Optical Fiber Splicer

QP Code: TEL/Q6400

Version: 4.0

NSQF Level: 3

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

Contents

TEL/Q6400: Optical Fiber Splicer

Brief Job Description

The individual in this job ensures efficient splicing of the optical fiber cables and test effectiveness and record the test results.

Personal Attributes

The job requires the individual to be physically fit, able to handle high-pressure situations, possess good communication skills and the ability to make practical judgements to successfully perform the assigned responsibilities.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. TEL/N6400: Splice Optical Fiber

2. TEL/N6401: Test Effectiveness and Record Test Results

3. TEL/N9101: Organize Work and Resources as per Health and Safety Standards

4. TEL/N9102: Interact Effectively with Team Members and Customers

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

Qualification Pack (QP) Parameters

Sector	Telecom
Sub-Sector	Passive Infrastructure
Occupation	Operations and Maintenance - Passive Infrastructure
Country	India
NSQF Level	3
Credits	14
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7422.0802

Minimum Educational Qualification & Experience	9th grade pass
	                    OR
	8th grade pass and pursuing continuous schooling in regular school with vocational subject
	                    OR
	8th grade pass with 1 Year of experience
	                    OR
	5th grade pass with 4 Years of experience

Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NA
Minimum Job Entry Age	15 Years
Last Reviewed On	NA
Next Review Date	30/12/2024
NSQC Approval Date	30/12/2021
Version	4.0
Reference code on NQR	2022/TEL/TSSC/07001
NQR Version	2

TEL/N6400: Splice Optical Fiber

Description

This OS unit is about preparing and carrying out efficient optical splicing.

Scope

The scope covers the following :

- Ensure availability of tools and spares
- Prepare cable for splicing for new installation
- Carry out maintenance of the laid Optical Fiber Cables (OFCs)
- Perform splicing operations

Elements and Performance Criteria

Ensure availability of tools and spares

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

PC1. ensure availability of optical cable test equipment (Optical Time Domain Reflectometer (OTDR), power meter, etc.)

PC2. confirm availability of optical equipment (spool, joint closure, connectors, splicer and cleaver)

PC3. check availability of joint kits, pigtails, patch cords, FDF (Fiber Distribution Frame), ODB (Optical Distribution Box) connector, protection sleeves and heat shrink

PC4. send faulty equipment to the logistics team for repair or replacement

PC5. ensure availability of RCC (Reinforced Cement Concrete) joint chambers with covers and adequate sand as per specifications

PC6. confirm availability of one spare cable drum for emergency replacement of laid cables

PC7. ensure calibration status of the equipment to be perform (e.g. splicing machine, OTDR, power meter, cleaver)

Prepare cable for splicing for new installation

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

PC8. identify exact location and fiber/fiber group for which the splicing is to be done as per network route and connectivity plan

PC9. inspect cable for sheath damage visually

PC10. dismantle/install the fiber joint box/splitter box carefully

PC11. ensure maintenance of minimum bend ratios as per manufacturer specifications to prevent cable damage and signal degradation

PC12. secure cable in accordance with the industry practices to avoid cable and sheath damage

PC13. determine appropriate fibers to be joined based on color coding and sequence

PC14. identify an appropriate place for the joint chamber location

PC15. clean fiber as per manufacturer specifications

Carry out maintenance of the laid Optical Fiber Cables (OFCs)

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

PC16. identify the route/fiber and location where splicing/maintenance needs to be done in coordination with Fiber Technician/Operation and Maintenance (O&M) team

PC17. arrange outage exclusion time (maintenance window timeline) for the fiber and route in consultation with O&M team

PC18. visit the site to identify the exact location and fiber/fiber group for which the splicing is to be done

PC19. expose the fiber fault point (by digging for trenched fiber, or opening manholes etc., as required

PC20. inspect cable for sheath damage visually

PC21. dismantle/install the fiber joint box/splitter box carefully

PC22. ensure to maintain minimum bend ratios as per manufacturer specifications to prevent cable damage and signal degradation

