

Model Curriculum

G RTP

SECTOR: TELECOM

SUB-SECTOR: NETWORK MANAGED SERVICES

OCCUPATION: OPERATION & MAINTENANCE

REF ID: TEL/Q6207

NSQF LEVEL: 4



Certificate

COMPLIANCE TO QUALIFICATION PACK – NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the

TELECOM SECTOR SKILL COUNCIL

for

SKILLING CONTENT : PARTICIPANT HANDBOOK

Complying to National Occupational Standards of
Job Role / Qualification Pack : 'Grass Root Telecom Provider'
QP No. 'TEL/Q6202, NSQF Level 4'

Date of Issuance: **May 15th, 2016**
Valid up to*: **May 15th, 2018**

*Valid up to the next review date of the Qualification Pack or the
'Valid up to' date mentioned above (whichever is earlier)



Authorised Signatory
(Telecom Sector Skill Council)

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CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a "Village Level Executive", in the "Telecom" Sector/Industry and aims at building the following key competencies amongst the learner.

Program Name	Grass Root Telecom Provider		
Qualification Pack Name & Reference ID. ID	TEL/Q6207		
Version No.	1.0	Version Update Date	
Pre-requisites to Training	Preferably 10+2		
Training Outcomes	<p>After completing this programme, participants will be able to:</p> <ul style="list-style-type: none"> • Identify: GPON equipment @ gram panchayaths. • Provide: ONT site security & hygiene. • Maintain: ONT services, ONT -CCU & SPV connectivity. • Provide basic checks and report: Keeping the ONT set up clean, away from dust, water and maintain the active set up undisturbed. • Provide Preventive maintainace: ONT, CCU& SPV preventive measures, execute the preventive actions to be taken. • Promote: Use of smartphones & ONT services. 		

This course encompasses 3 out of 3 National Occupational Standards (NOS) of “Grass Root Telecom provider” Qualification Pack issued by “Telecom Skill Council of India”.

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	<p>Telecommunications</p> <p>Theory Duration (hh:mm) 10:00</p> <p>Practical Duration (hh:mm) 07:00</p> <p>Corresponding NOS Code Bridge Module</p>	<ul style="list-style-type: none"> Understand Telecom History Learn on Communication Types Understand Transmission Media Understand Electromagnetic spectrum Understand Mobile Technologies Know about Fiber-Optic Communication Understand Optical Communication Systems Understand Optical Fibers as Communication Channel Understand Optical Transmitters & Receivers 	Laptop, white board, marker, projector
2	<p>Networking Essentials</p> <p>Theory Duration (hh:mm) 15:00</p> <p>Practical Duration (hh:mm) 20:00</p> <p>Corresponding NOS Code TEL/h6226</p>	<ul style="list-style-type: none"> Understand Overview of Computer Networks Understand Types of Network Understand Network Topologies Understand IP Address Understand Sub-netting Understand Configuring Network Connectivity Learn IP addressing and Configuring Network Connectivity Learn subnetting and learn Network identification 	Laptop, white board, marker, projector, working on Packet tracer
3	<p>Introduction to Optics</p> <p>Theory Duration (hh:mm) 20:00</p> <p>Practical Duration (hh:mm) 15:00</p> <p>Corresponding NOS Code TEL/N6227</p>	<ul style="list-style-type: none"> Understand Fiber Optics basics Learn Advantages and Disadvantages of Fiber Optics Understand Optical Fiber Standards Understand Fiber Structure Learn about Transmission Capacity of Fiber Understand Fiber Refractive Index Profiles Learn about Polarization and Interference Effects Understand Chromatic Dispersion & Propagation Modes Understand Snell's Law & Critical Angle Learn about Optical Sources Know LED Classifications Know Lasers Classifications Understand on Optical Radiation 	Laptop, white board, marker, projector
4	<p>Optical Fiber Characteristics</p> <p>Theory Duration (hh:mm) 15:00</p> <p>Practical Duration (hh:mm) 10:00</p> <p>Corresponding NOS Code</p>	<ul style="list-style-type: none"> Understand Fiber Optics Know the Structure of Fiber Optics Understand Fiber Optics types Understand Fiber Design Issues Understand Fiber Testing Methods Know about ITU Fiber Standards Understand External Factors Impacting Optical Cables Know the Fiber Attributes 	Laptop, white board, marker, projector

