



Field Technician Other Home Appliances

QP Code: ELE/Q3104

Version: 2.0

NSQF Level: 4

Electronics Sector Skills Council of India || 155, 2nd Floor, ESC House Okhla Industrial Area-Phase 3
New Delhi- 110020 || email:anu@essc-india.org

Contents

ELE/Q3104: Field Technician Other Home Appliances	3
<i>Brief Job Description</i>	3
Applicable National Occupational Standards (NOS)	3
<i>Compulsory NOS</i>	3
<i>Qualification Pack (QP) Parameters</i>	3
ELE/N3101: Engage with customer for service	5
ELE/N3118: Install the water purifier	9
ELE/N3119: Repair dysfunctional water purifier	16
ELE/N3120: Repair dysfunctional mixer/juicer/grinder	22
ELE/N3121: Repair dysfunctional microwave oven	28
ELE/N9905: Work effectively at the workplace	34
ELE/N1002: Apply health and safety practices at the workplace	42
Assessment Guidelines and Weightage	49
<i>Assessment Guidelines</i>	49
<i>Assessment Weightage</i>	50
Acronyms	51
Glossary	52

ELE/Q3104: Field Technician Other Home Appliances

Brief Job Description

The individual at work is responsible for interacting with the customers for installation of the appliance and diagnosis of the problem to assess possible causes of malfunction. The individual is also responsible for rectification of the problems, replacement of faulty modules Failed parts or recommend for factory repairs.

Personal Attributes

The individual must be willing to work in the field and travel through the day from one customer premise to another. The individual must also possess important attributes such as punctuality, amenable behaviour, patience, good interpersonal relationship building, trustworthiness, integrity, and critical thinking.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [ELE/N3101: Engage with customer for service](#)
2. [ELE/N3118: Install the water purifier](#)
3. [ELE/N3119: Repair dysfunctional water purifier](#)
4. [ELE/N3120: Repair dysfunctional mixer/juicer/grinder](#)
5. [ELE/N3121: Repair dysfunctional microwave oven](#)
6. [ELE/N9905: Work effectively at the workplace](#)
7. [ELE/N1002: Apply health and safety practices at the workplace](#)

Qualification Pack (QP) Parameters

Sector	Electronics
Sub-Sector	Consumer Electronics & IT Hardware
Occupation	After Sales Service
Country	India
NSQF Level	4

Credits	NA
Aligned to NCO/ISCO/ISIC Code	NCO-2004/7249.90
Minimum Educational Qualification & Experience	8th Class (+ ITI (2 years after 8th) with 2 years of relevant Experience) OR 10th Class (With 2 years of relevant Experience OR I.T.I (after 10th) OR 12th Class) OR Certificate (NSQF Level-3 in Safety Testing Technician RACWO with 2 years of relevant Experience)
Minimum Level of Education for Training in School	8th Class
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	27/01/2022
Next Review Date	02/06/2025
Deactivation Date	10/01/2024
NSQC Approval Date	27/01/2022
Version	2.0
Reference code on NQR	2022/EHW/ESSC/05111
NQR Version	1.0

Remarks:

NA

ELE/N3101: Engage with customer for service

Description

This NOS unit is about interacting with customer to understand their requirement with respect to problem in the appliance

Scope

The scope covers the following :

- Interact with customer
- Suggest possible solutions

Elements and Performance Criteria

Interacting with customer

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

- PC1.** analyse the details of customer complaint registered at customer care or installation schedule
- PC2.** connect with the customer to confirm problem telephonically and fix time for visit
- PC3.** collect appropriate tools, parts, relevant reference sheets, manuals and documents
- PC4.** visit the customer premises as per the scheduled date and time for service as per the requirement
- PC5.** check about warranty status of appliance and annual maintenance contract
- PC6.** gather detailed information pertaining to age of appliance, status of upkeep, symptoms and history of problems in the appliance
- PC7.** provide information to the customer about the warranty and problem in detail along with the precautions to be taken in order to avoid recurrence of problem

Suggest possible solutions

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

- PC8.** suggest possible solutions with the time required, costs involved and methodology for servicing
- PC9.** seek customer's approval on further action

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** company's policies on code of conduct, organisation's culture, customer care, reporting structure and documentation policy
- KU2.** company's products and recurring problems reported in consumer appliances
- KU3.** precautions to be taken while handling field calls and dealing with customers
- KU4.** importance of personal grooming with proper etiquettes at the customer's premises
- KU5.** basic electrical, mechanical modules of various appliances and electronics involved in the type of appliance

KU6. models of different appliances, their common and distinguishing features, functionality of different features of appliances and new features

Generic Skills (GS)

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

- GS1.** complete required documentation
- GS2.** seek inputs and guidance from the supervisor
- GS3.** read and comprehend documents
- GS4.** communicate in local/regional/English language
- GS5.** comply with applicable standard operating procedures
- GS6.** communicate with all stakeholders to be able to work efficiently
- GS7.** interact with others in a polite and courteous manner
- GS8.** maintain proper etiquette while dealing with the customer

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Interacting with customer</i>	32	41	-	8
PC1. analyse the details of customer complaint registered at customer care or installation schedule	5	6	-	1
PC2. connect with the customer to confirm problem telephonically and fix time for visit	4	6	-	1
PC3. collect appropriate tools, parts, relevant reference sheets, manuals and documents	4	6	-	2
PC4. visit the customer premises as per the scheduled date and time for service as per the requirement	4	6	-	1
PC5. check about warranty status of appliance and annual maintenance contract	4	6	-	1
PC6. gather detailed information pertaining to age of appliance, status of upkeep, symptoms and history of problems in the appliance	5	6	-	1
PC7. provide information to the customer about the warranty and problem in detail along with the precautions to be taken in order to avoid recurrence of problem	6	5	-	1
<i>Suggest possible solutions</i>	8	9	-	2
PC8. suggest possible solutions with the time required, costs involved and methodology for servicing	4	5	-	1
PC9. seek customer’s approval on further action	4	4	-	1
NOS Total	40	50	-	10

National Occupational Standards (NOS) Parameters

NOS Code	ELE/N3101
NOS Name	Engage with customer for service
Sector	Electronics
Sub-Sector	Consumer Electronics & IT Hardware
Occupation	AFTER SALES SERVICE
NSQF Level	4
Credits	TBD
Version	2.0
Last Reviewed Date	27/01/2022
Next Review Date	27/01/2025
NSQC Clearance Date	27/01/2022

ELE/N3118: Install the water purifier

Description

This NOS unit is about installation of newly purchased water purifier at customer location and make it ready to use

Scope

The scope covers the following :

- This unit/ task covers the following:
- Perform pre-installation checks
- Prepare for installation of the appliance
- Install water purifier at customer location
- Install washing machine at customer location
- Install water purifier at customer location
- Diagnose, repair and replace the faulty module of appliance

