Drone Service Technician

QP Code: ELE/Q7003

Version: 1.0

NSQF Level: 4

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ELE/Q7003: Drone Service Technician

Brief Job Description

A Drone Service Technician conducts routine maintenance, troubleshoots and repairs malfunctioning or defective Drone while ensuring adherence to standard working practices. The individuals in this job maintain and repair drones of varying sizes that are used in various applications such as taking aerial photos or videos, transporting goods, firefighting and emergency operations, power line inspections, clandestine inspections, etc.

Personal Attributes

The individual must have attention to detail, logical thinking, and ability to execute the repair and maintenance activity as per clients requirement. The individual should be good at following instructions and work collaboratively with diverse teams. S/he must stay abreast with technology changes, and demonstrate strong technical expertise. Also, s/he must exhibit good customer service attribute - courtesy, problem-solving, reliability, good decision-making skills, etc.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. ELE/N7005: Repair and maintain a Drone

2. ELE/N9905: Work effectively at the workplace

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

Qualification Pack (QP) Parameters

Sector	Electronics
Sub-Sector	E-Mobility and Battery
Occupation	After Sale Support-EM&B
Country	India
NSQF Level	4
Credits	NA
Aligned to NCO/ISCO/ISIC Code	NCO-2016/NIL

Minimum Educational Qualification & Experience	10th Class with 3 Years of experience in the relevant field OR Certificate-NSQF (Level-3 in the domain of Electronics / Electrical / Mechanical) OR Diploma (in Electrical or Electronics Engineering)) OR 12th Class/I.T.I (After 10th) with 1 Year of experience in the relevant field
Minimum Level of Education for Training in School	Not Applicable
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	30/12/2021
Next Review Date	30/12/2026
NSQC Approval Date	30/12/2021
Version	1.0
Reference code on NQR	2021/EHW/ESSC/04791
NQR Version	1.0

ELE/N7005: Repair and maintain a Drone

Description

This OS unit deals with how to repair a Drone.

Scope

The scope covers the following :

- Understanding the Drone related issues faced by the customer
- Performing repair and maintenance of the Drone
- Commissioning the Drone
- Reporting to superior

Elements and Performance Criteria

Understanding the Drone related issues faced by the customer

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

PC1.   collect information about the customer's issues

PC2.   select relevant troubleshooting-instruction sheet, tools, equipment and verified field replaceable parts based on SOPs and analysis of customer complaints

PC3.   perform preliminary check-up of the Drone

PC4.   evaluate the replacement or repair of modules on field or at the company's workshop

Performing repair and maintenance of the Drone

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

PC5.   review recommended practices for switching on the Drone and the remote controller

PC6.   review standard work practices to disassemble the defective components

PC7.   inspect the functional components of a drone thoroughly by connecting to an external power source, using multimeters, etc.

PC8.   identify electronic components that are malfunctioning and need to be repaired / replaced

PC9.   perform repair of the defective components as per company specified maintenance guidelines

PC10.   Install repaired / fresh electronic components using appropriate tools and equipment

PC11.   assemble the Drone components as per desirable industry practices

PC12.   assess that the Drone is working effectively post repair and maintenance

PC13.   dispose debris, leftover and defective parts as per standard operating procedure

Commissioning the Drone

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

PC14.   perform standard safety checks of the Drone post repair and maintenance

PC15.   perform a demo run of the Drone to ensure customer satisfaction

PC16.   communicate with the customer to provide product and maintenance related information

Reporting to superior

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

PC17. Inform on the workload and completion status

PC18. report work status through proper documentation as per organizational standards

PC19. intimate the problems that cannot be resolved at field level with reason

PC20. report 100% on time completion of field repair or hardware part replacement with reference to agreed target and time or reasons for not meeting target

PC21. prepare the feedback form on customer satisfaction level with respect to the product repair

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. organizational policies on incentives and personnel management

KU2. importance of the individual's role in the workflow

KU3. reporting structure followed in the organization

KU4. organisation's portfolio of products

KU5. oranisational policy on product's warranty and other terms and conditions

KU6. types and applications of various types of electronic components such as resistors, capacitors, coil, diode, transistor, integrated circuits (IC) etc.

KU7. basic principles governing AC/DC and electronic circuits

KU8. various types of Drones, their respective applications, electronic components and functioning

KU9. functionalities of various components of Drone such as fans, propellers, electric motors, camera system, GPS, etc.

KU10. manufacturer guidelines for starting and shutting down the drone safely

KU11. standard work practices for disassembling and assembling the Drone

KU12. troubleshooting methods for various types of Drones

KU13. inspection techniques and various checks for identification of faulty Drone components

KU14. various tests and their procedures for checking the Drones

KU15. usage of various tools for repairing the Drone such as multimeter, soldering gun etc.

