

## Qualification Pack



# LED Light Repair Technician

QP Code: PWD/ELE/Q9302

Version: 2.0

NSQF Level: 4

Skill Council for PwD || 501, City Centre, 5th Floor, 12/5, Plot 5, Sector 12, Dwaraka  
New Delhi 110076

## Qualification Pack

**Adoption of Job Role for PwD :** Job mapping is critical for skill training of PwD so that the livelihood opportunity looks at him/ her not because he/ she is having a disability but because of the skill. Mapping with a disability involves research with subject matter experts (SMEs) with a view on the industry requirement without compromising on performance outcome. In cases, mapping is also supported by the use of assistive tools/ technology.

### Expository Mapped Parameters

<b>Sector</b>	PwD
<b>Originating SSC</b>	Electronics
<b>Original QP code</b>	ELE/Q9302
<b>QP Version</b>	2.0
<b>Expository NSQF Level</b>	4
<b>Disability Type</b>	DeafSpeech and Language DisabilityHard of Hearing
<b>Disability Category</b>	Hearing impairment/Hearing Impaired
<b>Expository NSQF Approval Date</b>	05/01/2023
<b>Expository Reference code on NQR</b>	QG-04-PD-00125-2023-V1-SCPWD
<b>Expository NQR Version</b>	2
<b>Expository Next Review Date</b>	02/06/2025

Expository Code	Expository Version	Expository Name	Minimum Entry Criteria	Expository Linked On
E004	1.0	Speech and Hearing Impairment	10th Class (10th Class Pass with 2 years of experience or 10th Class Pass + ITI (1 year after Class 10th) with 1 year Experience or 10th Class Pass + ITI (2 years after Class 10th) or 10th Class Pass and pursuing continuous regular Schooling or 3 Year Diploma (After 10th) or 12th Class Pass with 6 months experience or Previous relevant Qualification of NSQF Level 3 with 2 years of experience *10th class with No experience OJT/internship of 8 months),	N/A



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### ELE/Q9302: LED Light Repair Technician

#### Brief Job Description

A LED Light Repair Technician is responsible for checking the non - functional LED light in a systematic manner to find out the fault, dismantles it, repairs the fault and reassemble the light to make it functional.

#### Personal Attributes

The job requires the individual to be self-motivated, inquisitive, goal oriented, analytical with attention to details, able to work as an individual and work for long hours in sitting position.

#### Applicable National Occupational Standards (NOS)

##### Compulsory NOS:

1. [ELE/N9302: Diagnose and repair fault in LED Light](#)
2. [ELE/N9905: Work effectively at the workplace](#)
3. [ELE/N1002: Apply health and safety practices at the workplace](#)

#### Qualification Pack (QP) Parameters

<b>Sector</b>	Electronics
<b>Sub-Sector</b>	Solar & LED
<b>Occupation</b>	LED Light Testing and Quality Assurance
<b>Country</b>	India
<b>NSQF Level</b>	4
<b>Credits</b>	NA
<b>Aligned to NCO/ISCO/ISIC Code</b>	NCO-2015/NIL

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<b>Minimum Educational Qualification &amp; Experience</b>	8th Class (pass + 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 Electrical Technician with 2 years of relevant Experience)
<b>Minimum Level of Education for Training in School</b>	8th Class
<b>Pre-Requisite License or Training</b>	NA
<b>Minimum Job Entry Age</b>	18 Years
<b>Last Reviewed On</b>	27/01/2022
<b>Next Review Date</b>	02/06/2025
<b>Deactivation Date</b>	02/06/2025
<b>NSQC Approval Date</b>	27/01/2022
<b>Version</b>	2.0
<b>Reference code on NQR</b>	QG-04-PD-00125-2023-V1-SCPWD
<b>NQR Version</b>	2

### Remarks:

NA

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### ELE/N9302: Diagnose and repair fault in LED Light

#### Description

This OS unit is about diagnosing the fault in the non-functional LED Light and mending it to make the light operational again.

