GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP

Handset Repair Engineer-II

QP Code: TEL/Q2201

Version: 1.0

NSQF Level: 4

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

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GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
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TEL/Q2201: Handset Repair Engineer-II

Brief Job Description

Handset repair engineer is responsible for performing handset repair including hardware and software components and testing the handset for adequacy post repair.

Personal Attributes

This job requires the individual to be analytical and be able to handle high pressure situations to successfully perform the assigned responsibilities. He should have basic written and oral communication skills andshould be able to apply practical judgement to successfully perform the assigned responsibilities.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. TEL/N2203: Perform handset repair- hardware

2. TEL/N2204: Perform handset repair- software

3. TEL/N2205: Perform Tablet Repair Hardware & Software

Qualification Pack (QP) Parameters

Sector	Telecom
Sub-Sector	Handset
Occupation	Customer Service
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7422.0203

Minimum Educational Qualification & Experience	12th Class
	      OR
	I.T.I (Electronics, Computer Science, IT and related field)
	      OR
	Diploma (Electronics, Computer Science, IT and related field)

Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	21/06/2018
Next Review Date	31/03/2022
NSQC Approval Date	18/06/2015
Version	1.0
Reference code on NQR	2015/TEL/TSSC/00484
NQR Version	1.0

TEL/N2203: Perform handset repair- hardware

Description

This unit is about carrying out repair activities related to handset hardware.

Scope

Undertake fault diagnosisGet appropriate spares from internal storePerform handset hardware related repair activities (handset equipment associated components etc)Test handset post repair activity to ensure optimal performance Report and document the status at the end of repair activity

Elements and Performance Criteria

Obtain handsets from customer/ relevant teams

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

PC1. Ensure faulty handsets are received from the customer facing team

PC2. Obtain/ note fault details as mentioned by the customer facing team and other handset specifications

PC3. Obtain the committed repair timelines (SLAs)

PC4. Prioritize repair activities as per guidelines

Arrange for tools and spares

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

PC5. ensure clean, neat, dust free and organized working environment

PC6. Determine components required based on fault diagnosis

PC7. Obtain materials required(such as components, equipments, testing devices and other inventory) as per organizational procedures

PC8. Ensure that tools, equipment and testing devices are in proper working condition and caliberated

PC9. Ensure compliance with lead free soldering techniques

Undertake Handset repair activities

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

PC10. Refer the company (handset manufacturer) specific technical database to identify root cause of handset fault and to determine rectification options

PC11. Isolate the cause of fault by conducting appropriate diagnostic test, in case detailsare not available

PC12. Determine the options to rectify the fault and confirm with supervisors, if require

PC13. Dismantle handset/components as per organizational guidelines/procedures

PC14. Ensure rectification of handset fault within the SLAs

PC15. Ensure timely escalation of emergency/ unresolved issues according to established procedure

PC16. Ensure all repairs conform to the quality targets in terms of bounce and repeat repair percentages,first time fix etc

Test effectiveness & close activity

![Telecom Sector Skill Council logo]

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![NSDC logo — National Skill Development Corporation — Transforming the skill landscape]

Qualification Pack

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

PC17. Assess test equipments are appropriately calibrated

PC18. Confirm effectiveness of the repair process, by utilizing appropriate test equipments as per standard test processes

PC19. Ensure that fault has been rectified without any collateral damage to handset

PC20. Handover repaired handset to appropriate authority

PC21. Ensure completion of administrative jobs like site clearance, return of test equipments

Safety requirements (Equipment & Self)

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

PC22. Pass through ESD test before entering the facility

PC23. Ensure that protection equipments like ESD equipments, anti-static bands, clothes and gloves are appropriately used as required

PC24. Ensure compliance with site risk control, OHS, environmental and quality requirements as per company's norms

PC25. Ensure escalation of safety incidents to relevant authorities as per guidelines

Report & Record

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

PC26. Ensure that handset inventory in hand for repairs is tracked and accounted for appropriately as per company procedures

PC27. Ensure record sheets are completed accurately, as per company guidelines

PC28. Ensure all relevant parties (including supervisors, customer teams) are notified of the completion of repair activity

PC29. Retain documents for specific period of time, as per company procedure

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. Risk and impact of not following defined procedures/work instructions

KU2. Escalation matrix for reporting identified incidents, troubles and/ or emergencies eg system failures ,fire and power failures

KU3. Applicable Key Performance Indicators (KPIs) and Service Level Agreements (SLAs) including production rate and bounce rate (external and internal)

KU4. Types of documentation in organization and importance of the same

KU5. Process for obtaining sign-off post completion of the maintenance activities

KU6. Knowledge of spare management and repair & return process for faulty components

KU7. SHE and OHS guidelines and regulations as per companys norms

KU8. Protection equipments (anti-static wrist bands, shoes, dress, packaging, and other appropriate insulations) that are required to be used

KU9. First aid requirements in case of electrical shocks, cuts and other commoninjuries

KU10. Functionality and features/working of handsets

KU11. Handset specific operating system and user interface

KU12. Functionality of hardware components in a handset like chipsets, processor, screen, touchpad etc

KU13. Have basic knowledge of electronic components in a handset

KU14. Procedure to dismantle and assemble handset and handset components

KU15. Range of tools and testing equipment (multimeters, frequency generators etc) available and their functionality

KU16. ESD hazards and their effect on electronic components

KU17. Range of handset related problems and their possible solutions

KU18. Standard fault-finding (troubleshooting) techniques

Generic Skills (GS)

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

GS1. Read and understand technical manuals, work orders and reports

GS2. Read and understand organizational health and safety instructions

GS3. Fill up record sheets clearly, concisely and accurately as per company procedures

GS4. Clearly communicate relevant information to supervisors

GS5. Respond appropriately to queries

GS6. Communicate with customer/customer facing teams to understand handset performance issues.

GS7. Communicate in the local language

GS8. Convey proposed solution to the customers

GS9. Prioritize and execute tasks in a high-pressure environment

GS10. Use and maintain resources efficiently and effectively.

GS11. Analyse (and understand) customer complaints

GS12. Interpret reports, readings and numerical data

GS13. Keep up to date with new technology and performance issues.

GS14. Create and maintain effective working relationships and team environmentthrough collaboration.

GS15. Take initiatives and progressively assume increased responsibilities

GS16. Share knowledge with other team members and colleagues

GS17. Use and access all handset features and applications

GS18. Take data backup

GS19. Operate handset testing equipments including test jigs, frequency generators etc

GS20. Connect hadset PCB to PC/test equipment for diagnostics

GS21. Initialize PC based diagnostic tools

GS22. Undertake fault diagnostic

GS23. Interpret test results to identify and localize faults

GS24. Utilize appropriate mechanisms and tools to rectify the faults

GS25. Utilize appropriate communication channels to escalate unresolved problems

GS26. Test handset to confirm resolve of the reported fault

GS27. Safely dismantle/assemble handset using the right tools

GS28. Safely connectorise the handset to PC for software transfer

GS29. Safe remove/replace components using right tools

GS30. Compliance to ESD protection measures

GS31. How to approach a defect

GS32. Make use of standard OEM specified troubleshooting steps

GS33. Interpret intermediate results and progress fault rectification accordingly