Elements and Performance Criteria

Undertake pre-installation site visit

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

- PC1.** visit customer location as scheduled before carrying out installation of water purifier
- PC2.** carry appropriately functional tools and equipment required for performing pre-installation checks and installation
- PC3.** enquire from the customer about their preference regarding placement of the water purifier i.e. whether to be placed under the sink (UTS) or on the wall
- PC4.** verify the structural requirements such as distance from power supply, vicinity to plumbing point, etc.
- PC5.**
 - provide information to the customer about pre installations/masonry/electrical work to be carried out and requirement of adequate water pressure at the inlet source
- PC6.** perform steps to make necessary markings for placement of the water purifier unit
- PC7.** schedule next visit for installation of water purifier unit in case pre-installation work is yet to be done

Prepare for installation of the appliance

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

- PC8.** remove the packaging from the appliance delivered at the customer location
- PC9.** verify that the product matches the customer's order with all supporting accessories
- PC10.** check the availability of all tools and fitments for the installation
- PC11.** clear up the packaging material waste and dispose as per company's norms
- PC12.** perform pre-installation checks to ensure all requirements are met, including adequate water pressure at inlet source

Install water purifier at customer location

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

- PC13.** drill holes after taking necessary measurements of the location and ensure that no internal wiring damage is caused
- PC14.** mount the filter and ensure that the screws are fastened securely
- PC15.** drain the inlet line before connecting it to the water purifier and connect the outlet pipe to the drain (if applicable)
- PC16.** connect the purifier to the nearest power supply point
- PC17.** ensure that the filter is aligned as per instructions in the installation manual
- PC18.** run the purifier to ensure there are no leaks and demonstrate the features/utility to the customer

Perform post-installation activities

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

- PC19.** demonstrate the features and utility to the customer
- PC20.** explain maintenance procedures to be followed while using the water purifier
- PC21.** escalate the customer issues/problems that are unresolved in the field to the supervisor
- PC22.** fill in customer acknowledgement form and get it signed by customer
- PC23.** maintain other documentation for recording completion of installation
- PC24.** document the work completed on the company ERP software for tracking and inform customer care as well as supervisor about job completion

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** company's policy on product's warranty, sales, installation, after sales support policy and other terms and conditions
- KU2.** installation site requirements (structural requirements, ventilation, etc.) with all safety precautions to be taken while installing
- KU3.** how to remove packaging without causing any damage to the purifier unit and accessories
- KU4.** operation of tools such as electric drill, screw drivers, wrenches, tube cutters/benders, spanners, etc.
- KU5.** process of how water flows through various switches, valves and different layers of filter
- KU6.** how to operate the water purifier, make appropriate settings after plugging in and use various features
- KU7.** procedure to fix various accessories and parts that have accompanied the unit
- KU8.** different types of water purifiers manufactured by the company
- KU9.** manual-based procedure of installing the refrigerators/air conditioner/washing machine/water purifier
- KU10.** requirements specified in instructions manual about positioning the water filter
- KU11.** importance of proper placing

Generic Skills (GS)

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

- GS1.** complete forms and other documentation

- GS2.** work effectively to reduce repetition of errors and improve work processes
- GS3.** read and comprehend text material
- GS4.** communicate in local/regional/English language
- GS5.** interact with others in a polite and courteous manner
- GS6.** comply with applicable standard operating procedures
- GS7.** communicate with all stakeholders to be able to work efficiently
- GS8.** seek inputs and guidance from the supervisor
- GS9.** maintain proper etiquette while dealing with the customer

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Undertake pre-installation site visit</i>	13	12	-	2
PC1. visit customer location as scheduled before carrying out installation of water purifier	1	-	-	-
PC2. carry appropriately functional tools and equipment required for performing pre-installation checks and installation	2	4	-	1
PC3. enquire from the customer about their preference regarding placement of the water purifier i.e. whether to be placed under the sink (UTS) or on the wall	2	-	-	-
PC4. verify the structural requirements such as distance from power supply, vicinity to plumbing point, etc.	2	4	-	1
PC5. <ul style="list-style-type: none"> • provide information to the customer about pre installations/masonry/electrical work to be carried out and requirement of adequate water pressure at the inlet source 	2	-	-	-
PC6. perform steps to make necessary markings for placement of the water purifier unit	2	4	-	-
PC7. schedule next visit for installation of water purifier unit in case pre-installation work is yet to be done	2	-	-	-
<i>Prepare for installation of the appliance</i>	7	15	-	2
PC8. remove the packaging from the appliance delivered at the customer location	2	2	-	-
PC9. verify that the product matches the customer's order with all supporting accessories	-	4	-	-
PC10. check the availability of all tools and fitments for the installation	3	3	-	-
PC11. clear up the packaging material waste and dispose as per company's norms	-	2	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. perform pre-installation checks to ensure all requirements are met, including adequate water pressure at inlet source	2	4	-	2
<i>Install water purifier at customer location</i>	8	15	-	4
PC13. drill holes after taking necessary measurements of the location and ensure that no internal wiring damage is caused	2	3	-	1
PC14. mount the filter and ensure that the screws are fastened securely	2	3	-	1
PC15. drain the inlet line before connecting it to the water purifier and connect the outlet pipe to the drain (if applicable)	2	3	-	1
PC16. connect the purifier to the nearest power supply point	-	2	-	-
PC17. ensure that the filter is aligned as per instructions in the installation manual	2	-	-	-
PC18. run the purifier to ensure there are no leaks and demonstrate the features/utility to the customer	-	4	-	1
<i>Perform post-installation activities</i>	12	8	-	2
PC19. demonstrate the features and utility to the customer	2	4	-	1
PC20. explain maintenance procedures to be followed while using the water purifier	2	-	-	-
PC21. escalate the customer issues/problems that are unresolved in the field to the supervisor	2	-	-	-
PC22. fill in customer acknowledgement form and get it signed by customer	2	2	-	-
PC23. maintain other documentation for recording completion of installation	2	-	-	-
PC24. document the work completed on the company ERP software for tracking and inform customer care as well as supervisor about job completion	2	2	-	1

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

National Occupational Standards (NOS) Parameters

NOS Code	ELE/N3118
NOS Name	Install the water purifier
Sector	Electronics
Sub-Sector	Consumer Electronics & IT Hardware
Occupation	After Sales Service
NSQF Level	4
Credits	TBD
Version	2.0
Last Reviewed Date	27/01/2022
Next Review Date	19/07/2023
NSQC Clearance Date	19/01/2023

ELE/N3119: Repair dysfunctional water purifier

Description

This OS unit is about understanding the customer complaints, identifying the fault and fixing the water purifier.