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	TEL/n6227		
5	FTTX Theory Duration (hh:mm) 09:00 Practical Duration (hh:mm) 07:00 Corresponding NOS Code TEL/n6228	<ul style="list-style-type: none"> Understand FTTX Terminology Know the Types of FTTX Learn FTTX protocols Understand FTTH Network Planning Understand Design of FTTH Network 	Laptop, white board, marker, projector
6	GPON Theory Duration (hh:mm) 15:00 Practical Duration (hh:mm) 30:00 Corresponding NOS Code TEL/N6226&TEL/N6227	<ul style="list-style-type: none"> Understand Overview of NOFN Understand GPON Know GPON Basic Architecture Understand GPON Principle Learn about GPON - Devices Understand Features and Functions of OLT & ONT Understand Features & Functions of CCU& Splitter Learn GPON Installation procedure Know about end to end connectivity of GPON Learn IP Configuration in OLT & ONT Know the GPON Service Connectivity Diagram Learn GPS Operation and Handling 	Laptop, white board, marker, projector, ONT,CCU&SPV, GPS, OTDR& Power meter
7	PON Maintainace & ONT -CCU Indicators Theory Duration (hh:mm) 07:00 Practical Duration (hh:mm) 25:00 Corresponding NOS Code TEL/N6226&TEL/N6227	<ul style="list-style-type: none"> Learn about PON Maintenance & Troubleshoot Understand Features of ONT Hardware Understand LED Identity in ONT Understand CCU Monitoring Panel Indicators 	Laptop, white board, marker, projector ONT,CCU&SPV
8	ONT Services & Maintenance Theory Duration (hh:mm) 07:00 Practical Duration (hh:mm) 26:00 Corresponding NOS Code TEL/N6226&TEL/N6227	<ul style="list-style-type: none"> Learn on ONT Status Check Learn about LED Verification Understand CCU Status Verification Know about ONT Service Configurations Learn ONT Preventive Maintenance Learn ONT Registration Failures and Solutions 	Laptop, white board, marker, projector ONT,CCU&SPV, Power meter
9	Promote use of devices and provide services Theory Duration	<ul style="list-style-type: none"> Keep abreast with the latest Apps/Technology in banking, health and Education sectors. 	e-devices (smartphones, feature phones, access to e-

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	(hh:mm) 07:00 Practical Duration (hh:mm) 15:00 Corresponding NOS Code TEL/N6226&TEL/N6227	<ul style="list-style-type: none"> Keep abreast with the e-Governance initiatives (citizen services, e-agriculture etc) and how to reach them to the citizens Learn how to spread the awareness among the local population Learn how to configure the smart phones, tablet and e-terminals to deliver e-services Installation of routers, UPS, hot-spots, wi-fi etc Record maintaining and billing procedures 	Governance applications etc), basic networking hardware (routers, switches, UPS etc).
10	General Safety Theory Duration (hh:mm) 05:00 Practical Duration (hh:mm) 10:00 Corresponding NOS Code TEL/N6228	<ul style="list-style-type: none"> Learn about General Safety while handling electrical/electronic devices Understand Proper use of PPE (Personal Protective Equipment's) Understand on Work Environment Area Protection 	Laptop, white board, marker, projector and demonstration on health and safety
11	IT & Soft Skills Theory Duration (hh:mm) 10:00 Practical Duration (hh:mm) 15:00 Corresponding NOS Code TEL/N6228	<ul style="list-style-type: none"> Understand Importance of MS-Office applications Understand and work with Microsoft Word, Excel, PowerPoint and Outlook Understand the Importance of Business email communication Understand Dos and Don'ts of Email Communication Safe practices on use of e-space/internet/web Understand the use of Language and Important Words for Communication Understand the Importance of Body Language Understand the Dos and Don'ts at Work Place Understand the differences between hearing and listening Understand the Importance of Time Management 	Working on MS-Office tools
	Total Duration Theory Duration 120:00 Practical Duration 180:00	Unique Equipment Required: Laptop, white board, marker, projector	