GS34. Utilize appropriate tools to rectify faults.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Obtain handsets from customer/ relevant teams	**15**	**5**	**-**	**-**
PC1. Ensure faulty handsets are received from the customer facing team	5	-	-	-
PC2. Obtain/ note fault details as mentioned by the customer facing team and other handset specifications	5	-	-	-
PC3. Obtain the committed repair timelines (SLAs)	5	-	-	-
PC4. Prioritize repair activities as per guidelines	-	5	-	-
Arrange for tools and spares	**15**	**-**	**-**	**-**
PC5. ensure clean, neat, dust free and organized working environment	3	-	-	-
PC6. Determine components required based on fault diagnosis	3	-	-	-
PC7. Obtain materials required(such as components, equipments, testing devices and other inventory) as per organizational procedures	3	-	-	-
PC8. Ensure that tools, equipment and testing devices are in proper working condition and caliberated	3	-	-	-
PC9. Ensure compliance with lead free soldering techniques	3	-	-	-
Undertake Handset repair activities	**-**	**26**	**-**	**-**
PC10. Refer the company (handset manufacturer) specific technical database to identify root cause of handset fault and to determine rectification options	-	4	-	-
PC11. Isolate the cause of fault by conducting appropriate diagnostic test, in case detailsare not available	-	3	-	-
PC12. Determine the options to rectify the fault and confirm with supervisors, if require	-	4	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. Dismantle handset/components as per organizational guidelines/procedures	-	4	-	-
PC14. Ensure rectification of handset fault within the SLAs	-	4	-	-
PC15. Ensure timely escalation of emergency/ unresolved issues according to established procedure	-	4	-	-
PC16. Ensure all repairs conform to the quality targets in terms of bounce and repeat repair percentages,first time fix etc	-	3	-	-
Test effectiveness & close activity	**-**	**19**	**-**	**-**
PC17. Assess test equipments are appropriately calibrated	-	6	-	-
PC18. Confirm effectiveness of the repair process, by utilizing appropriate test equipments as per standard test processes	-	3	-	-
PC19. Ensure that fault has been rectified without any collateral damage to handset	-	4	-	-
PC20. Handover repaired handset to appropriate authority	-	3	-	-
PC21. Ensure completion of administrative jobs like site clearance, return of test equipments	-	3	-	-
Safety requirements (Equipment & Self)	**10**	**-**	**-**	**-**
PC22. Pass through ESD test before entering the facility	2	-	-	-
PC23. Ensure that protection equipments like ESD equipments, anti-static bands, clothes and gloves are appropriately used as required	3	-	-	-
PC24. Ensure compliance with site risk control, OHS, environmental and quality requirements as per company's norms	2	-	-	-
PC25. Ensure escalation of safety incidents to relevant authorities as per guidelines	3	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Report & Record	**10**	-	-	-
PC26. Ensure that handset inventory in hand for repairs is tracked and accounted for appropriately as per company procedures	3	-	-	-
PC27. Ensure record sheets are completed accurately, as per company guidelines	3	-	-	-
PC28. Ensure all relevant parties (including supervisors, customer teams) are notified of the completion of repair activity	2	-	-	-
PC29. Retain documents for specific period of time, as per company procedure	2	-	-	-
NOS Total	**50**	**50**	-	-

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N2203
NOS Name	Perform handset repair- hardware
Sector	Telecom
Sub-Sector	Handset
Occupation	Customer Service
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	26/05/2017
Next Review Date	31/03/2022
NSQC Clearance Date	18/06/2015

TEL/N2204: Perform handset repair- software

Description

Perform Handset Repair- Software.

Scope

Undertake fault diagnosisEnsure availability of correct software/ software versionPerform software uploading/upgrade. Test handset post repair to ensure optimal performance Report and document the status at the end of repair activity

Elements and Performance Criteria

Obtain handsets from customer/ relevant teams

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

PC1. Ensure faulty handsets are received from customer facing team

PC2. Obtain/ note fault details as mentioned by the customer facing team and other handset specifications

PC3. Obtain the committed repair timelines (SLAs)

PC4. Prioritize repair activities as per guidelines

Determine change requirement

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

PC5. Undertake fault diagnosis on software components

PC6. Interpret results and isolate fault

PC7. Estimate repair timelines

PC8. Refer the company (handset manufacturer) specific technical database for optimal rectification options

PC9. Check availability of correct software versions/modules

Arrange for related software, tools and spares

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

PC10. Ensure clean, dust free and organized working environment

PC11. Ensure availability of connectors/cables

PC12. Obtain and ensure all tools are available and diagnostic equipment operational

PC13. Obtain software required as per organizational procedures

PC14. Ensure that the software versions are current and ready to use

Undertake repair activities

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

PC15. Carry out necessary software fault rectification (correction/Upgradation, software replacement)

PC16. Ensure rectification of handset fault within the SLAs

PC17. Check handset performance to ascertain fault has been rectified

PC18. Ensure timely escalation of emergency/ unresolved issues according to established procedures

PC19. Ensure all repairs conform to the quality targets

Test effectiveness & close activity

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

PC20. Confirm effectiveness of the repair process, by testing the handset utilizing appropriate software jigs and standard test processes

PC21. Take appropriate action to rectify any deficiencies post testing

PC22. Ensure that fault has been rectified without any consequal damage

PC23. Handover repaired handset to QA team

PC24. Ensure completion of administrative jobs like site clearance, return of test equipments

Safety Requirments (equipment and Self)

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

PC25. Pass through ESD test before entering the facility

PC26. Ensure that protection equipments like anti-static bands, clothes and gloves are appropriately used as required

PC27. Ensure compliance with site risk control, OHS, environmental and quality requirements as per company's norms

PC28. Ensure escalation of safety incidents to relevant authorities as per guidelines

Report and Record

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

PC29. Ensure that handset inventory in hand (for repairs) is tracked and accounted for appropriately

PC30. Ensure record sheets are completed accurately, as per company guidelines

PC31. Ensure all concerned (supervisors, QA team, customer teams) are notified of the completion of repair activity

PC32. Retain documents for specific period of time, as per company procedure

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. Risk and impact of not following defined procedures/work instructions

KU2. Escalation matrix for reporting identified incidents, troubles and/ or emergencies eg system failures ,fire and power failures

KU3. Applicable key performance indicators (kpis) and service level agreements (slas) including production rate and bounce rate (external and internal)

KU4. Types of documentation in organization and importance of the same

KU5. Process for obtaining sign-off post completion of the maintenance activities

KU6. knowledge of spare management and repair & return process for faulty equipments

KU7. She and ohs guidelines and regulations as per companys norms

KU8. Protection equipments (anti-static wrist bands, shoes, dress, packaging, and other appropriate insulations) that are required to be used

KU9. First aid requirements in case of electrical shocks, cuts and other common injuries

KU10. Functionality, features and basic working of handsets kb3 handset specific operating system, their versions and user interface

KU11. Basic computer knowledge to be able to run diagnostic tools

KU12. Functionality of hardware components, software applications, screen, touchpad etc

KU13. Functionality of various software jigs

KU14. Mobile technologies like gsm & cdma

KU15. Default setting of handsets and networks

KU16. Range of handset software related problems and their possible solutions

KU17. Standard fault-finding (troubleshooting) techniques

KU18. Standard software testing techniques

KU19. Standard repairing process

Generic Skills (GS)

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

GS1. Read and understand technical manuals, work orders and reports

GS2. Read and understand organizational health and safety instructions

GS3. Fill up record sheets clearly, concisely and accurately as per company procedures

GS4. Clearly communicate relevant information to supervisors

GS5. Respond appropriately to any queries

GS6. Communicate with customer/customer facing teams to understand handset performance issues

GS7. Communicate in the local language

GS8. Convey proposed solution to the customers

GS9. Prioritize and execute tasks in a high-pressure environment

GS10. Use and maintain resources efficiently and effectively

GS11. Analyse (and understand) customer complaints

GS12. Interpret reports, readings and numerical data

GS13. Keep up to date with new technology

GS14. Create and maintain effective working relationships and team environment through collaboration

GS15. Share knowledge with other team members and colleagues

GS16. Take initiatives and progressively assume increased responsibilities

GS17. Identifying correct software version/modules

GS18. Ascertain correct and complete porting/update of software in the handset

GS19. Execute basic software commands for data transfer

GS20. Data backup prior attempting repairs

GS21. Initialize pc based diagnostic tools

GS22. Interpret diagnostic test results to identify and localize faults

GS23. Connect up handset to pc using connectors/cables

GS24. Undertake corrective repairs by software porting/updates

GS25. Undertake checks to confirm that the problem is resolved

GS26. Utilize appropriate communication channels to escalate unresolved problems

GS27. How to approach a defect

GS28. Make use of standard oem specified troubleshooting steps

GS29. Interpret intermediate results and progress fault rectification accordingly