PC23. secure cable in accordance with the industry practice to avoid cable and sheath damage

PC24. determine appropriate fibers to be joined based on color coding and sequence

PC25. identify an appropriate place for the joint chamber location

PC26. clean the fiber as per manufacturer specifications

Perform splicing operations

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

PC27. strip cables at areas where splicing has to be performed

PC28. cleave fiber with a precision cleaver

PC29. inspect cleaved fiber ends with magnifier to ensure appropriateness

PC30. insert fiber strands to the fusion machine in accordance with the product/equipment specifications in case of fusion splicing

PC31. align fibers together by a precision-made sleeve and place the prepared fiber in mechanical splicing kit in case of mechanical splicing

PC32. use proper splice protectors like heat shrink splice protectors to protect the splice

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. spare part management process

KU2. repair and return process for faulty equipment

KU3. characteristics of Optical fiber like refraction, polarization, attenuation and dispersion

KU4. characteristics of wavelength bands in optical fiber

KU5. signal strength and quality Key Performance Indicators (KPIs) of OFCs

KU6. color coding of fiber optic cable

KU7. principles of optical transport media

KU8. types of OFC connectors

KU9. functioning of optical equipment like cleaver, mechanical and fusion splicing kit, protection sleeves, fiber stripper, fiber reinforced plaster during splicing and jointing

KU10. alignment errors during splicing of optical fibers like Lateral, Axial, Angular and Poor end finish

KU11. procedure for sealing joints, heat shrinking/multi-diameter seals/mechanical seals etc

Generic Skills (GS)

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

GS1. fill up standard technical forms and activity logs

GS2. maintain proper records in the prescribed format

GS3. communicate with supervisor and peers

GS4. communicate in the local language (preferably)

GS5. maintain effective working relationships

GS6. use resources efficiently and effectively

GS7. execute tasks in a high-pressure environment

GS8. be flexible and accept changes in job requirements, schedules, or work environments

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Ensure availability of tools and spares	**11**	**19**	**-**	**2**
PC1. ensure availability of optical cable test equipment (Optical Time Domain Reflectometer (OTDR), power meter, etc.)	1	2	-	1
PC2. confirm availability of optical equipment (spool, joint closure, connectors, splicer and cleaver)	1	3	-	-
PC3. check availability of joint kits, pigtails, patch cords, FDF (Fiber Distribution Frame), ODB (Optical Distribution Box) connector, protection sleeves and heat shrink	2	3	-	1
PC4. send faulty equipment to the logistics team for repair or replacement	2	3	-	-
PC5. ensure availability of RCC (Reinforced Cement Concrete) joint chambers with covers and adequate sand as per specifications	2	3	-	-
PC6. confirm availability of one spare cable drum for emergency replacement of laid cables	1	2	-	-
PC7. ensure calibration status of the equipment to be perform (e.g. splicing machine, OTDR, power meter, cleaver)	2	3	-	-
Prepare cable for splicing for new installation	**9**	**16**	**-**	**3**
PC8. identify exact location and fiber/fiber group for which the splicing is to be done as per network route and connectivity plan	1	3	-	-
PC9. inspect cable for sheath damage visually	1	2	-	1
PC10. dismantle/install the fiber joint box/splitter box carefully	1	2	-	-
PC11. ensure maintenance of minimum bend ratios as per manufacturer specifications to prevent cable damage and signal degradation	1	2	-	1