Scope

The scope covers the following :

- This unit/ task covers the following:
- Diagnose fault in water purifier
- Replace/repair dysfunctional module in water purifier
- Confirm functionality of repaired unit

Elements and Performance Criteria

Diagnose fault in water purifier

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

- PC1.** diagnose the fault based on customer interaction, usage pattern and initial inspection
- PC2.** check water pressure to ensure it is as specified by company standards
- PC3.** perform steps to shut off the system by turning off the water supply and unplugging the appliance to carry out further inspection
- PC4.** place a piece of cloth or towel under the unit in order to avoid any water spills on the floor
- PC5.** perform basic inspection of feed water valve, tank valve, tubing, housing etc. to diagnose reasons for low/no water production
- PC6.** identify reasons for leaks in the filter housing due to loose housing, damaged or misaligned O ring, cracks in the housing
- PC7.** detect worn out auto shut off valve through symptoms such as loud vibrating noise, drain water never shutting off etc.
- PC8.** detect other problems such as clogged filters, storage tank problems, clogged flow resistor, inadequate/excessive water pressure, improper saddle valve mounting etc.
- PC9.** detect basic electrical faults such as improper/no earth, defective power cord, connector or internal wiring defect, short/ loose/open contacts, blown fuse
- PC10.** inspect each module of the unit separately if the fault is not identified through basic tests
- PC11.** send it to factory for in-depth diagnosis if problem does not get identified at site

Replace/repair dysfunctional module in water purifier

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

- PC12.** repair/replace component at location, if the fault identified is due to damage of components such as feed water valve, tank valve, tubing, housing etc.
- PC13.** schedule next appointment if the part can't be replaced on site
- PC14.** reassemble the unit to check that all the modules of the unit are working as per specifications

Confirm functionality of repaired unit

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

- PC15.** demonstrate functionality of the unit to the customer
- PC16.** provide information to the customer about cleaning procedures and precautions to be taken in order to avoid recurrence of problem
- PC17.** fill in customer acknowledgement form
- PC18.** complete all documentation procedures for complaint closure
- PC19.** collect necessary payments from the customer
- PC20.** sell related products such as new equipment or Annual Maintenance Contracts (AMC) as per company policy

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** company's policy on product's warranty, sales, installation, after sales support policy and other terms and conditions
- KU2.** damage free handling of the unit
- KU3.** water purifier manufacturing capabilities of the organization
- KU4.** water flow diagram and electrical circuit diagram of the appliance
- KU5.** water purification process and different layers of filter present within the unit such as sediment filter, carbon block filter, TFC/TFM membrane, inline carbon filter etc.
- KU6.** different technologies in water purification (such as reverse osmosis etc.)
- KU7.** parameters such as production rate, water chemistry, drain rate, input water, pressure/temperature etc.
- KU8.** different types of water purifiers manufactured by the company and their respective features
- KU9.** functioning of the appliance as well as chemical and other properties of various filters of the appliance
- KU10.** basic electronics (knowledge of components such as diode, transformer, LED, photo transistor, capacitor, resistor, inductor, thermistor, ICs)
- KU11.** fundamentals of electricity such as ohms law, difference between ac and dc, calculation of energy consumption of appliances, understanding of domestic wiring, understanding of series and parallel connections
- KU12.** procedure to diagnose the problem accurately and in assigned time
- KU13.** troubleshooting knowledge with respect to water purifiers
- KU14.** components/modules of the water purifier and their functioning such as inlet valve, auto shut off valve, saddle valve, housing, O ring, PCB and their prices
- KU15.** selection of the right spares according to recorded complaints
- KU16.** hazards that may occur during repairs, their causes and prevention/personal safety
- KU17.** frequently occurring faults such as low/no water production, leaks, bad tasting water etc.
- KU18.** other products of the company
- KU19.** electrical and electronic symbols, multiples and SI units
- KU20.** how to operate/use TDS tester, tube cutter, tube bender, temperature meter, pressure gauges, wrenches, pliers, screw drivers
- KU21.** company specified procedures to change filters, resin and membrane of different models of water purifier

Generic Skills (GS)

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

- GS1.** complete forms and other documentation
- GS2.** read and comprehend manuals/text material/documents
- GS3.** communicate in local/regional/English language
- GS4.** interact with others in a polite and courteous manner
- GS5.** comply with applicable standard operating procedures
- GS6.** communicate with all stakeholders to be able to work efficiently
- GS7.** seek inputs and guidance from the supervisor
- GS8.** maintain proper etiquette while dealing with the customer
- GS9.** interpret information clearly
- GS10.** improve work processes
- GS11.** ensure customer satisfaction
- GS12.** document/record information as per company formats

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Diagnose fault in water purifier</i>	22	36	-	7
PC1. diagnose the fault based on customer interaction, usage pattern and initial inspection	2	3	-	1
PC2. check water pressure to ensure it is as specified by company standards	2	2	-	-
PC3. perform steps to shut off the system by turning off the water supply and unplugging the appliance to carry out further inspection	-	3	-	-
PC4. place a piece of cloth or towel under the unit in order to avoid any water spills on the floor	-	1	-	-
PC5. perform basic inspection of feed water valve, tank valve, tubing, housing etc. to diagnose reasons for low/no water production	3	4	-	1
PC6. identify reasons for leaks in the filter housing due to loose housing, damaged or misaligned O ring, cracks in the housing	3	4	-	1
PC7. detect worn out auto shut off valve through symptoms such as loud vibrating noise, drain water never shutting off etc.	3	4	-	1
PC8. detect other problems such as clogged filters, storage tank problems, clogged flow resistor, inadequate/excessive water pressure, improper saddle valve mounting etc.	3	4	-	1
PC9. detect basic electrical faults such as improper/no earth, defective power cord, connector or internal wiring defect, short/ loose/open contacts, blown fuse	3	4	-	1
PC10. inspect each module of the unit separately if the fault is not identified through basic tests	3	4	-	1
PC11. send it to factory for in-depth diagnosis if problem does not get identified at site	-	3	-	-
<i>Replace/repair dysfunctional module in water purifier</i>	7	8	-	2

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. repair/replace component at location, if the fault identified is due to damage of components such as feed water valve, tank valve, tubing, housing etc.	3	4	-	1
PC13. schedule next appointment if the part can't be replaced on site	-	1	-	-
PC14. reassemble the unit to check that all the modules of the unit are working as per specifications	4	3	-	1
<i>Confirm functionality of repaired unit</i>	11	6	-	1
PC15. demonstrate functionality of the unit to the customer	3	3	-	1
PC16. provide information to the customer about cleaning procedures and precautions to be taken in order to avoid recurrence of problem	2	-	-	-
PC17. fill in customer acknowledgement form	1	1	-	-
PC18. complete all documentation procedures for complaint closure	2	1	-	-
PC19. collect necessary payments from the customer	1	-	-	-
PC20. sell related products such as new equipment or Annual Maintenance Contracts (AMC) as per company policy	2	1	-	-
NOS Total	40	50	-	10

National Occupational Standards (NOS) Parameters

NOS Code	ELE/N3119
NOS Name	Repair dysfunctional water purifier
Sector	Electronics
Sub-Sector	Consumer Electronics & IT Hardware
Occupation	After Sales Service
NSQF Level	4
Credits	TBD
Version	2.0
Last Reviewed Date	27/01/2022
Next Review Date	19/07/2023
NSQC Clearance Date	19/01/2023

ELE/N3120: Repair dysfunctional mixer/juicer/grinder

Description

This NOS unit is about understanding the customers complaints, identifying the fault and fixing the mixer/juicer/grinder.