GS30. Utilize appropriate tools to rectify faults

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Obtain handsets from customer/ relevant teams	**15**	-	-	-
PC1. Ensure faulty handsets are received from customer facing team	3	-	-	-
PC2. Obtain/ note fault details as mentioned by the customer facing team and other handset specifications	4	-	-	-
PC3. Obtain the committed repair timelines (SLAs)	3	-	-	-
PC4. Prioritize repair activities as per guidelines	5	-	-	-
Determine change requirement	**7**	**8**	-	-
PC5. Undertake fault diagnosis on software components	3	2	-	-
PC6. Interpret results and isolate fault	3	2	-	-
PC7. Estimate repair timelines	1	1	-	-
PC8. Refer the company (handset manufacturer) specific technical database for optimal rectification options	-	1	-	-
PC9. Check availability of correct software versions/modules	-	2	-	-
Arrange for related software, tools and spares	**10**	-	-	-
PC10. Ensure clean, dust free and organized working environment	2	-	-	-
PC11. Ensure availability of connectors/cables	2	-	-	-
PC12. Obtain and ensure all tools are available and diagnostic equipment operational	2	-	-	-
PC13. Obtain software required as per organizational procedures	2	-	-	-
PC14. Ensure that the software versions are current and ready to use	2	-	-	-
Undertake repair activities	**3**	**22**	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC15. Carry out necessary software fault rectification (correction/Upgradation, software replacement)	2	9	-	-
PC16. Ensure rectification of handset fault within the SLAs	-	4	-	-
PC17. Check handset performance to ascertain fault has been rectified	1	5	-	-
PC18. Ensure timely escalation of emergency/ unresolved issues according to established procedures	-	2	-	-
PC19. Ensure all repairs conform to the quality targets	-	2	-	-
Test effectiveness & close activity	**3**	**12**	**-**	**-**
PC20. Confirm effectiveness of the repair process, by testing the handset utilizing appropriate software jigs and standard test processes	1	3	-	-
PC21. Take appropriate action to rectify any deficiencies post testing	-	2	-	-
PC22. Ensure that fault has been rectified without any consequal damage	-	2	-	-
PC23. Handover repaired handset to QA team	-	2	-	-
PC24. Ensure completion of administrative jobs like site clearance, return of test equipments	2	3	-	-
Safety Requirments (equipment and Self)	**10**	**-**	**-**	**-**
PC25. Pass through ESD test before entering the facility	4	-	-	-
PC26. Ensure that protection equipments like anti-static bands, clothes and gloves are appropriately used as required	2	-	-	-
PC27. Ensure compliance with site risk control, OHS, environmental and quality requirements as per company's norms	3	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC28. Ensure escalation of safety incidents to relevant authorities as per guidelines	1	-	-	-
Report and Record	**10**	**-**	**-**	**-**
PC29. Ensure that handset inventory in hand (for repairs) is tracked and accounted for appropriately	2	-	-	-
PC30. Ensure record sheets are completed accurately, as per company guidelines	2	-	-	-
PC31. Ensure all concerned (supervisors, QA team, customer teams) are notified of the completion of repair activity	3	-	-	-
PC32. Retain documents for specific period of time, as per company procedure	3	-	-	-
NOS Total	**58**	**42**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N2204
NOS Name	Perform handset repair- software
Sector	Telecom
Sub-Sector	Handset
Occupation	Customer Service
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	26/05/2017
Next Review Date	31/03/2022
NSQC Clearance Date	18/06/2015

TEL/N2205: Perform Tablet Repair Hardware & Software

Description

This unit is about carrying out repair activities related to tablet hardware & software.

Scope

Undertake fault diagnosis Identify hardware components to be repaired/replacedIdentify software components to be formatted/reloaded Perform tablet hardware & software related repair activities Test tablet post repair activity to ensure optimal performance Report and document the status at the end of repair activity

Elements and Performance Criteria

Obtain tablets from customer/relevant teams

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

PC1. Ensure faulty tablets are received from the customer facing team

PC2. Obtain/ note fault details as mentioned by the customer facing team and other tablet specifications.

PC3. Obtain the committed repair timelines (slas)

PC4. Prioritize repair activities as per guidelines

Arrange for tools and spares

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

PC5. Ensure clean, neat, dust free and organized working environment

PC6. Determine hardware components & software required based on fault diagnosis

PC7. Obtain hardware & software required(such as components, os, applications, testing devices and other inventory) as per organizational procedures

PC8. Ensure that tools, equipment and testing devices are in proper working condition and calibrated

PC9. Ensure compliance with lead free soldering techniques

Undertake tablet repair activities

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

PC10. Refer the company (tablet manufacturer) specific technical database to identify root cause of tablet fault and to determine rectification options.

PC11. Isolate the cause of fault by conducting appropriate hardware/software diagnostic test.

PC12. Determine the options to rectify the fault and confirm with supervisors, if required

PC13. Dismantle tablet as per product/manufacturer guidelines

PC14. Ensure rectification of tablet fault within the SLAs

PC15. Ensure timely escalation of emergency/ unresolved issues according to established procedures

PC16. Ensure all repairs conform to the quality targets in terms of bounce and repeat repair percentages, first time fix etc.

Test effectiveness & close activity

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

PC18. Assess test equipment is appropriately calibrated

PC19. Confirm effectiveness of the repair process, by utilizing appropriate test equipment as per standard test processes

PC20. Ensure that fault has been rectified without any collateral damage to tablet

PC21. Handover repaired tablet to appropriate authority

PC22. Ensure completion of administrative jobs like site clearance, return of test equipment

Safety requirements (Equipment & Self)

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

PC23. Pass through ESD test before entering the facility

PC24. Ensure that protection equipment like esd equipment, anti-static bands,clothes and gloves are appropriately used as required

PC25. Ensure compliance with site risk control, ohs, environmental and quality requirements as per company's norms

PC26. Ensure escalation of safety incidents to relevant authorities as per guidelines

Reports and Record

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

PC27. Ensure that tablet inventory in hand for repairs is tracked and accounted for appropriately as per company procedures.

PC28. Ensure all relevant parties (including supervisors, customer teams) are notified of the completion of repair activity

PC29. Ensure record sheets are completed accurately, as per company guidelines

PC30. Retain documents for specific period of time, as per company procedure

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. Risk and impact of not following defined procedures/work instructions

KU2. Escalation matrix for reporting identified incidents, troubles and/ or emergencies e.g. system failures ,fire and power failures

KU3. Applicable key performance indicators (kpis) and service level agreements(slas) including production rate and bounce rate (external and internal)

KU4. Types of documentation in organization and importance of the same

KU5. Process for obtaining sign-off post completion of the maintenance activities.

KU6. Knowledge of spare management and repair & return process for faulty components

KU7. Knowledge of obtaining verified os, patches and application software from correct organizational channel

KU8. She and ohs guidelines and regulations as per companys norms

KU9. Protection equipment (anti-static wrist bands, shoes, dress, packaging, and other appropriate insulations) that are required to be used

KU10. First aid requirements in case of electrical shocks, cuts and other common injuries

KU11. Basic electronics

KU12. Functional differences between computer, laptop, smartphone, tablet, iphone and similar devices

KU13. Functionality of hardware components in a tablet like touchscreen, lcd screen, camera, speakers, pcb etc

KU14. Types and peculiarities of os in tablets.

KU15. Types and peculiarities of tablet user interface

KU16. Basic details and features of windows and android os

KU17. Procedure to dismantle and assemble tablet

KU18. Formatting and installing of os

KU19. Drivers and application installation in tablets

KU20. Range of tools and testing equipment (multi-meter, oscilloscope etc.) available and their functionality

KU21. Esd hazards and their effect on electronic components

KU22. Range of tablet related problems and their possible solutions

KU23. Standard fault-finding (troubleshooting) techniques

Generic Skills (GS)

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

GS1. Read and understand technical manuals, work orders and reports

GS2. Read and understand organizational health and safety instructions

GS3. Clearly communicate relevant information to supervisors

GS4. Respond appropriately to queries

GS5. Communicate with customer/customer facing teams to understand tablet

GS6. Performance issues

GS7. Communicate in the local language

GS8. Convey proposed solution to the customers

GS9. Prioritize and execute tasks in a high-pressure environment.