KU16. techniques for repairing and replacing the faulty drone components

KU17. installation of various types of electronics components in drone

KU18. documentation performed during the entire process

KU19. necessary product information to be communicated to the customer while commissioning the drone

KU20. applicable safety and quality standards during the entire process

Generic Skills (GS)

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

GS1. write common words/signs and set phrases used in the work

GS2. prepare checklists, reports and fill out forms in local language or Hindi/English

GS3. measure various dimensions as per task requirements

GS4. perform arithmetic calculations of addition, subtraction, multiplication and division processes

GS5. read and interpret information (symbols, dimensions, terminology, dates etc.) given in local language or Hindi

GS6. state information, doubts and concerns about work related matters in local language or Hindi/English

GS7. participate in workplace conversations and meetings

GS8. communicate by telephone in local language or Hindi/English

GS9. spot discrepancies or errors and select the most efficient solution

GS10. plan one's daily tasks to achieve maximum productivity

GS11. establish priorities and deadlines in consultation with others and record them

GS12. be punctual and work as per agreed priorities

GS13. manage distractions and maintain workplace discipline

GS14. listen to customer's concerns and doubts carefully and address them

GS15. be courteous

GS16. establish workable solutions for problems in hand in consultation with others and record them

GS17. identify ways to increase productivity and reduce errors

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Understanding the Drone related issues faced by the customer	**8**	**18**	**-**	**-**
PC1. collect information about the customer's issues	2	4	-	-
PC2. select relevant troubleshooting-instruction sheet, tools, equipment and verified field replaceable parts based on SOPs and analysis of customer complaints	2	4	-	-
PC3. perform preliminary check-up of the Drone	2	5	-	-
PC4. evaluate the replacement or repair of modules on field or at the company's workshop	2	5	-	-
Performing repair and maintenance of the Drone	**11**	**30**	**-**	**-**
PC5. review recommended practices for switching on the Drone and the remote controller	1	4	-	-
PC6. review standard work practices to disassemble the defective components	1	3	-	-
PC7. inspect the functional components of a drone thoroughly by connecting to an external power source, using multimeters, etc.	1	3	-	-
PC8. identify electronic components that are malfunctioning and need to be repaired / replaced	2	3	-	-
PC9. perform repair of the defective components as per company specified maintenance guidelines	1	3	-	-
PC10. Install repaired / fresh electronic components using appropriate tools and equipment	1	3	-	-
PC11. assemble the Drone components as per desirable industry practices	1	4	-	-
PC12. assess that the Drone is working effectively post repair and maintenance	1	3	-	-
PC13. dispose debris, leftover and defective parts as per standard operating procedure	2	4	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Commissioning the Drone	**6**	**12**	**-**	**-**
PC14. perform standard safety checks of the Drone post repair and maintenance	2	4	-	-
PC15. perform a demo run of the Drone to ensure customer satisfaction	2	4	-	-
PC16. communicate with the customer to provide product and maintenance related information	2	4	-	-
Reporting to superior	**5**	**10**	**-**	**-**
PC17. Inform on the workload and completion status	1	2	-	-
PC18. report work status through proper documentation as per organizational standards	1	2	-	-
PC19. intimate the problems that cannot be resolved at field level with reason	1	2	-	-
PC20. report 100% on time completion of field repair or hardware part replacement with reference to agreed target and time or reasons for not meeting target	1	2	-	-
PC21. prepare the feedback form on customer satisfaction level with respect to the product repair	1	2	-	-
NOS Total	**30**	**70**	**-**	**-**

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	ELE/N7005
NOS Name	Repair and maintain a Drone
Sector	Electronics
Sub-Sector	E-Mobility and Battery
Occupation	After Sale Support-EM&B
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	30/12/2021
Next Review Date	30/12/2024
NSQC Clearance Date	30/12/2021

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

GS18. maintain positive and effective relationships with colleagues and customers

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Communicate effectively at the workplace	**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	-	-
Work effectively	**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	-	-
Maintain and enhance professional competence	**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	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. seek and select opportunities for continuous professional development	1	1	-	-
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	-	-
Work in a disciplined and ethical manner	**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	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC25. follow organisational guidelines and legal requirements on disclosure and confidentiality	1	2	-	-
Uphold social diversity at the workplace	**10**	**11**	**-**	**-**
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 l

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 handing 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
Deal with workplace hazards	**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	-	-
Apply fire safety practices	**4**	**9**	**-**	**-**
PC10. take preventive measures to prevent fire hazards	2	3	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
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 l	1	3	-	-
PC12. exhibit rescue and first-aid techniques in case of fire or electrocution	1	3	-	-
Follow emergencies, rescue and first-aid procedures	**6**	**13**	**-**	**-**
PC13. administer appropriate first aid to victims in case of bleeding, burns, choking, electric shock, poisoning etc.	1	3	-	-
PC14. administer first aid to victims in case of a heart attack or cardiac arrest due to electric shock,	1	2	-	-
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	2	4	-	-
PC16. use correct method to move injured people and others during an emergency	2	4	-	-
Effective waste management/recycling practices	**5**	**12**	**-**	**-**
PC17. identify recyclable and non-recyclable, and hazardous waste generated	1	3	-	-
PC18. segregate waste into different categories	1	2	-	-
PC19. ensure disposal of non-recyclable waste appropriately	1	2	-	-
PC20. deposit non-recyclable and reusable material at identified location	1	3	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC21. follow processes specified for disposal of hazardous waste	1	2	-	-
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	03/05/2026
NSQC Clearance Date	03/05/2023

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 the proportion of marks for Theory and Skills Practical for each PC.

2. The assessment for the theory part will be based on the 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 the 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 these criteria.

6. To pass the Qualification Pack assessment, 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/N7005.Repair and maintain a Drone	30	70	-	-	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
Total	**105**	**195**	**-**	**-**	**300**	**100**

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training
GPS	Global Positioning System
ESC	Electronic Speed Controller
ESD	Electrostatic Discharge
AC/DC	Alternating Current / Direct Current
PC	Performance Criteria
PwD	Persons with disability
UAV	Unmanned Aerial Vehicle
DGCA	Directorate General of Civil Aviation
ATC	Air Traffic Control
OEM	Original Equipment Manufacturer
PCB	Printed Circuit Board

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.