Grand Total Course Duration: 300Hours, 0 Minutes

(This syllabus/ curriculum has been approved by [Telecom Skill Council of India](#))

Trainer Prerequisites for Job role: “Grass Root Telecom provider” mapped to Qualification Pack: “TEL/Q6207, v1.0”

Sr. No.	Area	Details
1	Description	Village level executive provides ONT services like wifi, his, fax & iptv services to local villagers. VLE acts as Interface to bsnl for maintenance of installed equipment and report the issues correspondingly. VLE should perform Site maintenance, site security and hygiene.
2	Personal Attributes	A VLE should have a mind for service& entrepreneurship, belongingness to the community, compassion for working for the village, good leadership, communication and observation skills. He / she should be physically normal and have manual dexterity to perform on the job.
3	Minimum Educational Qualifications	Diploma / B.E preferable
4a	Domain Certification	Certified for Job Role: “Grass Root Telecom Provider” mapped to QP: “ <u>TEL/Q6207, v1.0</u> ”. Minimum accepted score is 40%
4b	Platform Certification	Recommended that the Trainer is certified for the Job Role: “Trainer”, mapped to the Qualification Pack: “TEL/Q6207”. Minimum accepted % as per respective SSC guidelines is 70%.
5	Experience	

Annexure: Assessment Criteria

Assessment Criteria	
Job Role	G RTP
Qualification Pack	TEL/Q6207
Sector Skill Council	Telecom

Sr. No.	Guidelines for Assessment
1	Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2	The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3	Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training centre(as per assessment criteria below)
4	Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on these criteria.
5	To pass the Qualification Pack, every trainee should score a minimum of 40% in every NOS and 50% overall.
6	In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack.

Assessment Outcome	Assessment Criteria	Total Mark (300)	Out of	Theory	Skills Practical
TEL/N6226 Site Security and hygiene	PC1. Function as custodian by taking responsibility of the ONT site.	100	10	10	0
	PC2. Monitor to verify CCU, SPV, TJB and battery bank are working properly.		15	3	12
	PC3. Maintain hygiene of CCU, SPV, TJB and Battery Bank based on guidelines.		15	3	12
	PC4. Verify cable connectors for appropriate tightness.		10	2	8
	PC5. Verify cables for damage and replace if required.		10	2	8
	PC6. Use fire extinguisher to control fire in case of accident.		10	2	8
	PC7. Ensure ONT remain operational and powered on 24X7 bases.		20	5	15
	PC8. Fill in activity records in given format.		10	5	5
		Total	100	32	68
TEL/N6227 Preventive Maintenance	PC1. Read to interpret preventive maintenance guidelines of CCU, SPV, TJB and battery bank.	100	20	10	10
	PC2. Ensure preventive maintenance of CCU, SPV, TJB and battery bank as per given schedule.		30	10	20
	PC3. Monitor CCU panel to observe and interpret alarm.		10	2	8
	PC4. Monitor and verify premature ageing of battery bank cells and SPV panels		10	2	8
	PC5. Monitor patch cord and pigtails and replace if found damaged.		10	2	8
	PC6. Escalate to OLT/NOS supervisor for reporting problems with equipment's and optical fiber cables.		20	10	10
		Total	100	36	64
TEL/N6228 Promote use of devices and provide services	PC1. Create awareness by informing local population features of local.	100	15	5	10
	PC2. Acquaint local population about use of local devices.		20	5	15
	PC3. Operate and configure smart phone, tablets and e- terminals.		20	5	15
	PC4. Install to operate modem using routers, UPS, cables.		15	5	10
	PC 5. Perform basic trouble shooting with devices.		15	5	10
	PC 6. Distribute bills and collect revenue from users.		5	2	3

	PC 7. Keep a record of rent agreement and electricity bill for ONT.		5	4	1
	PC8. Report superior for timely payment of rent and electricity bill for the site.		5	3	2
		Total	100	34	66