GS10. Use and maintain resources efficiently and effectively

GS11. Analyze (and understand) customer complaints.

GS12. interpret reports, readings and numerical data

GS13. Keep up to date with new technology and performance issues

GS14. Create and maintain effective working relationships and team environment through collaboration

GS15. Take initiatives and progressively assume increased responsibilities

GS16. Share knowledge with other team members and colleagues

GS17. Use and access all handset features and applications

GS18. Take data backup

GS19. Operate tablet testing equipment including test jigs, oscilloscope etc.

GS20. Connect tablet pcb to pc/test equipment for diagnostics

GS21. Initialize pc based diagnostic tools

GS22. Undertake fault diagnostic.

GS23. Identify os and application versions

GS24. Interpret test results to identify and localize faults

GS25. Utilize appropriate mechanisms and tools to rectify the faults.

GS26. Execute basic software commands for data transfer, updates

GS27. Utilize appropriate communication channels to escalate unresolved problems

GS28. test tablet to confirm resolve of the reported fault

GS29. Safely dismantle/assemble tablet using the right tools

GS30. Safely connect the table to pc for software transfer and diagnostic

GS31. Safely remove/replace components using right tools

GS32. Compliance to esd protection measures

GS33. How to approach a defect

GS34. Make use of standard oem specified troubleshooting steps

GS35. Interpret intermediate results and progress fault rectification accordingly

GS36. Utilize appropriate tools to rectify faults

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Obtain tablets from customer/relevant teams	**5**	**5**	**-**	**-**
PC1. Ensure faulty tablets are received from the customer facing team	1	2	-	-
PC2. Obtain/ note fault details as mentioned by the customer facing team and other tablet specifications.	1	2	-	-
PC3. Obtain the committed repair timelines (slas)	2	1	-	-
PC4. Prioritize repair activities as per guidelines	1	-	-	-
Arrange for tools and spares	**5**	**5**	**-**	**-**
PC5. Ensure clean, neat, dust free and organized working environment	1	1	-	-
PC6. Determine hardware components & software required based on fault diagnosis	1	1	-	-
PC7. Obtain hardware & software required(such as components, os, applications, testing devices and other inventory) as per organizational procedures	1	1	-	-
PC8. Ensure that tools, equipment and testing devices are in proper working condition and calibrated	1	1	-	-
PC9. Ensure compliance with lead free soldering techniques	1	1	-	-
Undertake tablet repair activities	**15**	**10**	**-**	**-**
PC10. Refer the company (tablet manufacturer) specific technical database to identify root cause of tablet fault and to determine rectification options.	1	3	-	-
PC11. Isolate the cause of fault by conducting appropriate hardware/software diagnostic test.	2	1	-	-
PC12. Determine the options to rectify the fault and confirm with supervisors, if required	2	1	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. Dismantle tablet as per product/manufacturer guidelines	3	1	-	-
PC14. Ensure rectification of tablet fault within the SLAs	2	2	-	-
PC15. Ensure timely escalation of emergency/ unresolved issues according to established procedures	3	1	-	-
PC16. Ensure all repairs conform to the quality targets in terms of bounce and repeat repair percentages, first time fix etc.	2	1	-	-
Test effectiveness & close activity	**10**	**15**	**-**	**-**
PC18. Assess test equipment is appropriately calibrated	2	3	-	-
PC19. Confirm effectiveness of the repair process, by utilizing appropriate test equipment as per standard test processes	2	3	-	-
PC20. Ensure that fault has been rectified without any collateral damage to tablet	2	3	-	-
PC21. Handover repaired tablet to appropriate authority	2	3	-	-
PC22. Ensure completion of administrative jobs like site clearance, return of test equipment	2	3	-	-
Safety requirements (Equipment & Self)	**5**	**10**	**-**	**-**
PC23. Pass through ESD test before entering the facility	1	3	-	-
PC24. Ensure that protection equipment like esd equipment, anti-static bands,clothes and gloves are appropriately used as required	1	2	-	-
PC25. Ensure compliance with site risk control, ohs, environmental and quality requirements as per company's norms	1	2	-	-
PC26. Ensure escalation of safety incidents to relevant authorities as per guidelines	2	3	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Reports and Record	**10**	**5**	**-**	**-**
PC27. Ensure that tablet inventory in hand for repairs is tracked and accounted for appropriately as per company procedures.	3	2	-	-
PC28. Ensure all relevant parties (including supervisors, customer teams) are notified of the completion of repair activity	2	1	-	-
PC29. Ensure record sheets are completed accurately, as per company guidelines	3	1	-	-
PC30. Retain documents for specific period of time, as per company procedure	2	1	-	-
NOS Total	**50**	**50**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N2205
NOS Name	Perform Tablet Repair Hardware & Software
Sector	Telecom
Sub-Sector	Handset
Occupation	Customer Service
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	26/05/2017
Next Review Date	31/03/2022
NSQC Clearance Date	18/06/2015

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 : 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/N2203.Perform handset repair- hardware	50	50	-	-	100	33
TEL/N2204.Perform handset repair- software	58	42	-	-	100	33
TEL/N2205.Perform Tablet Repair Hardware & Software	50	50	-	-	100	34
Total	**158**	**142**	**-**	**-**	**300**	**100**

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training
ESD	Electro Static Discharge
KPI	Key Performance Indicator
OHS	Organizational Health and Safety
RAM	Random Access Memory
SHE	Safety Health and Environment
SLA	Service Level Agreement

Glossary

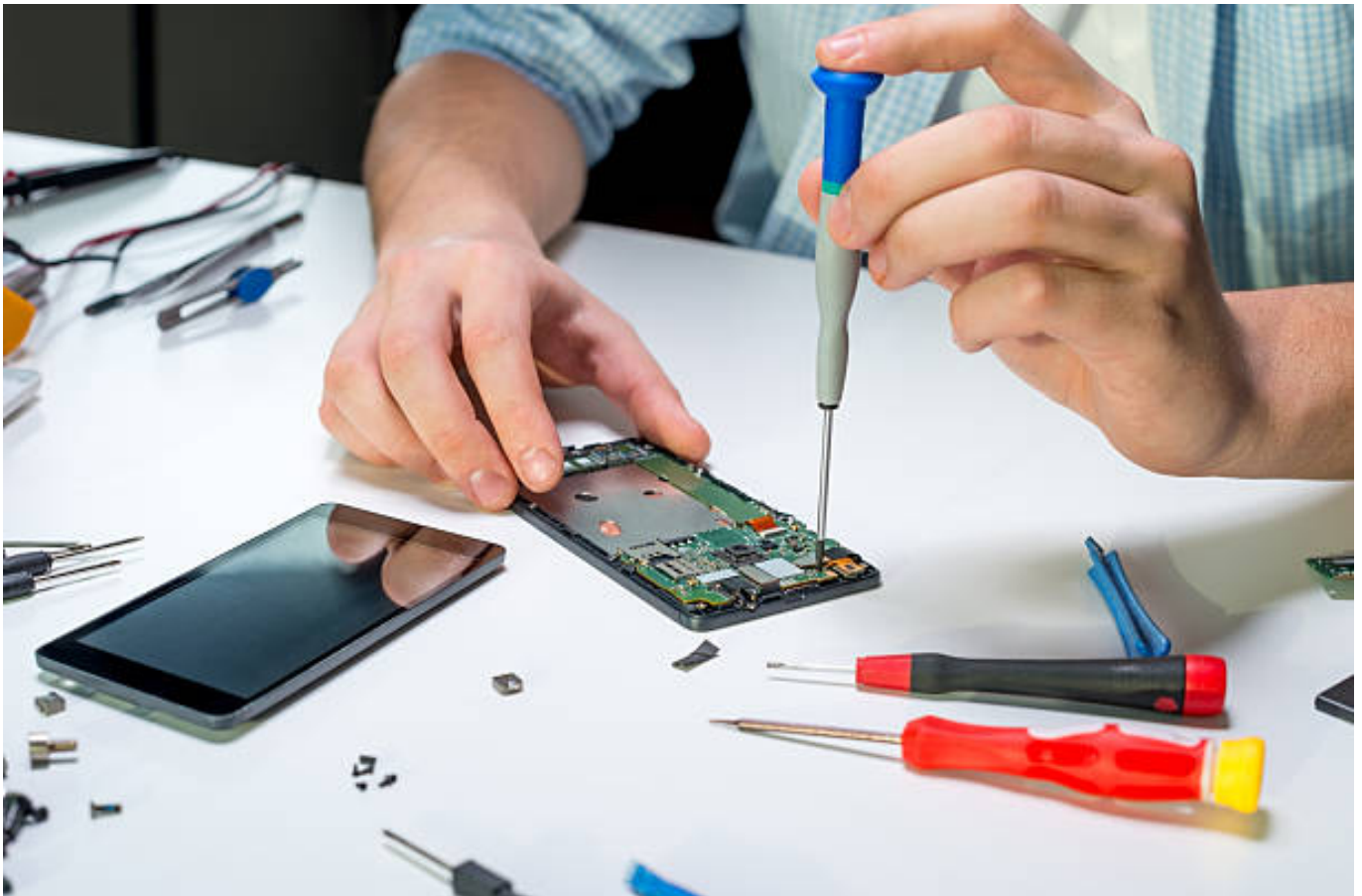|	
Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the 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.
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
DOA (Dead on arrival)	In the unlikely event the customer receives a DOA (Dead On Arrival) phone; they must submit the handset at the outlet it has been purchased from. Within a given time of receipt of phone for exchange, the customer would be given a replacement unit for one of the like quality and/or value, with no additional charge
Escalation matrix	The channel for escalating the issue/problem of the customer to a supervisor or senior who possesses more expertise in handling and resolving customer's concern
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