Scope

The scope covers the following :

- This unit/ task covers the following:
- Diagnose fault in mixer/juicer/grinder
- Replace/repair dysfunctional module in mixer/juicer/grinder
- Confirm functionality of repaired unit

Elements and Performance Criteria

Diagnose fault in mixer/juicer/grinder

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

- PC1.** diagnose the fault based on customer interaction, usage pattern of mixer/juicer/grinder and initial inspection
- PC2.** unplug the appliance and turn the overload switch back to original position if the appliance turned off due to overload
- PC3.**
 - perform basic tests such as power supply inspection, volt ampere test and
 - earth test power supply
- PC4.** detect basic electrical faults such as improper/no earth, defective power cord, connector or internal wiring defect, short/ loose/open contacts, blown fuse
- PC5.** diagnose reasons for abnormal noise during use such as loose jar coupler, overloading of jar, worn out blade shaft, worn out jar bush, worn out/broken motor coupler
- PC6.** diagnose reasons for appliance not running due to dysfunctional motor, overload circuit breaker tripping, no power supply etc.
- PC7.** identify reasons for overflowing/leaking of contents from the jar such as faulty fitting of dome lid cap, dome gasket, overloading of the jar etc.
- PC8.** detect problems in the indicator switch due to lack of power supply, tripping of overload circuit breaker etc.
- PC9.** inspect each module of the unit separately if the fault is not identified through basic tests
- PC10.** send it to factory for in-depth diagnosis if problem does not get identified at site

Replace/repair dysfunctional module in mixer/juicer/grinder

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

- PC11.** repair/replace component at location, if the fault identified is due to damage of components such as relay or thermostat
- PC12.** schedule next appointment if the part can't be replaced on site
- PC13.** reassemble the unit to check that all the modules of the unit are working as per specifications

Confirm functionality of the repaired unit

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

- PC14.** demonstrate functionality of the unit to the customer
- PC15.** provide information to the customer about cleaning procedures and precautions to be taken in order to avoid recurrence of problem
- PC16.** fill in customer acknowledgement form
- PC17.** complete all documentation procedures for complaint closure
- PC18.** collect necessary payments from the customer
- PC19.** sell related products such as new equipment or annual maintenance contracts (AMC) as per company policy

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** damage free handling of the unit
- KU2.** different models of mixer/juicer/grinder along with their modules, features and functionalities
- KU3.** basic electrical fundamentals with regard to functioning of motors, circuit breakers, etc.
- KU4.** basic electronics (knowledge of components such as diode, transformer, LED, photo transistor, capacitor, resistor, inductor, thermistor, lcs
- KU5.** functioning of various electromechanical parts of the mixer/grinder
- KU6.** fundamentals of electricity such as ohms law, difference between ac and dc, calculation of energy consumption of appliances, understanding of domestic wiring, understanding of series and parallel connections
- KU7.** troubleshooting knowledge with respect to small home appliances
- KU8.** hazards, their causes and prevention/personal safety
- KU9.** frequently occurring faults such as abnormal noise during use, jars, overflowing, jar leaking etc.
- KU10.** energy ratings such BEE rating and concepts of e waste
- KU11.** other products of the company
- KU12.** usage of multi-meter, clamp meter, tube cutter, tube bender, screw drivers, wrenches, pliers etc.

Generic Skills (GS)

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

- GS1.** complete forms and other documentation
- GS2.** read and comprehend manuals/text material/documents
- GS3.** communicate in local/regional/English language
- GS4.** interact with others in a polite and courteous manner
- GS5.** comply with applicable standard operating procedures
- GS6.** communicate with all stakeholders to be able to work efficiently
- GS7.** seek inputs and guidance from the supervisor
- GS8.** maintain proper etiquette while dealing with the customer



Qualification Pack



GS9. interpret information clearly

GS10. improve work processes

GS11. ensure customer satisfaction

GS12. document/record information as per company formats

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Diagnose fault in mixer/juicer/grinder</i>	24	34	-	8
PC1. diagnose the fault based on customer interaction, usage pattern of mixer/juicer/grinder and initial inspection	3	2	-	1
PC2. unplug the appliance and turn the overload switch back to original position if the appliance turned off due to overload	-	3	-	-
PC3. • perform basic tests such as power supply inspection, volt ampere test and • earth test power supply	3	3	-	1
PC4. detect basic electrical faults such as improper/no earth, defective power cord, connector or internal wiring defect, short/ loose/open contacts, blown fuse	3	4	-	1
PC5. diagnose reasons for abnormal noise during use such as loose jar coupler, overloading of jar, worn out blade shaft, worn out jar bush, worn out/broken motor coupler	3	4	-	1
PC6. diagnose reasons for appliance not running due to dysfunctional motor, overload circuit breaker tripping, no power supply etc.	3	4	-	1
PC7. identify reasons for overflowing/leaking of contents from the jar such as faulty fitting of dome lid cap, dome gasket, overloading of the jar etc.	3	4	-	1
PC8. detect problems in the indicator switch due to lack of power supply, tripping of overload circuit breaker etc.	3	4	-	1
PC9. inspect each module of the unit separately if the fault is not identified through basic tests	3	4	-	1
PC10. send it to factory for in-depth diagnosis if problem does not get identified at site	-	2	-	-
<i>Replace/repair dysfunctional module in mixer/juicer/grinder</i>	6	10	-	1

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. repair/replace component at location, if the fault identified is due to damage of components such as relay or thermostat	3	4	-	1
PC12. schedule next appointment if the part can't be replaced on site	-	1	-	-
PC13. reassemble the unit to check that all the modules of the unit are working as per specifications	3	5	-	-
<i>Confirm functionality of the repaired unit</i>	10	6	-	1
PC14. demonstrate functionality of the unit to the customer	2	3	-	1
PC15. provide information to the customer about cleaning procedures and precautions to be taken in order to avoid recurrence of problem	2	-	-	-
PC16. fill in customer acknowledgement form	1	1	-	-
PC17. complete all documentation procedures for complaint closure	2	1	-	-
PC18. collect necessary payments from the customer	1	-	-	-
PC19. sell related products such as new equipment or annual maintenance contracts (AMC) as per company policy	2	1	-	-
NOS Total	40	50	-	10

National Occupational Standards (NOS) Parameters

NOS Code	ELE/N3120
NOS Name	Repair dysfunctional mixer/juicer/grinder
Sector	Electronics
Sub-Sector	Consumer Electronics & IT Hardware
Occupation	After Sales Service
NSQF Level	4
Credits	TBD
Version	2.0
Last Reviewed Date	27/01/2022
Next Review Date	19/07/2023
NSQC Clearance Date	19/01/2023

ELE/N3121: Repair dysfunctional microwave oven

Description

This NOS unit is about understanding the customer complaints, identifying the fault and fixing the microwave oven

Scope

The scope covers the following :

- This unit/ task covers the following:
- Diagnose fault in microwave
- Replace/repair dysfunctional module in microwave
- Confirm functionality of repaired unit

