routers, bridges, firewalls, modems etc.

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- KU3.** use of various NMS
- KU4.** spares management, repair and return process for faulty equipment
- KU5.** organisation's policies, procedures and guidelines for network maintenance and troubleshooting
- KU6.** tools and techniques for network diagnostics
- KU7.** vulnerabilities, security threats and apt response to the identified issues
- KU8.** standard templates and tools available and steps to document network issues and remediation work carried out to resolve network issues
- KU9.** records to be maintained and implications of non-maintenance of the same

Generic Skills (GS)

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

- GS1.** read and interpret work orders, health and safety instructions, memos, reports etc.
- GS2.** organise service feedback files/documents
- GS3.** build customer relationships using a customer centric approach
- GS4.** prioritize tasks in a high-pressure environment and handle high pressure situations
- GS5.** handle multiple tasks and complete them successfully within due timelines
- GS6.** maintain proper records as per given format

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform preventive maintenance</i>	17	26	-	5
PC1. obtain maintenance schedule from the supervisor with respect to various devices	-	3	-	1
PC2. carry out inspection of network devices based on maintenance schedule	2	3	-	-
PC3. monitor the network infrastructure services using NMS to determine performance improvement	3	4	-	1
PC4. perform all the required hardware upgradation to remove components that have become obsolete/faulty	3	4	-	1
PC5. maintain network facilities in individual machines	3	4	-	1
PC6. maintain network servers such as file servers, VPN gateways, intrusion detection systems	3	4	-	1
PC7. obtain sign-off from the customer for the scheduled maintenance of various device	3	4	-	-
<i>Perform corrective maintenance</i>	23	24	-	5
PC8. use diagnostic tools and techniques to identify network service level issues and its causes	3	4	-	1
PC9. apply structured approach to network troubleshooting by eliminating the causes one by one	4	4	-	-
PC10. ensure traffic gets diverted to backup link if primary link goes down	4	4	-	1
PC11. implement ways to handle fault and other security issues in a timely manner	4	4	-	1
PC12. perform testing of the network once rectification has been done	4	4	-	1

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. maintain all necessary documents for corrective maintenance of network infrastructure such as the network issue log, resolution time etc.	4	4	-	1
NOS Total	40	50	-	10

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National Occupational Standards (NOS) Parameters

NOS Code	TEL/N6232
NOS Name	Perform Preventive and Corrective Maintenance
Sector	Telecom
Sub-Sector	Network Managed Services
Occupation	Network Operation and Maintenance
NSQF Level	4
Credits	TBD
Version	2.0
Last Reviewed Date	27/01/2022
Next Review Date	27/01/2026
NSQC Clearance Date	27/01/2022

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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

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- 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

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- 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

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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	-	-

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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	-	-

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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.)

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
TEL/N6231.Establish network infrastructure	40	50	0	10	100	20
TEL/N6230.Implement Network and Data Security	50	40	-	10	100	20
TEL/N6232.Perform Preventive and Corrective Maintenance	40	50	0	10	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	185	265	-	50	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
O&M	Operations and Management
LAN	Local Area Network
WAN	Wide Area Network
NMT	Network Management Tools

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.
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.

Qualification Pack

Performance Criteria	Performance Criteria are statements that together specify the standard of performance required when carrying out a task.
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.