Helpdesk	A single desk to reach out for the customer for getting response to his queries, requests or complaints. A help desk is manned by specialists who are well versed with their organization and itâ€™s products and services
Intra net tools	Internal tools/applications of an organization that work only within the network of the organization
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organization.
Job sheet	A page of instruction to aid a worker in performing a task
Knowledge and Understanding	Knowledge and Understanding are statements which together specify the technical, generic, professional and organizational specific knowledge
NOS (National Occupational Standards)	NOS are Occupational Standards which apply uniquely in the Indian context
Occupation	Occupation is a set of job roles under which role-holders perform similar/related set of functions in an industry
OS (Occupational Standards)	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
OS (Operating System)	An operating system (OS) is a collection of software that manages hardware resources and provides common services for devices. It controls all basic operations of smart phones. The OS allows the user to install and execute 3rd party applications usually adding new functionalities to the devices
Performance Criteria	Performance Criteria are statements that together specify the standard of performance required when carrying out a task
QP (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
Qualifications Pack Code	Qualifications Pack Code is a unique reference code that identifies a qualifications pack.
'Repair	Is a condition where customer''s handset is damaged and needs refurbishing. The handset is taken by the customer to the repair centre for refurbishing'

Replacement	Is also known as handset swap. When the handset unit or accessories are damaged and fulfilling certain condition
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 has a critical impact on the quality of performance required
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
Shop/Showroom/Outlet	Is a retail store of a company/franchisee in which products are on sale, in a space created by the brand or company
SLA (Service level agreement)	An agreement or contract for the level of service to be provided
Specialists	Subject matter experts having domain experience, knowledge and expertise and can handle customer queries, requests and complaints
Sub-functions	Sub-functions are sub-activities essential to fulfill the achieving the objectives of the function
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components
TAT (Turn around time)	The time taken to resolve a request or a complaint of the customer
Telecom	Is a communication sector consisting of companies who provide telephonic communication facilities to the public
Unit Code	Unit Code is a unique identifier for an OS unit, which can be denoted with either an â€˜Oâ€™ or an â€˜Nâ€™
Unit Title	Unit Title gives a clear overall statement about what the incumbent should be able to do
Up selling	A sales strategy where the seller provide opportunities to purchase related products or services, often for the sole purpose of making a larger sale
Vertical	Vertical may exist within a sub-sector representing different domain areas or the client industries served by the industry
Warranty	A written guarantee, issued to the purchaser of an article by its manufacturer, promising to repair or replace it if necessary within a specified period of time

Handheld Devices (Handset & Tablet) Technician

QP Code: TEL/Q2201

Version: 2.0

NSQF Level: 4

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

Contents

TEL/Q2201: Handheld Devices (Handset & Tablet) Technician

Brief Job Description

The individual in this job is responsible for repairing handsets for various hardware and software issues under supervision of a senior. The individual is responsible for helping seniors in testing the handset for adequacy post repair/service.

Personal Attributes

The individual in this job should have analytical skills, basic written and oral communication skills.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. TEL/N2213: Repair and test handsets

2. TEL/N2214: Repair and test tablets

3. ELE/N4631: Carry out chip-level repair of mobile phone

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

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

Qualification Pack (QP) Parameters

Sector	Telecom
Sub-Sector	Handset
Occupation	Customer Service - Handset Segment
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7422.0203

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	
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	30/12/2021
Next Review Date	30/12/2025
NSQC Approval Date	30/12/2021
Version	2.0
Reference code on NQR	2021/TEL/TSSC/04901
NQR Version	1.0

TEL/N2213: Repair and test handsets

Description

This OS unit is about assisting superiors in carrying out repair activities related to handheld devices - hardware and software.

Scope

The scope covers the following :

- Diagnose and categorise faults (hardware or software)
- Prepare for repairing of handset
- Repair the handset and test its functionality
- Perform post-repair activities

Elements and Performance Criteria

Diagnose and categorise faults (hardware or software)

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

PC1. collect the faulty handheld devices from the customer care executives or front-end executives

PC2. assist the supervisor in analysing the requirements, issues and functionality problems reported by the customer/front-end team

PC3. identify the timelines and repair commitments based on the directions received from supervisor and as specified in the Service Level Agreement (SLA)

PC4. plan and prioritize activities related to delivery timeline and issues under supervision

PC5. diagnose the fault as listed in the company specific database under supervision and check if it is a hardware or software related issue

PC6. assist the supervisor in identifying the root cause of the fault to determine if any part requires replacement

PC7. identify the cause of fault by conducting appropriate diagnostic tests

PC8. check if the part or component required for repair is available at the store or needs to be ordered from the regional service centre

PC9. list all options for rectifying the fault under supervisor's guidance

Prepare for repairing of handset

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

PC10. collect the parts to be replaced/repaired from the store/inventory keeper

PC11. collect all tools and equipment required for repair/replacement of parts

PC12. inspect the repair table and area to check if its clean and dust free

PC13. check if all equipment required for repair and testing are calibrated as per the specified environment parameters detailed by the handset manufacturer

PC14. check if lead-free soldering tools are available and ready for use

PC15. verify that all Electro Static Discharge (ESD) precautions are considered before starting repair

PC16. backup all user data using authorized mechanism and medium

Repair the handset and test its functionality

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

PC17. dismantle handset and remove the components/parts under supervision and as per organizational guidelines/procedures

PC18. assist the supervisor in repairing the handset using authorized tools and equipment

PC19. replace components and parts w.r.t manufacturer specifications as per the instructions received by supervisor

PC20. verify that all parts of the handset are inserted properly and are contained within the body

PC21. assemble the handset properly under supervision of superior using appropriate tools and appropriate procedure

PC22. document the package details about case parts/components that are replaced and hold warranty

PC23. escalate any emergency situation/unresolved issues to the supervisor

PC24. assist supervisors in checking that the repairs conform to the quality targets in terms of bounce and repeat repair percentages, first time fix etc.

PC25. perform necessary software fault rectification such as correction/upgradation, software replacement etc. under supervision

PC26. test the effectiveness of the repair based on the directions received by supervisor and by using appropriate testing equipment

Perform post-repair activities

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

PC27. check that the fault has been rectified without any collateral damage to the handset

PC28. send the repaired handset to the authorized personnel

PC29. return all tools and equipment to the store in clean and working condition

PC30. clean the repair bench/table to ensure no loose screws/parts are lying around

PC31. send the replaced defective part to the authorized personnel

PC32. document the repairs and replacement work for the handset along with time, date, handset specifications, complaint number etc.