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. secure cable in accordance with the industry practices to avoid cable and sheath damage	1	2	-	1
PC13. determine appropriate fibers to be joined based on color coding and sequence	3	1	-	-
PC14. identify an appropriate place for the joint chamber location	1	3	-	-
PC15. clean fiber as per manufacturer specifications	-	1	-	-
Carry out maintenance of the laid Optical Fiber Cables (OFCs)	**10**	**13**	**-**	**3**
PC16. identify the route/fiber and location where splicing/maintenance needs to be done in coordination with Fiber Technician/Operation and Maintenance (O&M) team	1	1	-	-
PC17. arrange outage exclusion time (maintenance window timeline) for the fiber and route in consultation with O&M team	1	1	-	-
PC18. visit the site to identify the exact location and fiber/fiber group for which the splicing is to be done	1	1	-	1
PC19. expose the fiber fault point (by digging for trenched fiber, or opening manholes etc., as required	1	1	-	-
PC20. inspect cable for sheath damage visually	1	3	-	1
PC21. dismantle/install the fiber joint box/splitter box carefully	1	1	-	1
PC22. ensure to maintain minimum bend ratios as per manufacturer specifications to prevent cable damage and signal degradation	1	1	-	-
PC23. secure cable in accordance with the industry practice to avoid cable and sheath damage	-	1	-	-
PC24. determine appropriate fibers to be joined based on color coding and sequence	2	1	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC25. identify an appropriate place for the joint chamber location	1	1	-	-
PC26. clean the fiber as per manufacturer specifications	-	1	-	-
Perform splicing operations	**5**	**7**	**-**	**2**
PC27. strip cables at areas where splicing has to be performed	1	1	-	-
PC28. cleave fiber with a precision cleaver	1	1	-	1
PC29. inspect cleaved fiber ends with magnifier to ensure appropriateness	-	1	-	1
PC30. insert fiber strands to the fusion machine in accordance with the product/equipment specifications in case of fusion splicing	1	2	-	-
PC31. align fibers together by a precision-made sleeve and place the prepared fiber in mechanical splicing kit in case of mechanical splicing	1	1	-	-
PC32. use proper splice protectors like heat shrink splice protectors to protect the splice	1	1	-	-
NOS Total	**35**	**55**	**-**	**10**

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N6400
NOS Name	Splice Optical Fiber
Sector	Telecom
Sub-Sector	Network Managed Services
Occupation	Operations and Maintenance - Passive Infrastructure
NSQF Level	3
Credits	5
Version	3.0
Last Reviewed Date	NA
Next Review Date	30/12/2024
NSQC Clearance Date	30/12/2021

TEL/N6401: Test Effectiveness and Record Test Results

Description

This OS unit is about testing the effectiveness of the spliced optical fiber through OTDR (Optical Time Domain Reflectometer) and Power meter tests.

Scope

The scope covers the following :

- Test effectiveness of splice through OTDR and power meter tests
- Record Test Results
- Follow Health and Safety procedures with regards to fiber splicing

Elements and Performance Criteria

Test effectiveness of splice through OTDR and power meter tests

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

PC1. test fiber joint with OTDR to check conformance to design requirements

PC2. keep optical losses (reflectance, return, insertion loss etc.) within the defined specifications

PC3. seal joint closures through heat shrinking, multi-diameter seals or mechanical seals, as required

PC4. use FRP (Fiber Reinforced Plastic) to strengthen the joint

PC5. ensure proper placement of the joint in the chamber

PC6. ensure the spare cable (loop) is coiled appropriately and placed inside the joint

PC7. conduct power source and power meter tests at both ends of the fiber for instances of cross fiber and ensure their elimination

PC8. fill sand in the chamber to the brim and place the chamber covers properly

PC9. plant the joint indicator 1 meter behind the chamber location (away from the road)

PC10. ensure correct paint color of the route indicators (e.g. yellow for joint)

PC11. remove alignment errors during splicing of optical fibers including errors like Lateral, Axial, Angular and poor end finish

Record test results

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

PC12. identify the documents to be updated

PC13. prepare jointing record for future reference

PC14. complete the record of jointing tests in OTDR register

PC15. make documents available to appropriate authorities for inspection

Follow Health and Safety procedures with regards to fiber splicing

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

PC16. ensure sites are assessed for health and safety risks as per industry guidelines before commencement of work