Elements and Performance Criteria

Diagnose fault in microwave

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

- PC1.** diagnose the fault based on customer interaction, usage pattern of microwave and initial inspection
- PC2.** unplug the appliance to carry out the inspection and diagnosis of faults
- PC3.**
 - perform basic tests such as power supply inspection, volt ampere test and
 - earth test power supply
- PC4.** detect basic electrical faults or power problems such as improper/no earth, defective power cord, connector or internal wiring defect, short/ loose/open contacts, blown fuse, open motor windings etc.
- PC5.** diagnose problem of oven running but not heating due to shorted diode, HV transformer or magnetron, damaged magnetron dome, magnetron insulator breakdown, shorted HV capacitor or HV wiring
- PC6.** diagnose reasons of low heating due to ageing magnetron, cracked magnet, burned dome or magnetron insulator breakdown
- PC7.** identify reasons for intermittent/uneven heating due to oxidised/burned connection to magnetron filament terminals, burned connector due to poor crimp or weakened connection
- PC8.** detect other problems such as defective touch panel/keypad, defective control board, defective sensor unit, burned slip on connector, defective trial, open fuse/open HV capacitor, open HV diode etc.
- PC9.** inspect each module of the unit separately if the fault is not identified through basic tests
- PC10.** send it to factory for in-depth diagnosis if problem does not get identified at site

Replace/repair dysfunctional module in microwave

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

- PC11.** repair/replace component at location, if the fault identified is due to damage of components such as relay or thermostat
- PC12.** schedule next appointment if the part can't be replaced on site

PC13. reassemble the unit to check that all the modules of the unit are working as per specifications

Confirm functionality of the repaired unit

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

PC14. demonstrate functionality of the unit to the customer

PC15. provide information to the customer about cleaning procedures and precautions to be taken in order to avoid recurrence of problem

PC16. fill in customer acknowledgement form

PC17. complete all documentation procedures for complaint closure

PC18. collect necessary payments from the customer

PC19. sell related products such as new equipment or Annual Maintenance Contracts (AMC) as per company policy

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. damage free handling of the unit

KU2. different models of microwave ovens and their features and functionalities

KU3. basic electrical fundamentals with regard to functioning of motors, circuit breakers, etc.

KU4. basic electronics (knowledge of components such as diode, transformer, LED, photo transistor, capacitor, resistor, inductor, thermistor, ICs)

KU5. functioning of various electromechanical parts of the microwave

KU6. fundamentals of electricity such as ohms law, difference between ac and dc, calculation of energy consumption of appliances, understanding of domestic wiring, understanding of series and parallel connections

KU7. how to diagnose the problem and fix dysfunctional appliance in designated time

KU8. troubleshooting knowledge with respect to microwaves

KU9. hazards, their causes and prevention/personal safety

KU10. frequently occurring faults such as intermittent heating, no heating, timing problem, display problem etc.

KU11. energy ratings such BEE rating and concepts of e waste

KU12. components/modules of different microwaves and their prices

KU13. other products of the company

KU14. usage of multi-meter, clamp meter, microwave leakage detector, microwave power detector, thermometer, screwdriver etc.

Generic Skills (GS)

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

GS1. complete forms and other documentation

GS2. read and comprehend manuals/text material/documents

GS3. communicate in local/regional/English language

- GS4.** interact with others in a polite and courteous manner
- GS5.** comply with applicable standard operating procedures
- GS6.** communicate with all stakeholders to be able to work efficiently
- GS7.** seek inputs and guidance from the supervisor
- GS8.** maintain proper etiquette while dealing with the customer
- GS9.** interpret information clearly
- GS10.** improve work processes
- GS11.** ensure customer satisfaction
- GS12.** document/record information as per company formats

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Diagnose fault in microwave</i>	24	34	-	8
PC1. diagnose the fault based on customer interaction, usage pattern of microwave and initial inspection	3	2	-	1
PC2. unplug the appliance to carry out the inspection and diagnosis of faults	-	3	-	-
PC3. • perform basic tests such as power supply inspection, volt ampere test and • earth test power supply	3	3	-	1
PC4. detect basic electrical faults or power problems such as improper/no earth, defective power cord, connector or internal wiring defect, short/ loose/open contacts, blown fuse, open motor windings etc.	3	4	-	1
PC5. diagnose problem of oven running but not heating due to shorted diode, HV transformer or magnetron, damaged magnetron dome, magnetron insulator breakdown, shorted HV capacitor or HV wiring	3	4	-	1
PC6. diagnose reasons of low heating due to ageing magnetron, cracked magnet, burned dome or magnetron insulator breakdown	3	4	-	1
PC7. identify reasons for intermittent/uneven heating due to oxidised/burned connection to magnetron filament terminals, burned connector due to poor crimp or weakened connection	3	4	-	1
PC8. detect other problems such as defective touch panel/keypad, defective control board, defective sensor unit, burned slip on connector, defective trial, open fuse/open HV capacitor, open HV diode etc.	3	4	-	1
PC9. inspect each module of the unit separately if the fault is not identified through basic tests	3	4	-	1
PC10. send it to factory for in-depth diagnosis if problem does not get identified at site	-	2	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Replace/repair dysfunctional module in microwave</i>	6	10	-	1
PC11. repair/replace component at location, if the fault identified is due to damage of components such as relay or thermostat	3	4	-	1
PC12. schedule next appointment if the part can't be replaced on site	-	1	-	-
PC13. reassemble the unit to check that all the modules of the unit are working as per specifications	3	5	-	-
<i>Confirm functionality of the repaired unit</i>	10	6	-	1
PC14. demonstrate functionality of the unit to the customer	2	3	-	1
PC15. provide information to the customer about cleaning procedures and precautions to be taken in order to avoid recurrence of problem	2	-	-	-
PC16. fill in customer acknowledgement form	1	1	-	-
PC17. complete all documentation procedures for complaint closure	2	1	-	-
PC18. collect necessary payments from the customer	1	-	-	-
PC19. sell related products such as new equipment or Annual Maintenance Contracts (AMC) as per company policy	2	1	-	-
NOS Total	40	50	-	10

National Occupational Standards (NOS) Parameters

NOS Code	ELE/N3121
NOS Name	Repair dysfunctional microwave oven
Sector	Electronics
Sub-Sector	Consumer Electronics & IT Hardware
Occupation	After Sales Service
NSQF Level	4
Credits	TBD
Version	2.0
Last Reviewed Date	27/01/2022
Next Review Date	19/07/2023
NSQC Clearance Date	19/01/2023

ELE/N9905: Work effectively at the workplace

Description

This unit is about the communicating and managing work effectively at the workplace as well as taking measures to enhance own competence and working in a disciplined and ethical manner.