PC33. inform all relevant personnel (including supervisors, front-end teams) about the completion of the repair activity

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. various flashing tools such as Samsung, MediaTek, Qualcomm etc. for various types of Smartphones including i-Phones

KU2. types of IMEI repairing tools

KU3. Real Time Transmission (RT TX)Cable, EDL Cable etc. for flashing

KU4. usage of UMT dongle for flashing

KU5. uninstalling applications that is not compatible or creating issues in the mobile phone

KU6. installing licensed and authorised software's to resolve issues and suiting the customer's requirement

KU7. replacing or repairing the faulty modules/components

KU8. cost of repair and verify if it is within Beyond Economic Repair (BER)

KU9. usage of instruments such as a multi-meter to identify and repair faults in Charging Section, Light Section, SIM Section, MMC Section, Touchpad section, Digital SMD Mic Section, Camera Section, Headphone section, Ringer/Speaker/Mic/Vibrator section and keypad section

KU10. display related issues, usage of OCA Lamination Machine to replace polarizer film, removing broken glass, replacing blank/white LCD, replacing broken glass edge/curved display and usage of bubble remover

KU11. various troubleshooting devices such as F Finder Dongle, ZWX Dongle etc.

KU12. testing the functioning of hardware after repairing

KU13. how to ensure that no damage is caused to the device while removal and fixing of components

KU14. how to ensure that other components are not damaged while using hot air gun for removal of a component which could cause damage

KU15. how to ensure that adequate soldering for fixing the component is done and no further rework is required

KU16. how to receive spare module / component from stores, make sure to keep necessary parts in stock

KU17. formation of Current AC/DC

KU18. Diode-Function, Symbol, Denoting letter, Identification of Solid and SMD Type Diode

KU19. Transistor-Basics, Types, Symbol, Denoting Letter, PNP and NPN.

KU20. EMMC chip off, Reballing and Soldering Concept, CPU based Smartphone Flashing and Smartphone IMEI Repair Tools, CRU based Smartphone FRP

KU21. flashing handsets online /offline, use of Miracle Box, Z3X Box for Samsung and setting up of Creak Box to spot process disruptions and delay

Generic Skills (GS)

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

GS1. communicate respectfully with customer/customer facing teams

GS2. read and understand documents and reports

GS3. speak and understand English/regional language

GS4. read and write in English or any regional language

GS5. manage time efficiently

GS6. listen carefully and respond appropriately

GS7. work systematically with attention to detail

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Diagnose and categorise faults (hardware or software)	**14**	**10**	**-**	**3**
PC1. collect the faulty handheld devices from the customer care executives or front-end executives	2	-	-	-
PC2. assist the supervisor in analysing the requirements, issues and functionality problems reported by the customer/front-end team	2	-	-	-
PC3. identify the timelines and repair commitments based on the directions received from supervisor and as specified in the Service Level Agreement (SLA)	2	-	-	-
PC4. plan and prioritize activities related to delivery timeline and issues under supervision	2	-	-	-
PC5. diagnose the fault as listed in the company specific database under supervision and check if it is a hardware or software related issue	2	6	-	1
PC6. assist the supervisor in identifying the root cause of the fault to determine if any part requires replacement	-	-	-	1
PC7. identify the cause of fault by conducting appropriate diagnostic tests	2	-	-	-
PC8. check if the part or component required for repair is available at the store or needs to be ordered from the regional service centre	-	4	-	-
PC9. list all options for rectifying the fault under supervisor's guidance	2	-	-	1
Prepare for repairing of handset	**7**	**8**	**-**	**2**
PC10. collect the parts to be replaced/repaired from the store/inventory keeper	-	2	-	-
PC11. collect all tools and equipment required for repair/replacement of parts	-	2	-	-
PC12. inspect the repair table and area to check if its clean and dust free	2	-	-	1

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. check if all equipment required for repair and testing are calibrated as per the specified environment parameters detailed by the handset manufacturer	2	-	-	1
PC14. check if lead-free soldering tools are available and ready for use	2	-	-	-
PC15. verify that all Electro Static Discharge (ESD) precautions are considered before starting repair	1	-	-	-
PC16. backup all user data using authorized mechanism and medium	-	4	-	-
Repair the handset and test its functionality	**6**	**26**	**-**	**7**
PC17. dismantle handset and remove the components/parts under supervision and as per organizational guidelines/procedures	-	4	-	-
PC18. assist the supervisor in repairing the handset using authorized tools and equipment	-	4	-	1
PC19. replace components and parts w.r.t manufacturer specifications as per the instructions received by supervisor	-	4	-	1
PC20. verify that all parts of the handset are inserted properly and are contained within the body	2	-	-	-
PC21. assemble the handset properly under supervision of superior using appropriate tools and appropriate procedure	-	4	-	-
PC22. document the package details about case parts/components that are replaced and hold warranty	1	-	-	-
PC23. escalate any emergency situation/unresolved issues to the supervisor	1	-	-	-
PC24. assist supervisors in checking that the repairs conform to the quality targets in terms of bounce and repeat repair percentages, first time fix etc.	-	4	-	1
PC25. perform necessary software fault rectification such as correction/upgradation, software replacement etc. under supervision	-	4	-	2

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC26. test the effectiveness of the repair based on the directions received by supervisor and by using appropriate testing equipment	2	2	-	2
Perform post-repair activities	**8**	**6**	**-**	**3**
PC27. check that the fault has been rectified without any collateral damage to the handset	1	2	-	1
PC28. send the repaired handset to the authorized personnel	1	1	-	-
PC29. return all tools and equipment to the store in clean and working condition	1	1	-	-
PC30. clean the repair bench/table to ensure no loose screws/parts are lying around	1	-	-	1
PC31. send the replaced defective part to the authorized personnel	2	1	-	-
PC32. document the repairs and replacement work for the handset along with time, date, handset specifications, complaint number etc.	1	-	-	-
PC33. inform all relevant personnel (including supervisors, front-end teams) about the completion of the repair activity	1	1	-	1
NOS Total	**35**	**50**	**-**	**15**

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N2213
NOS Name	Repair and test handsets
Sector	Telecom
Sub-Sector	Handset
Occupation	Customer Service - Handset Segment
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	30/12/2021
Next Review Date	30/12/2025
NSQC Clearance Date	30/12/2021

TEL/N2214: Repair and test tablets

Description

This OS unit is about carrying out repair activities related to tablets hardware and software.

Scope

The scope covers the following :

- Perform pre-repair activities
- Repair the tablet and test its functionality
- Perform post-repair activities

Elements and Performance Criteria

Perform pre-repair activities

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

PC1. collect the faulty tablets from the customer care executives or front-end executives

PC2. record the faults listed by the customer

PC3. collect the repair details such as delivery time and any other special requests from the customer

PC4. diagnose the fault as listed in the company specific database and check if it is a hardware or software related issue

PC5. check if the part/component required for repair is available at the store or needs to be ordered from the regional service centre

PC6. list all options to rectify the fault and confirm with supervisors, if required

PC7. collect the replacement or repair parts from the store/inventory keeper

PC8. collect all tools and equipment required for repair/replacement of parts

PC9. inspect the repair table and area to check if it is clean and dust-free

PC10. check if all equipment required for repair and testing are calibrated and as per the specified environment parameters detailed by the tablet manufacturer

PC11. check if lead-free soldering tools are available and ready for use

PC12. check all Electrostatic discharge precautions are considered before starting repair

Repair the tablet and test its functionality

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

PC13. backup all user data using authorized mechanism and medium

PC14. dismantle tablet and remove the components/parts as per organizational guidelines/procedures and following the manufacturer specifications

PC15. assist the senior in repairing of tablet using authorized tools and equipment

PC16. replace components and parts under the supervisor of senior and as per manufacturer specifications

PC17. check that all parts of the tablet are inserted properly and are contained within the body

PC18. Assemble tablet properly as per the directions received from senior by using appropriate tools and appropriate procedure

PC19. escalate any issue or emergency situation/unresolved issues to the supervisor

PC20. perform necessary software fault rectification such as correction/upgradation, software replacement, etc. under senior supervision

PC21. use Block Diagram/Manual Schematics for Service Manual, Disassembly and Reassembly, Exploded view, Product specification and Troubleshooting

PC22. perform chip level repair—reballing function by dismantling, heating the chip to be removed from the board, remove the solder remains, put new solder balls, place the chip and solder them

Perform post-repair activities

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

PC23. assist in testing the effectiveness of the repair by utilizing appropriate testing equipment

PC24. ensure that the tablet was not damaged in any way during repair

PC25. send the repaired tablet to the authorized personnel

PC26. return all tools and equipment to the store in clean and working condition

PC27. clean the repair bench/table to ensure no loose screws/parts are lying around

PC28. send the replaced defective part to the authorized personnel

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. all common brand of tablets, their functions, features and applications

KU2. functionality of hardware components in a tablet like chipsets, processor, screen, touchpad etc.