#### Scope

The scope covers the following :

- Find and repair component-level fault
- Find and repair LED strip-level fault
- Achieve quality standards

#### Elements and Performance Criteria

##### *Finding and repairing component level fault*

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

- PC1.** identify loose, de-soldered wires and connections if the light does not switch on when connecting the non-functional LED Light with the AC source
- PC2.** do soldering of wires and make connections in case of loose, de-soldered wires and connections or dismantle the LED light if no loose, de-soldered wires and connections are found externally
- PC3.** check the LED light engine with DC supply as per the voltage / current requirements of the product and replace the LED light engine if it is found faulty
- PC4.** check the supply unit with AC supply / multimeter to find out the voltage / current output in case LED light Engine is not found defective
- PC5.** use multimeter to check the voltage / current output at different sections of the supply unit and find out the damaged section in case of no voltage / current output found in supply unit
- PC6.** use multimeter and individually check the components of the section where voltage output is found to be less than desired or no output
- PC7.** repair or replace the damaged components / SMPs as per the organisational standards and procedures
- PC8.** check output voltage/current of the supply unit again with multimeter and reassemble the LED light if repaired / replaced supply unit is found okay

##### *Finding and repairing LED strip level fault*

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

- PC9.** identify no. of non-functional / damaged LED strips from the array of LED strips in the light by connecting it with the AC source
- PC10.** remove the glass shell from the LED light and replace the burnt out / damaged LED strips
- PC11.** replace the glass shell on the LED Light and close it if all the strips are found operational

##### *Achieving quality standards*

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

- PC12.** correctly find the root cause of non-functional LED light and repair it as per organisational quality standards

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**PC13.** document the fault diagnosis and repair process as per SOP

### Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** companys policies on incentives, testing & repairing standards and personnel management
- KU2.** companys standard operating procedures and processes related to LED Luminary product testing and repair
- KU3.** importance of the individuals role in the workflow
- KU4.** reporting structure
- KU5.** safety and quality standards followed in the organization
- KU6.** various electronic & electrical components, materials and their specific properties & usages
- KU7.** basics of power electronics and its usages in lighting controls, or LED power supplies and LED drivers
- KU8.** special safety and handling precautions to be taken during LED luminary testing
- KU9.** Five s standards
- KU10.** how to use multimeter, tester, LCR meter and power analyzer

### Generic Skills (GS)

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

- GS1.** fill forms such as work orders, invoices, maintenance records
- GS2.** note problems on job sheet and details of work done
- GS3.** read warnings, instructions and other text material on product labels, components, etc.
- GS4.** read job sheets or work orders
- GS5.** read product and module serial numbers and interpret details such as make, date, availability
- GS6.** receive and ask for clarifications from supervisor on the job requirement
- GS7.** listen carefully to customer and interpret customers statement of symptoms
- GS8.** communicate in English or local language
- GS9.** customer about product, contractual issues such as warranty, cost of service and module replacement
- GS10.** take approval from supervisor in case the decision has to be made for exceptions
- GS11.** work with supervisor and co-workers to achieve smooth workflow
- GS12.** be polite, patient and courteous under all circumstances with all types of customers
- GS13.** analyse the complexity of work to determine if it can be successfully carried out or needs to be referred to a superior/specialist
- GS14.** seek inputs at assess the problems
- GS15.** improve work processes