Scope

The scope covers the following :

- Communicate effectively at the workplace
- Work effectively
- Maintain and enhance professional competence
- Work in a disciplined and ethical manner
- Uphold social diversity at the workplace

Elements and Performance Criteria

Communicate effectively at the workplace

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

- PC1.** exchange information and instruction with colleagues, and seek clarifications and feedback as necessary
- PC2.** assist colleagues where required
- PC3.** follow business communication etiquette in all interactions and communicative formats (online, digital, and in-person)
- PC4.** document and share all relevant information with stakeholders in agreed formats and as per agreed timelines

Work effectively

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

- PC5.** identify and obtain clarity regarding organisational, team and own goals and targets
- PC6.** prioritise and plan work in order to achieve goals and targets
- PC7.** monitor own and team performance as per agreed plan
- PC8.** complete duties accurately, systematically and within required timeframes
- PC9.** express emotions appropriately at the workplace and manage own response to heightened emotions
- PC10.** maintain orderliness and cleanliness in the work area

Maintain and enhance professional competence

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

- PC11.** identify own strengths and weaknesses in relation to goals and targets
- PC12.** adapt self, service, or product to meet success criteria
- PC13.** seek and select opportunities for continuous professional development
- PC14.** formulate a professional development plan to enhance capabilities
- PC15.** build or contribute to the organizational knowledge base of cases, clients, issues, solutions, and innovations

PC16. examine developments and trends in field of work and their potential impact on work

PC17. take feedback from peers, supervisors and clients to improve own performance and practices

Work in a disciplined and ethical manner

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

PC18. perform tasks as per workplace standards, organisational policies and legislative requirements

PC19. display appropriate professional appearance at the workplace and adhere to the organisational dress code

PC20. demonstrate responsible and disciplined behaviour at the workplace such as punctuality; completing tasks as per given time and standards; demonstrating professional behaviour at all times, adopting environment- friendly practices, etc.

PC21. identify the cause of conflict and options for resolution with peers or escalate grievances and problems to appropriate authority as per procedure for conflict resolution

PC22. protect the rights of the client and organisation when delivering services

PC23. ensure services are delivered equally to all clients regardless of personal and cultural beliefs

PC24. operate within an agreed ethical code of practice and report unethical conduct to the appropriate authorities

PC25. follow organisational guidelines and legal requirements on disclosure and confidentiality

Uphold social diversity at the workplace

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

PC26. recognize and evaluate biased practices against underrepresented groups like women and persons with disabilities, in workplace systems and processes

PC27. identify and report discrimination and harassment based on gender, disability, or cultural difference at the workplace

PC28. use inclusive or neutral language and gestures in all interactions

PC29. respect the personal and professional space of others

PC30. access grievance redressal mechanisms as per legislations

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. organizational hierarchy and escalation matrix

KU3. importance of the individual's role in the workflow

KU4. organisational norms on health, safety and sustainability

KU5. work area inspection procedures and practices

KU6. professional etiquette and grooming

KU7. communication etiquette across communicative mediums (online, digital, and in-person) including strategies/methods for sharing information, documentation, and providing and receiving feedback

KU8. importance of self-evaluations and developing a continuous learning and professional development plan

- KU9.** developments and trends impacting professional practice
- KU10.** importance of taking and using feedback from colleagues and clients to identify and introduce improvements in work performance
- KU11.** professional ethics and workplace norms on reporting and/or penalizing unethical behaviour and practices.
- KU12.** guidelines and legal requirements on disclosure, confidentiality, and conflicts of interest
- KU13.** strategies for collaboration with colleagues and clients.
- KU14.** professional responses and strategies against inappropriate language or behaviour toward self and others
- KU15.** Implicit bias (based on gender, disability, class, caste, colour, race, culture, religion, etc.) and its consequences in the workplace
- KU16.** organizational guidelines, prevalent legislations and accessibility norms and processes to support PwDs at the workplace
- KU17.** strategies for time, effort and resource allocation towards the goals.
- KU18.** basic concepts of work productivity including waste reduction, efficient material usage and optimization of time

Generic Skills (GS)

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

- GS1.** complete documentation and forms such as work orders, invoices maintenance records activity logs, attendance sheets as per organizational format in English and/or local language
- GS2.** write basic accident or incident report accurately in an appropriate format
- GS3.** read warnings, instructions and other text material on product labels, components, etc. and relevant signages, warnings, labels or descriptions on equipment, etc. while carrying out work activities
- GS4.** convey and share technical information clearly using appropriate language
- GS5.** clarify task-related information
- GS6.** liaise with authorities and supervisors as per organizational protocol
- GS7.** listen, speak, and write in an inclusive, respectful manner in line with organizational protocol
- GS8.** seek clarification from immediate supervisor or responsible authority or exercise most appropriate solutions to safety breaches at work
- GS9.** report to the supervisor and when to deal with a colleague depending on the type of concern
- GS10.** deliver product to next work process on time
- GS11.** improve work process and report potential areas of delays and disruptions
- GS12.** communicate problems appropriately to others
- GS13.** identify symptoms of the fault to the cause of the problem and resolve, otherwise seek assistance and support from other sources to solve the problem
- GS14.** anticipate and avoid hazards that may occur during repairs because of tools, materials used or repair processes
- GS15.** complete tasks efficiently and accurately within stipulated time
- GS16.** appreciate and respect social diversity in all professional settings
- GS17.** develop awareness and accountability for perspectives on gender, disabilities, and socio-cultural issues leading to discrimination, bias, or harassment at the workplace



Qualification Pack



GS18. maintain positive and effective relationships with colleagues and customers

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Communicate effectively at the workplace</i>	5	13	-	-
PC1. exchange information and instruction with colleagues, and seek clarifications and feedback as necessary	1	3	-	-
PC2. assist colleagues where required	1	3	-	-
PC3. follow business communication etiquette in all interactions and communicative formats (online, digital, and in-person)	1	4	-	-
PC4. document and share all relevant information with stakeholders in agreed formats and as per agreed timelines	2	3	-	-
<i>Work effectively</i>	6	13	-	-
PC5. identify and obtain clarity regarding organisational, team and own goals and targets	1	2	-	-
PC6. prioritise and plan work in order to achieve goals and targets	1	2	-	-
PC7. monitor own and team performance as per agreed plan	1	2	-	-
PC8. complete duties accurately, systematically and within required timeframes	1	2	-	-
PC9. express emotions appropriately at the workplace and manage own response to heightened emotions	1	2	-	-
PC10. maintain orderliness and cleanliness in the work area	1	3	-	-
<i>Maintain and enhance professional competence</i>	8	7	-	-
PC11. identify own strengths and weaknesses in relation to goals and targets	1	1	-	-
PC12. adapt self, service, or product to meet success criteria	1	1	-	-
PC13. seek and select opportunities for continuous professional development	1	1	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. formulate a professional development plan to enhance capabilities	2	1	-	-
PC15. build or contribute to the organizational knowledge base of cases, clients, issues, solutions, and innovations	1	1	-	-
PC16. examine developments and trends in field of work and their potential impact on work	1	1	-	-
PC17. take feedback from peers, supervisors and clients to improve own performance and practices	1	1	-	-
<i>Work in a disciplined and ethical manner</i>	11	16	-	-
PC18. perform tasks as per workplace standards, organisational policies and legislative requirements	2	2	-	-
PC19. display appropriate professional appearance at the workplace and adhere to the organisational dress code	1	2	-	-
PC20. demonstrate responsible and disciplined behaviour at the workplace such as punctuality; completing tasks as per given time and standards; demonstrating professional behaviour at all times, adopting environment- friendly practices, etc.	1	2	-	-
PC21. identify the cause of conflict and options for resolution with peers or escalate grievances and problems to appropriate authority as per procedure for conflict resolution	2	2	-	-
PC22. protect the rights of the client and organisation when delivering services	1	2	-	-
PC23. ensure services are delivered equally to all clients regardless of personal and cultural beliefs	1	2	-	-
PC24. operate within an agreed ethical code of practice and report unethical conduct to the appropriate authorities	2	2	-	-
PC25. follow organisational guidelines and legal requirements on disclosure and confidentiality	1	2	-	-
<i>Uphold social diversity at the workplace</i>	10	11	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC26. recognize and evaluate biased practices against underrepresented groups like women and persons with disabilities, in workplace systems and processes	2	2	-	-
PC27. identify and report discrimination and harassment based on gender, disability, or cultural difference at the workplace	2	2	-	-
PC28. use inclusive or neutral language and gestures in all interactions	2	2	-	-
PC29. respect the personal and professional space of others	2	2	-	-
PC30. access grievance redressal mechanisms as per legislations	2	3	-	-
NOS Total	40	60	-	-