PC17. use PPE (Personal Protection Equipment) like helmets, knee pads, safety boots, safety glasses and trench guards appropriately

PC18. comply with site risk control, OHS, environmental, quality and legal requirements at all times

PC19. determine environmental conditions and hazards like Earth Potential Rise (EPR) while carrying out the work

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. reporting and documentation procedure of the company

KU2. functioning/working of optical test equipment like OTDR and power meters

KU3. optimal values of OTDR, power meter and light meter test results

KU4. Health and Safety Environment (HSE) and Occupational Health and Safety (OHS) regulations

KU5. risks and impact of not following the defined procedures/work instructions

KU6. correct usage of Personal Protective Equipment (PPE) like helmets, knee pads, safety boots, safety glasses and trench guards

KU7. first aid treatment in case of electrical shocks, cuts, fall and other common injuries

KU8. standard procedure for disposal of cut fibers and other waste material

Generic Skills (GS)

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

GS1. read manuals, work orders, health and safety instructions, etc.

GS2. fill up standard technical forms and activity logs

GS3. maintain proper records in the prescribed format

GS4. communicate with supervisor and peers

GS5. communicate in the local language (preferably)

GS6. use resources efficiently and effectively

GS7. execute tasks in a high pressure environment

GS8. maintain effective working relationships

GS9. be flexible and accept changes in job requirements, schedules, or work environments

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Test effectiveness of splice through OTDR and power meter tests	**15**	**35**	**-**	**4**
PC1. test fiber joint with OTDR to check conformance to design requirements	1	3	-	1
PC2. keep optical losses (reflectance, return, insertion loss etc.) within the defined specifications	1	2	-	-
PC3. seal joint closures through heat shrinking, multi-diameter seals or mechanical seals, as required	1	3	-	-
PC4. use FRP (Fiber Reinforced Plastic) to strengthen the joint	2	3	-	-
PC5. ensure proper placement of the joint in the chamber	2	3	-	-
PC6. ensure the spare cable (loop) is coiled appropriately and placed inside the joint	2	4	-	-
PC7. conduct power source and power meter tests at both ends of the fiber for instances of cross fiber and ensure their elimination	2	5	-	1
PC8. fill sand in the chamber to the brim and place the chamber covers properly	1	3	-	-
PC9. plant the joint indicator 1 meter behind the chamber location (away from the road)	1	2	-	1
PC10. ensure correct paint color of the route indicators (e.g. yellow for joint)	1	2	-	-
PC11. remove alignment errors during splicing of optical fibers including errors like Lateral, Axial, Angular and poor end finish	1	5	-	1
Record test results	**4**	**10**	**-**	**2**
PC12. identify the documents to be updated	1	2	-	-
PC13. prepare jointing record for future reference	1	3	-	1

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. complete the record of jointing tests in OTDR register	1	3	-	-
PC15. make documents available to appropriate authorities for inspection	1	2	-	1
Follow Health and Safety procedures with regards to fiber splicing	**11**	**15**	**-**	**4**
PC16. ensure sites are assessed for health and safety risks as per industry guidelines before commencement of work	2	4	-	1
PC17. use PPE (Personal Protection Equipment) like helmets, knee pads, safety boots, safety glasses and trench guards appropriately	2	4	-	1
PC18. comply with site risk control, OHS, environmental, quality and legal requirements at all times	3	4	-	1
PC19. determine environmental conditions and hazards like Earth Potential Rise (EPR) while carrying out the work	4	3	-	1
NOS Total	**30**	**60**	**-**	**10**

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N6401
NOS Name	Test Effectiveness and Record Test Results
Sector	Telecom
Sub-Sector	Network Managed Services
Occupation	Operations and Maintenance - Passive Infrastructure
NSQF Level	3
Credits	5
Version	3.0
Last Reviewed Date	NA
Next Review Date	30/12/2024
NSQC Clearance Date	30/12/2021