KU3. standard fault-finding (troubleshooting) techniques

KU4. tablet related problems and their possible solutions

KU5. operating system and user interface of popular tablets

KU6. procedure of dismantling and assembling the tablet and its components

KU7. software version/modules and basic software commands for data

KU8. interpret test results to identify and localize faults and fixing them

Generic Skills (GS)

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

GS1. communicate respectfully with customer/customer facing teams

GS2. read and understand documents and reports

GS3. speak and understand English/regional language

GS4. work eystematically with attention to detail

GS5. basic reading and writing skills

GS6. manage time efficiently

GS7. listen carefully and respond appropriately

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Perform pre-repair activities	**15**	**27**	**-**	**3**
PC1. collect the faulty tablets from the customer care executives or front-end executives	1	1	-	-
PC2. record the faults listed by the customer	1	1	-	-
PC3. collect the repair details such as delivery time and any other special requests from the customer	1	1	-	-
PC4. diagnose the fault as listed in the company specific database and check if it is a hardware or software related issue	2	4	-	-
PC5. check if the part/component required for repair is available at the store or needs to be ordered from the regional service centre	2	4	-	1
PC6. list all options to rectify the fault and confirm with supervisors, if required	1	1	-	1
PC7. collect the replacement or repair parts from the store/inventory keeper	1	1	-	-
PC8. collect all tools and equipment required for repair/replacement of parts	1	3	-	-
PC9. inspect the repair table and area to check if it is clean and dust-free	2	2	-	1
PC10. check if all equipment required for repair and testing are calibrated and as per the specified environment parameters detailed by the tablet manufacturer	-	4	-	-
PC11. check if lead-free soldering tools are available and ready for use	2	4	-	-
PC12. check all Electrostatic discharge precautions are considered before starting repair	1	1	-	-
Repair the tablet and test its functionality	**10**	**22**	**-**	**2**
PC13. backup all user data using authorized mechanism and medium	2	2	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. dismantle tablet and remove the components/parts as per organizational guidelines/procedures and following the manufacturer specifications	2	4	-	-
PC15. assist the senior in repairing of tablet using authorized tools and equipment	1	4	-	-
PC16. replace components and parts under the supervisor of senior and as per manufacturer specifications	-	4	-	-
PC17. check that all parts of the tablet are inserted properly and are contained within the body	2	-	-	1
PC18. Assemble tablet properly as per the directions received from senior by using appropriate tools and appropriate procedure	-	2	-	1
PC19. escalate any issue or emergency situation/unresolved issues to the supervisor	1	-	-	-
PC20. perform necessary software fault rectification such as correction/upgradation, software replacement, etc. under senior supervision	2	2	-	-
PC21. use Block Diagram/Manual Schematics for Service Manual, Disassembly and Reassembly, Exploded view, Product specification and Troubleshooting	-	2	-	-
PC22. perform chip level repair—reballing function by dismantling, heating the chip to be removed from the board, remove the solder remains, put new solder balls, place the chip and solder them	-	2	-	-
Perform post-repair activities	**10**	**6**	**-**	**5**
PC23. assist in testing the effectiveness of the repair by utilizing appropriate testing equipment	2	4	-	-
PC24. ensure that the tablet was not damaged in any way during repair	1	2	-	-
PC25. send the repaired tablet to the authorized personnel	1	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC26. return all tools and equipment to the store in clean and working condition	2	-	-	1
PC27. clean the repair bench/table to ensure no loose screws/parts are lying around	2	-	-	2
PC28. send the replaced defective part to the authorized personnel	2	-	-	2
NOS Total	**35**	**55**	**-**	**10**

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N2214
NOS Name	Repair and test tablets
Sector	Telecom
Sub-Sector	Handset
Occupation	Customer Service - Handset Segment
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	30/12/2021
Next Review Date	30/12/2025
NSQC Clearance Date	30/12/2021

ELE/N4631: Carry out chip-level repair of mobile phone

Description

This OS unit is about carrying out the repair of chip-based mobile phones.

Scope

The scope covers the following :

- Analyse the status of mobile phone and estimate the repair cost
- Perform chip-level repairs
- Prepare necessary documentation
- Achieve the quality and productivity standards

Elements and Performance Criteria

Analyse the status of mobile phone and estimate the repair cost

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

PC1. determine the chip-level issue with the mobile phone by examining various sections of the mobile phone such as charging, MMC, touchpad, camera, using the appropriate tools and equipment such as the multimeter, Surface Mounting Device (SMD) tester, F-Finder Tool, etc.

PC2. estimate the repair cost, ensuring it is within the Beyond Economic Repair (BER) cost and inform the customer about the type of chip-level repair/ replacement required in the mobile phone

Perform chip-level repairs

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

PC3. open the outer panel and inner casing of the mobile phone using the manufacturer-approved tools and equipment

PC4. identify and release the connectors to remove the motherboard from the device

PC5. remove the LCD screen from the panel using the appropriate tools and equipment such as a hot air gun

PC6. follow the manufacturer-approved block diagram/ manual schematics/ exploded view chart while disassembling the mobile phone

PC7. determine the level of module repair required in the mobile phone

PC8. ensure the availability of new module(s) to install in the place of the faulty module(s)

PC9. preheat the PCB and remove the module using a hot air-gun

PC10. place the new module on the board at the specified location using chip-level technology and relevant tools

PC11. solder the module following the chip-level technology, ensuring it is secured in its place

PC12. remove the solder remains from the PCB

PC13. use the OCA lamination machine to replace polarizer film, remove broken glass, replace blank/white LCD, replace broken glass edge / curved display

PC14. use the bubble remover to remove any bubbles formed on the screen and calibrate the touchscreen if required

PC15. co-ordinate with a senior engineer/ technician for complex repair needs

PC16. perform the recommended quality checks of the repaired or replaced module to ensure the issue has been fixed

Prepare necessary documentation

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

PC17. prepare the required documents and report the work progress to the supervisor

PC18. document the work completed in the physical registers and/ or the company's Enterprise Resource Planning (ERP) software for tracking and future references

Achieve the quality and productivity standards

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

PC19. carry out repair of the mobile phone within the agreed time

PC20. use the compatible and manufacturer-approved tools, equipment and spare parts for mobile repair

PC21. ensure minimum wastage of materials and resources

PC22. follow the recommended practices to ensure no damage happens to the mobile phone during the repair process

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. company's warranty policy for different products

KU2. company's line of business and product portfolio

KU3. applicable documentation requirements

KU4. company's policy on repair and Turn-around Time (TAT), etc.