National Occupational Standards (NOS) Parameters

NOS Code	ELE/N9905
NOS Name	Work effectively at the workplace
Sector	Electronics
Sub-Sector	Generic
Occupation	Generic - Organizational Behaviour
NSQF Level	4
Credits	TBD
Version	2.0
Last Reviewed Date	24/02/2022
Next Review Date	30/12/2026
NSQC Clearance Date	30/12/2021

ELE/N1002: Apply health and safety practices at the workplace

Description

This OS unit is about knowledge and practices relating to health, safety and security that candidates need to use in the workplace.

Scope

The scope covers the following :

- Deal with workplace hazards
- Apply fire safety practices
- Follow emergencies, rescue and first-aid procedures
- Effective waste management/recycling practices

Elements and Performance Criteria

Deal with workplace hazards

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

- PC1.** identify job-site hazards and possible causes of accident in the workplace
- PC2.** perform work complying to organizational safe working practices and observing hazard signs displayed on containers, equipment and in various work areas such as inside buildings, in open areas and public spaces, etc.
- PC3.** use appropriate personal protective equipment (PPE) for specific tasks and work conditions, contaminant (concentration w.r.t air) requirements and severity of hazard while conforming to the Indian/International standards
- PC4.** follow standard safety procedures while handling tool/ ,equipment, hazardous substances and while working in hazardous environments
- PC5.** dispose electronic waste (such as toxins; metals such as lead, cadmium, barium; flame retardant plastics, welding slag etc.) as per industry approved techniques
- PC6.** avoid damage of components due to negligence in electrostatic discharge (ESD) procedures
- PC7.** locate general health and safety equipment in the workplace such as fire extinguishers; first aid equipment; safety instruments, clothing and installations (fire exits, exhaust fans)
- PC8.** maintain appropriate posture while handling heavy objects
- PC9.** apply good housekeeping practices at all times

Apply fire safety practices

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

- PC10.** take preventive measures to prevent fire hazards
- PC11.**
 - use appropriate fire extinguishers for different types of fires
 - Types of fires: Class A: e.g. ordinary solid combustibles, such as wood, paper, cloth, plastic, charcoal, etc.; Class B: flammable liquids and gases, such as gasoline, propane, diesel fuel, tar, cooking oil, and similar substances; Class C: e.g. electrical equipment such as appliances, wiring, breaker panels, etc. (These categories of fires become Class A, B, and D fires when the electrical equipment that initiated the fire is no I
- PC12.** exhibit rescue and first-aid techniques in case of fire or electrocution

Follow emergencies, rescue and first-aid procedures

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

- PC13.** administer appropriate first aid to victims in case of bleeding, burns, choking, electric shock, poisoning etc.
- PC14.** administer first aid to victims in case of a heart attack or cardiac arrest due to electric shock,
- PC15.** participate regularly in emergency procedures such as raising alarm, safe/efficient, evacuation, correct means of taking shelter and escaping, correct assembly point, roll call, correct return to work
- PC16.** use correct method to move injured people and others during an emergency

Effective waste management/recycling practices

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

- PC17.** identify recyclable and non-recyclable, and hazardous waste generated
- PC18.** segregate waste into different categories
- PC19.** ensure disposal of non-recyclable waste appropriately
- PC20.** deposit non-recyclable and reusable material at identified location
- PC21.** follow processes specified for disposal of hazardous waste

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** importance of working in clean and safe work environment following safety practices and procedures
- KU2.** health and safety roles and responsibilities of relevant personnel within and outside the organisation
- KU3.** key internal and external sources of health and safety information
- KU4.** basic knowledge of electronic devices and related health risks
- KU5.** meaning of hazards and risks
- KU6.** various types of health and safety hazards commonly present in the work environment such as physical hazards, electrical hazards, chemical hazards, fire hazards, equipment related hazards, health hazards, etc.
- KU7.** methods of accident prevention
- KU8.** importance of using protective clothing/equipment while working
- KU9.** general principles for identifying and controlling health and safety risks
- KU10.** main hazards and preventive as well as control measures while working with different types of equipment
- KU11.** importance of carrying out electrical and non-electrical isolation to prevent hazards from loss of machine/system/process control
- KU12.** main hazards and preventive as well as control measures when working with electrical systems or using electrical equipment
- KU13.** forms and classifications of hazardous substances
- KU14.** safe working practices while working at various hazardous sites
- KU15.** prevention and control measures to reduce risks from exposure to hazardous substances
- KU16.** health effects associated with exposure to noise and vibration and the appropriate control measures

- KU17.** precautionary activities to prevent the fire accident
- KU18.** various causes of fire such as heating of metal, spontaneous ignition, sparking, electrical eating, loose fires (smoking, welding, etc.) chemical fires etc.
- KU19.** techniques of using the different fire extinguishers
- KU20.** different methods and material to extinguish fires
- KU21.** different materials used for extinguishing fire such as sand, water, foam, CO₂, dry powder
- KU22.** rescue techniques used during a fire hazard
- KU23.** various types of safety signs and their meaning
- KU24.** basic first aid treatment relevant to the common work place injuries e.g. shock, electrical shock, bleeding, breaks to bones, minor burns, resuscitation, poisoning, eye injuries
- KU25.** contents of written accident report
- KU26.** potential injuries and ill health associated with incorrect handling of tools and equipment
- KU27.** safe lifting and carrying practices
- KU28.** potential impact to a person who is moved incorrectly
- KU29.** personal safety, health and dignity issues relating to the movement of a person by others
- KU30.** ESD measures and 5S
- KU31.** efficient utilization and management of material and water
- KU32.** ways to recognize common electrical problems and practices of conserving electricity
- KU33.** usage of different colours of dustbins, categorization of waste into dry, wet, recyclable, nonrecyclable and items of single-use plastics
- KU34.** organization's procedure for minimizing waste
- KU35.** waste management and methods of waste disposal
- KU36.** common sources of pollution and ways to minimize it
- KU37.** names, contact information and location of people responsible for health and safety in the workplace
- KU38.** location of documents and equipment for health and safety compliance/practices in the workplace
- KU39.** safety notices, signs and instructions at workplace