TEL/N9101: Organize 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

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

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

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Perform work as per quality standards	**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	-	-
Maintain safe, healthy and secure working environment	**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	-	-

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	-	-
Conserve material/energy/electricity	**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	-	-

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	-	-
Use effective waste management/recycling practices	**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**

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N9101
NOS Name	Organize Work and Resources as per Health and Safety Standards
Sector	Telecom
Sub-Sector	Generic
Occupation	Generic
NSQF Level	4
Credits	1
Version	2.0
Last Reviewed Date	NA
Next Review Date	24/02/2025
NSQC Clearance Date	24/02/2022

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)

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

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Interact effectively with superiors	**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	-	-
Interact effectively with colleagues and customers	**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
Respect differences of gender and ability	**11**	**24**	**-**	**4**
PC12. maintain a conducive environment for all the genders at the workplace	2	5	-	1

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**

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	1
Version	2.0
Last Reviewed Date	NA
Next Review Date	24/02/2025
NSQC Clearance Date	24/02/2022

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

Description

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

Scope

The scope covers the following :

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

Elements and Performance Criteria

Introduction to Employability Skills

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

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

Constitutional values – Citizenship

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

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

Becoming a Professional in the 21st Century

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

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

Basic English Skills

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

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

Communication Skills

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

PC5. follow good manners while communicating with others

PC6. work with others in a team

Diversity & Inclusion

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

PC7. communicate and behave appropriately with all genders and PwD

PC8. report any issues related to sexual harassment

Financial and Legal Literacy

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

PC9. use various financial products and services safely and securely

PC10. calculate income, expenses, savings etc.

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

Essential Digital Skills

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

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

PC13. use internet and social media platforms securely and safely

Entrepreneurship

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

PC14. identify and assess opportunities for potential business

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

Customer Service

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

PC16. identify different types of customers

PC17. identify customer needs and address them appropriately

PC18. follow appropriate hygiene and grooming standards

Getting ready for apprenticeship & Jobs

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

PC19. create a basic biodata

PC20. search for suitable jobs and apply

PC21. identify and register apprenticeship opportunities as per requirement

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. need for employability skills

KU2. various constitutional and personal values

KU3. different environmentally sustainable practices and their importance

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

KU5. how to use basic spoken English language

KU6. Do and dont of effective communication

KU7. inclusivity and its importance

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

KU9. different types of financial products and services

KU10. how to compute income and expenses

KU11. importance of maintaining safety and security in financial transactions

KU12. different legal rights and laws

KU13. how to operate digital devices and applications safely and securely

KU14. ways to identify business opportunities

KU15. types of customers and their needs

KU16. how to apply for a job and prepare for an interview

KU17. apprenticeship scheme and the process of registering on apprenticeship portal

Generic Skills (GS)

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

GS1. communicate effectively using appropriate language

GS2. behave politely and appropriately with all

GS3. perform basic calculations

GS4. solve problems effectively

GS5. be careful and attentive at work

GS6. use time effectively

GS7. maintain hygiene and sanitisation to avoid infection

Assessment Criteria

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

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

National Occupational Standards (NOS) Parameters

NOS Code	DGT/VSQ/N0101
NOS Name	Employability Skills (30 Hours)
Sector	Cross Sectoral
Sub-Sector	Professional Skills
Occupation	Employability
NSQF Level	2
Credits	1
Version	1.0
Last Reviewed Date	NA
Next Review Date	17/11/2025
NSQC Clearance Date	17/11/2022

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.

Minimum Aggregate Passing % at QP Level : 50

(**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/N6400.Splice Optical Fiber	35	55	-	10	100	25
TEL/N6401.Test Effectiveness and Record Test Results	30	60	-	10	100	25
TEL/N9101.Organize 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
DGT/VSQ/N0101.Employability Skills (30 Hours)	20	30	-	-	50	10
Total	**140**	**270**	**-**	**40**	**450**	**100**

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training

Glossary

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

Knowledge and Understanding (KU)	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.
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.