KU5. the denoting letter, colour coding, symbol and functions of the solid type and Surface Mounted Device (SMD) resistors

KU6. how to use a multimeter and read its values

KU7. the symbol, types, identification and functions of SMD tester

KU8. how to test a capacitor using a multimeter and SMD tester

KU9. the symbol, types, properties, identification and functions of electromagnetic coils

KU10. the denoting letter, symbol and functions of solid and SMD type diodes

KU11. the difference between and functions of Positive-Negative-Positive (PNP) and Negative-Positive-Negative (NPN) transistors

KU12. different types of Metal Oxide Semiconductor Field-effect Transistor (MOSFET) such as 3 leg MOSFET and 8 Leg MOSFET and the identification of N-Channel and P-Channels

KU13. the concept of Quartz, clock and pulse and measuring unit

KU14. the process of conducting a Quartz crystal test

KU15. diagnostic or power on tests for different types of Original Equipment Manufacturer (OEM) components

KU16. features and operations of different models of chip-based mobile phones

KU17. different types of mobile OS and applications, and the issues experienced with them

KU18. the importance of using licensed/ approved OS and applications on mobile phones

KU19. the repair of a variety of chip-based mobile phone modules

KU20. applicable documentation required for spare movement

KU21. frequently encountered software and hardware problems in a chip-based phone and how to fix them

KU22. how to interpret and follow the service and repair manual for a variety of chip-based mobile phones

KU23. problem-solving techniques such as Plan-Do-Check-Act (PDCA) cycle, Root Cause Analysis (RCA), etc.

KU24. the importance of honouring the TAT given to the customer

Generic Skills (GS)

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

GS1. plan and schedule daily activities to achieve work efficiency

GS2. communicate professionally and politely

GS3. identify possible disruptions to work and take preventive measures

GS4. write work-related notes and reports

GS5. stay updated about new developments in the field of work

GS6. take quick action to deal with any emergencies/ accidents

GS7. listen attentively to comprehend the information being given by the speaker

GS8. evaluate all possible solutions to a problem to select the best solution

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Analyse the status of mobile phone and estimate the repair cost	**6**	**8**	**-**	**2**
PC1. determine the chip-level issue with the mobile phone by examining various sections of the mobile phone such as charging, MMC, touchpad, camera, using the appropriate tools and equipment such as the multimeter, Surface Mounting Device (SMD) tester, F-Finder Tool, etc.	4	5	-	-
PC2. estimate the repair cost, ensuring it is within the Beyond Economic Repair (BER) cost and inform the customer about the type of chip-level repair/ replacement required in the mobile phone	2	3	-	2
Perform chip-level repairs	**20**	**25**	**-**	**6**
PC3. open the outer panel and inner casing of the mobile phone using the manufacturer- approved tools and equipment	2	3	-	2
PC4. identify and release the connectors to remove the motherboard from the device	1	2	-	-
PC5. remove the LCD screen from the panel using the appropriate tools and equipment such as a hot air gun	2	3	-	-
PC6. follow the manufacturer-approved block diagram/ manual schematics/ exploded view chart while disassembling the mobile phone	1	1	-	-
PC7. determine the level of module repair required in the mobile phone	1	1	-	-
PC8. ensure the availability of new module(s) to install in the place of the faulty module(s)	2	1	-	-
PC9. preheat the PCB and remove the module using a hot air-gun	1	3	-	1
PC10. place the new module on the board at the specified location using chip-level technology and relevant tools	2	3	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. solder the module following the chip-level technology, ensuring it is secured in its place	3	3	-	1
PC12. remove the solder remains from the PCB	-	2	-	1
PC13. use the OCA lamination machine to replace polarizer film, remove broken glass, replace blank/white LCD, replace broken glass edge / curved display	2	1	-	1
PC14. use the bubble remover to remove any bubbles formed on the screen and calibrate the touchscreen if required	2	1	-	-
PC15. co-ordinate with a senior engineer/ technician for complex repair needs	1	-	-	-
PC16. perform the recommended quality checks of the repaired or replaced module to ensure the issue has been fixed	-	1	-	-
Prepare necessary documentation	**6**	**7**	**-**	**-**
PC17. prepare the required documents and report the work progress to the supervisor	3	3	-	-
PC18. document the work completed in the physical registers and/ or the company's Enterprise Resource Planning (ERP) software for tracking and future references	3	4	-	-
Achieve the quality and productivity standards	**8**	**10**	**-**	**2**
PC19. carry out repair of the mobile phone within the agreed time	2	4	-	1
PC20. use the compatible and manufacturer-approved tools, equipment and spare parts for mobile repair	3	2	-	-
PC21. ensure minimum wastage of materials and resources	2	4	-	1
PC22. follow the recommended practices to ensure no damage happens to the mobile phone during the repair process	1	-	-	-
NOS Total	**40**	**50**	**-**	**10**

National Occupational Standards (NOS) Parameters

NOS Code	ELE/N4631
NOS Name	Carry out chip-level repair of mobile phone
Sector	Electronics
Sub-Sector	Consumer Electronics & IT Hardware
Occupation	After Sales Support
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	30/12/2021
Next Review Date	30/12/2025
NSQC Clearance Date	30/12/2021

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

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	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	31/03/2022
Next Review Date	31/03/2026
NSQC Clearance Date	31/03/2022

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	TBD
Version	1.0
Last Reviewed Date	31/03/2022
Next Review Date	31/03/2026
NSQC Clearance Date	31/03/2022

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 : 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/N2213.Repair and test handsets	35	50	0	15	100	20
TEL/N2214.Repair and test tablets	35	55	0	10	100	20
ELE/N4631.Carry out chip-level repair of mobile phone	40	50	-	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	**165**	**280**	**-**	**55**	**500**	**100**

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training
ESD	Electro Static Discharge
KPI	Key Performance Indicator
OHS	Organizational Health and Safety
RAM	Random Access Memory
SHE	Safety Health and Environment
SLA	Service Level Agreement

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.
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
DOA (Dead on arrival)	In the unlikely event the customer receives a DOA (Dead On Arrival) phone; they must submit the handset at the outlet it has been purchased from. Within a given time of receipt of phone for exchange, the customer would be given a replacement unit for one of the like quality and/or value, with no additional charge
Escalation matrix	The channel for escalating the issue/problem of the customer to a supervisor or senior who possesses more expertise in handling and resolving customer's concern
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

Helpdesk	A single desk to reach out for the customer for getting response to his queries, requests or complaints. A help desk is manned by specialists who are well versed with their organization and itâ€™s products and services
Intra net tools	Internal tools/applications of an organization that work only within the network of the organization
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organization.
Job sheet	A page of instruction to aid a worker in performing a task
Knowledge and Understanding	Knowledge and Understanding are statements which together specify the technical, generic, professional and organizational specific knowledge
NOS (National Occupational Standards)	NOS are Occupational Standards which apply uniquely in the Indian context
Occupation	Occupation is a set of job roles under which role-holders perform similar/related set of functions in an industry
OS (Occupational Standards)	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
OS (Operating System)	An operating system (OS) is a collection of software that manages hardware resources and provides common services for devices. It controls all basic operations of smart phones. The OS allows the user to install and execute 3rd party applications usually adding new functionalities to the devices
Performance Criteria	Performance Criteria are statements that together specify the standard of performance required when carrying out a task
QP (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
Qualifications Pack Code	Qualifications Pack Code is a unique reference code that identifies a qualifications pack.
'Repair	Is a condition where customer''s handset is damaged and needs refurbishing. The handset is taken by the customer to the repair centre for refurbishing'

Replacement	Is also known as handset swap. When the handset unit or accessories are damaged and fulfilling certain condition
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 has a critical impact on the quality of performance required
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
Shop/Showroom/Outlet	Is a retail store of a company/franchisee in which products are on sale, in a space created by the brand or company
SLA (Service level agreement)	An agreement or contract for the level of service to be provided
Specialists	Subject matter experts having domain experience, knowledge and expertise and can handle customer queries, requests and complaints
Sub-functions	Sub-functions are sub-activities essential to fulfill the achieving the objectives of the function
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components
TAT (Turn around time)	The time taken to resolve a request or a complaint of the customer
Telecom	Is a communication sector consisting of companies who provide telephonic communication facilities to the public
Unit Code	Unit Code is a unique identifier for an OS unit, which can be denoted with either an â€˜Oâ€™ or an â€˜Nâ€™
Unit Title	Unit Title gives a clear overall statement about what the incumbent should be able to do
Up selling	A sales strategy where the seller provide opportunities to purchase related products or services, often for the sole purpose of making a larger sale
Vertical	Vertical may exist within a sub-sector representing different domain areas or the client industries served by the industry
Warranty	A written guarantee, issued to the purchaser of an article by its manufacturer, promising to repair or replace it if necessary within a specified period of time