Generic Skills (GS)

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

- GS1.** interpret general health and safety guidelines labels, charts, signages
- GS2.** read operation manuals
- GS3.** write health and safety compliance report
- GS4.** write an accident/incident report in local language or English
- GS5.** provide an emergency or safety incident brief to seniors or relevant authorities in a calm, clear and to-the-point manner
- GS6.** communicate general health and safety guidelines to colleagues/co-workers
- GS7.** communicate appropriately with co-workers in order to clarify instructions and other issues
- GS8.** act in case of any potential hazards observed in the work place

- GS9.** plan and organize their own work schedule, work area, tools, equipment in compliance with organizational policies for health, safety and security
- GS10.** take adequate measures to ensure the safety of clients and visitors at the workplace
- GS11.** identify immediate or temporary solutions to resolve delays
- GS12.** evaluate the work area for health and safety risks or hazards
- GS13.** use cause and effect relations to anticipate potential issues, problems and their solution in the work area related to safety
- GS14.** recognise emergency and potential emergency situations
- GS15.** protect self and others from a health and safety risk or hazard
- GS16.** communicate and collaborate to incorporate sustainable practices (greening) in workplace processes
- GS17.** record data on waste disposal at workplace

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Deal with workplace hazards</i>	20	31	-	-
PC1. identify job-site hazards and possible causes of accident in the workplace	2	3	-	-
PC2. perform work complying to organizational safe working practices and observing hazard signs displayed on containers, equipment and in various work areas such as inside buildings, in open areas and public spaces, etc.	3	4	-	-
PC3. use appropriate personal protective equipment (PPE) for specific tasks and work conditions, contaminant (concentration w.r.t air) requirements and severity of hazard while conforming to the Indian/International standards	3	4	-	-
PC4. follow standard safety procedures while handling tool/ ,equipment, hazardous substances and while working in hazardous environments	3	4	-	-
PC5. dispose electronic waste (such as toxins; metals such as lead, cadmium, barium; flame retardant plastics, welding slag etc.) as per industry approved techniques	2	4	-	-
PC6. avoid damage of components due to negligence in electrostatic discharge (ESD) procedures	2	3	-	-
PC7. locate general health and safety equipment in the workplace such as fire extinguishers; first aid equipment; safety instruments, clothing and installations (fire exits, exhaust fans)	2	3	-	-
PC8. maintain appropriate posture while handling heavy objects	1	3	-	-
PC9. apply good housekeeping practices at all times	2	3	-	-
<i>Apply fire safety practices</i>	4	9	-	-
PC10. take preventive measures to prevent fire hazards	2	3	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<p>PC11.</p> <ul style="list-style-type: none"> • use appropriate fire extinguishers for different types of fires • Types of fires: Class A: e.g. ordinary solid combustibles, such as wood, paper, cloth, plastic, charcoal, etc.; Class B: flammable liquids and gases, such as gasoline, propane, diesel fuel, tar, cooking oil, and similar substances; Class C: e.g. electrical equipment such as appliances, wiring, breaker panels, etc. (These categories of fires become Class A, B, and D fires when the electrical equipment that initiated the fire is no l 	1	3	-	-
<p>PC12. exhibit rescue and first-aid techniques in case of fire or electrocution</p>	1	3	-	-
<p><i>Follow emergencies, rescue and first-aid procedures</i></p>	6	13	-	-
<p>PC13. administer appropriate first aid to victims in case of bleeding, burns, choking, electric shock, poisoning etc.</p>	1	3	-	-
<p>PC14. administer first aid to victims in case of a heart attack or cardiac arrest due to electric shock,</p>	1	2	-	-
<p>PC15. participate regularly in emergency procedures such as raising alarm, safe/efficient, evacuation, correct means of taking shelter and escaping, correct assembly point, roll call, correct return to work</p>	2	4	-	-
<p>PC16. use correct method to move injured people and others during an emergency</p>	2	4	-	-
<p><i>Effective waste management/recycling practices</i></p>	5	12	-	-
<p>PC17. identify recyclable and non-recyclable, and hazardous waste generated</p>	1	3	-	-
<p>PC18. segregate waste into different categories</p>	1	2	-	-
<p>PC19. ensure disposal of non-recyclable waste appropriately</p>	1	2	-	-
<p>PC20. deposit non-recyclable and reusable material at identified location</p>	1	3	-	-
<p>PC21. follow processes specified for disposal of hazardous waste</p>	1	2	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
NOS Total	35	65	-	-

National Occupational Standards (NOS) Parameters

NOS Code	ELE/N1002
NOS Name	Apply health and safety practices at the workplace
Sector	Electronics
Sub-Sector	Generic
Occupation	Generic - Health Safety
NSQF Level	4
Credits	TBD
Version	3.0
Last Reviewed Date	24/02/2022
Next Review Date	24/02/2025
NSQC Clearance Date	24/02/2022

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3. 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 centre (as per assessment criteria below).
5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training centre based on this criterion.
6. To pass the Qualification Pack, every trainee should score a minimum of 70% of aggregate marks to successfully clear the assessment.
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
ELE/N3101.Engage with customer for service	40	50	-	10	100	15
ELE/N3118.Install the water purifier	40	50	-	10	100	20
ELE/N3119.Repair dysfunctional water purifier	40	50	-	10	100	20
ELE/N3120.Repair dysfunctional mixer/juicer/grinder	40	50	-	10	100	20
ELE/N3121.Repair dysfunctional microwave oven	40	50	-	10	100	15
ELE/N9905.Work effectively at the workplace	40	60	-	-	100	5
ELE/N1002.Apply health and safety practices at the workplace	35	65	-	-	100	5
Total	275	375	-	50	700	100

Acronyms

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

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.
Declarative Knowledge	Declarative knowledge refers to facts, concepts and principles that need to be known and/or understood in order to accomplish a task or to solve a problem.
Key Learning Outcome	Key learning outcome is the statement of what a learner needs to know, understand and be able to do in order to achieve the terminal outcomes. A set of key learning outcomes will make up the training outcomes. Training outcome is specified in terms of knowledge, understanding (theory) and skills (practical application).
OJT (M)	On-the-job training (Mandatory) trainees are mandated to complete specified hours of training on site
OJT (R)	On-the-job training (Recommended) trainees are recommended the specified hours of training on site
Procedural Knowledge	Procedural knowledge addresses how to do something, or how to perform a task. It is the ability to work, or produce a tangible work output by applying cognitive, affective or psychomotor skills.
Training Outcome	Training outcome is a statement of what a learner will know, understand and be able to do upon the completion of the training.
Terminal Outcome	Terminal outcome is a statement of what a learner will know, understand and be able to do upon the completion of a module. A set of terminal outcomes help to achieve the training outcome.