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### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Finding and repairing component level fault</i>	<b>21</b>	<b>33</b>	-	-
<b>PC1.</b> identify loose, de-soldered wires and connections if the light does not switch on when connecting the non-functional LED Light with the AC source	3	5	-	-
<b>PC2.</b> do soldering of wires and make connections in case of loose, de-soldered wires and connections or dismantle the LED light if no loose, de-soldered wires and connections are found externally	4	7	-	-
<b>PC3.</b> check the LED light engine with DC supply as per the voltage / current requirements of the product and replace the LED light engine if it is found faulty	3	4	-	-
<b>PC4.</b> check the supply unit with AC supply / multimeter to find out the voltage / current output in case LED light Engine is not found defective	3	5	-	-
<b>PC5.</b> use multimeter to check the voltage / current output at different sections of the supply unit and find out the damaged section in case of no voltage / current output found in supply unit	2	3	-	-
<b>PC6.</b> use multimeter and individually check the components of the section where voltage output is found to be less than desired or no output	2	3	-	-
<b>PC7.</b> repair or replace the damaged components / SMPs as per the organisational standards and procedures	2	3	-	-
<b>PC8.</b> check output voltage/current of the supply unit again with multimeter and reassemble the LED light if repaired / replaced supply unit is found okay	2	3	-	-
<i>Finding and repairing LED strip level fault</i>	<b>13</b>	<b>17</b>	-	-
<b>PC9.</b> identify no. of non-functional / damaged LED strips from the array of LED strips in the light by connecting it with the AC source	5	6	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC10.</b> remove the glass shell from the LED light and replace the burnt out / damaged LED strips	4	6	-	-
<b>PC11.</b> replace the glass shell on the LED Light and close it if all the strips are found operational	4	5	-	-
<i>Achieving quality standards</i>	<b>6</b>	<b>10</b>	-	-
<b>PC12.</b> correctly find the root cause of non-functional LED light and repair it as per organisational quality standards	3	5	-	-
<b>PC13.</b> document the fault diagnosis and repair process as per SOP	3	5	-	-
<b>NOS Total</b>	<b>40</b>	<b>60</b>	-	-

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### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	ELE/N9302
<b>NOS Name</b>	Diagnose and repair fault in LED Light
<b>Sector</b>	Electronics
<b>Sub-Sector</b>	Solar & LED
<b>Occupation</b>	Testing-S&L
<b>NSQF Level</b>	4
<b>Credits</b>	TBD
<b>Version</b>	3.0
<b>Last Reviewed Date</b>	27/01/2022
<b>Next Review Date</b>	19/07/2023
<b>NSQ Clearance Date</b>	19/01/2023

## Qualification Pack

### 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

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**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

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- 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



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- GS17.** develop awareness and accountability for perspectives on gender, disabilities, and socio-cultural issues leading to discrimination, bias, or harassment at the workplace
- GS18.** maintain positive and effective relationships with colleagues and customers

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### Assessment Criteria

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

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



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

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### National Occupational Standards (NOS) Parameters

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

## Qualification Pack

### 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

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### *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

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- 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, CO<sub>2</sub>, 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

## Qualification Pack

- 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

## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Deal with workplace hazards</i>	<b>20</b>	<b>31</b>	-	-
<b>PC1.</b> identify job-site hazards and possible causes of accident in the workplace	2	3	-	-
<b>PC2.</b> 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	-	-
<b>PC3.</b> 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	-	-
<b>PC4.</b> follow standard safety procedures while handling tool/ ,equipment, hazardous substances and while working in hazardous environments	3	4	-	-
<b>PC5.</b> 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	-	-
<b>PC6.</b> avoid damage of components due to negligence in electrostatic discharge (ESD) procedures	2	3	-	-
<b>PC7.</b> 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	-	-
<b>PC8.</b> maintain appropriate posture while handling heavy objects	1	3	-	-
<b>PC9.</b> apply good housekeeping practices at all times	2	3	-	-
<i>Apply fire safety practices</i>	<b>4</b>	<b>9</b>	-	-
<b>PC10.</b> take preventive measures to prevent fire hazards	2	3	-	-

## Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC11.</b> <ul style="list-style-type: none"> <li>use appropriate fire extinguishers for different types of fires</li> <li>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</li> </ul>	1	3	-	-
<b>PC12.</b> exhibit rescue and first-aid techniques in case of fire or electrocution	1	3	-	-
<i>Follow emergencies, rescue and first-aid procedures</i>	<b>6</b>	<b>13</b>	-	-
<b>PC13.</b> administer appropriate first aid to victims in case of bleeding, burns, choking, electric shock, poisoning etc.	1	3	-	-
<b>PC14.</b> administer first aid to victims in case of a heart attack or cardiac arrest due to electric shock,	1	2	-	-
<b>PC15.</b> 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	2	4	-	-
<b>PC16.</b> use correct method to move injured people and others during an emergency	2	4	-	-
<i>Effective waste management/recycling practices</i>	<b>5</b>	<b>12</b>	-	-
<b>PC17.</b> identify recyclable and non-recyclable, and hazardous waste generated	1	3	-	-
<b>PC18.</b> segregate waste into different categories	1	2	-	-
<b>PC19.</b> ensure disposal of non-recyclable waste appropriately	1	2	-	-
<b>PC20.</b> deposit non-recyclable and reusable material at identified location	1	3	-	-
<b>PC21.</b> follow processes specified for disposal of hazardous waste	1	2	-	-



## Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>NOS Total</b>	<b>35</b>	<b>65</b>	-	-

## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	ELE/N1002
<b>NOS Name</b>	Apply health and safety practices at the workplace
<b>Sector</b>	Electronics
<b>Sub-Sector</b>	Generic
<b>Occupation</b>	Generic - Health Safety
<b>NSQF Level</b>	4
<b>Credits</b>	TBD
<b>Version</b>	3.0
<b>Last Reviewed Date</b>	24/02/2022
<b>Next Review Date</b>	29/03/2026
<b>NSQF Clearance Date</b>	29/03/2023

## 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.

## 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/N9302.Diagnose and repair fault in LED Light	40	60	-	-	100	50
ELE/N9905.Work effectively at the workplace	40	60	-	-	100	25
ELE/N1002.Apply health and safety practices at the workplace	35	65	-	-	100	25
<b>Total</b>	<b>115</b>	<b>185</b>	<b>-</b>	<b>-</b>	<b>300</b>	<b>100</b>

## Qualification Pack

### Acronyms

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

## Qualification Pack

### Glossary

<b>Sector</b>	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.
<b>Sub-sector</b>	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
<b>Occupation</b>	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
<b>Job role</b>	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
<b>Occupational Standards (OS)</b>	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.
<b>Performance Criteria (PC)</b>	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
<b>National Occupational Standards (NOS)</b>	NOS are occupational standards which apply uniquely in the Indian context.
<b>Qualifications Pack (QP)</b>	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.
<b>Unit Code</b>	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
<b>Unit Title</b>	Unit title gives a clear overall statement about what the incumbent should be able to do.
<b>Description</b>	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.
<b>Scope</b>	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.
<b>Knowledge and Understanding (KU)</b>	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.

## Qualification Pack

<b>Organisational Context</b>	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.
<b>Technical Knowledge</b>	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
<b>Core Skills/ Generic Skills (GS)</b>	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.
<b>Electives</b>	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.
<b>Options</b>	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.
<b>Sector</b>	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.
<b>Sub-sector</b>	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
<b>Occupation</b>	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
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<b>Performance Criteria (PC)</b>	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
<b>National Occupational Standard</b>	NOS are occupational standards which apply uniquely in the Indian context.
<b>Qualifications Pack (QP)</b>	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.

## Qualification Pack

<b>Unit Code</b>	Unit code is a unique identifier for an Occupational Standard, which is denoted by an N.
<b>Unit Title</b>	Unit title gives a clear overall statement about what the incumbent should be able to do.
<b>Description</b>	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.
<b>Scope</b>	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.
<b>Knowledge and Understanding</b>	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.
<b>Organisational Context</b>	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.
<b>Technical Knowledge</b>	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
<b>Core Skills/ Generic Skills (G)</b>	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today world. These skills are typically needed in any work environment in today 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.
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