Electric Vehicle Maintenance Technician

QP Code: ASC/Q6809

Version: 1.0

NSQF Level: 4

Automotive Skills Development Council || 153, Gr Floor, Okhla Industrial Area, Phase - III, Leela Building
New Delhi - 110020

Contents

ASC/Q6809: Electric Vehicle Maintenance Technician

Brief Job Description

The individual performs maintenance of the electric vehicle (EV).

Personal Attributes

The person should be patient, organised, team-oriented and have the ability to work for long hours in adverse conditions. They should be keen observers and have an eye for detail and quality.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. ASC/N9803: Organize work and resources (Manufacturing)
2. ASC/N9802: Interact effectively with colleagues, customers and others
3. ASC/N9805: Interpret engineering drawing
4. ASC/N6816: Perform maintenance of electric vehicle (EV)

Qualification Pack (QP) Parameters

Sector	Automotive
Sub-Sector	Manufacturing
Occupation	Plant and Equipment Maintenance
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/3113.0102
Minimum Educational Qualification & Experience	8th Class + 2 years ITI with 2 years of relevant experience OR 10th Class pass with 2 years of relevant experience OR 10th Class + 2 years ITI

	OR 12th Class with 1 Year of experience OR Certificate-NSQF (Automotive Maintenance Assistant Level 3) with 2 Years of relevant experience
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	25/11/2021
Next Review Date	25/11/2024
NSQC Approval Date	25/11/2021
Version	1.0

ASC/N9803: Organize work and resources (Manufacturing)

Description

This NOS unit is about implementing safety, planning work, adopting sustainable practices for optimising use of resources

Scope

The scope covers the following :

- Maintain safe and secure working environment
- Health and hygiene
- Perform work as per quality standards
- Effective waste management practices
- Material/energy conservation practices

Elements and Performance Criteria

Maintain safe and secure working environment

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

PC1. identify hazardous activities and the possible causes of risks or accidents in the workplace

PC2. follow safe working practices while dealing with hazards to ensure safety of self and others

PC3. carry out routine check of the machine for identifying potential hazards

PC4. use appropriate protective clothing/equipment for specific tasks and work

PC5. follow safety hazards and preventive techniques during fire drill

PC6. report any identified breaches in health, safety and security policies and procedures to the designated person

Health and hygiene

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

PC7. ensure workstation and equipment are regularly clean and sanitized

PC8. clean hands with soap, alcohol-based sanitizer regularly

PC9. avoid contact with ill people and self-isolate in a similar situation

PC10. wear and dispose PPEs regularly and appropriately

PC11. report advanced hygiene and sanitation issues to appropriate authority

PC12. follow stress and anxiety management techniques

Perform work as per quality standards

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

PC13. ensure that work is accomplished as per the requirements within the specified timeline

PC14. ensure team goals are given preference over individual goals

Effective waste management practices

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

PC15. follow the fundamentals of 5S for waste management

PC16. segregate waste into different categories

PC17. follow processes specified for disposal of hazardous waste

PC18. identify recyclable, non-recyclable and hazardous waste

PC19. dispose non-recyclable, recyclable and reusable waste appropriately at identified location

Material/energy conservation practices

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

PC20. identify ways to optimize usage of material in various tasks/activities/processes

PC21. check for spills/leakages in various tasks/activities/processes

PC22. plug spills/leakages and escalate to appropriate authority if unable to rectify

PC23. check if the equipment/machine is functioning normally before commencing work and rectify wherever required

PC24. report malfunctioning (fumes/ sparks/emission/vibration/noise) and lapse in maintenance of equipment

PC25. ensure electrical equipment and appliances are properly connected and turned off when not in use

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. organisation procedures for health, safety and security, individual role and responsibilities in this context

KU2. the organisation's emergency procedures for different emergency situations and the importance of following the same

KU3. evacuation procedures for workers and visitors

KU4. how and when to report hazards as well as the limits of responsibility for dealing with hazards

KU5. potential hazards, risks and threats based on the nature of work

KU6. preventative and remedial actions to be taken in case of exposure to toxic material

KU7. various types of fire extinguisher

KU8. various types of safety signs and their meaning

KU9. appropriate first aid treatment relevant to different condition e.g. bleeding, minor burns, eye injuries etc.

KU10. relevant standards, procedures and policies related to 5S followed in the company

KU11. the various materials used and their storage norms

KU12. efficient utilisation of material and water

KU13. basics of electricity and prevalent energy efficient devices

KU14. common practices of conserving electricity

KU15. common sources and ways to minimize pollution

KU16. categorisation of waste into dry, wet, recyclable, non-recyclable and items of single-use plastics

KU17. usage of different colors of dustbins

KU18. waste management techniques

KU19. significance of greening

Generic Skills (GS)

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

GS1. read safety instructions/guidelines
GS2. modify work practices to improve them
GS3. ask for clarifications from superior about the job requirement
GS4. work with supervisors/team members to carry out work related tasks
GS5. complete tasks efficiently and accurately within stipulated time
GS6. inform/report to concerned person in case of any problem
GS7. make timely decisions for efficient utilization of resources
GS8. write reports such as accident report, in at least English/regional language
GS9. be punctual and utilize time efficiently

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Maintain safe and secure working environment	11	5	-	7
PC1. identify hazardous activities and the possible causes of risks or accidents in the workplace	2	1	-	2
PC2. follow safe working practices while dealing with hazards to ensure safety of self and others	2	-	-	1
PC3. carry out routine check of the machine for identifying potential hazards	2	1	-	1
PC4. use appropriate protective clothing/equipment for specific tasks and work	2	1	-	1
PC5. follow safety hazards and preventive techniques during fire drill	2	1	-	1
PC6. report any identified breaches in health, safety and security policies and procedures to the designated person	1	1	-	1
Health and hygiene	7	5	-	2
PC7. ensure workstation and equipment are regularly clean and sanitized	2	2	-	1
PC8. clean hands with soap, alcohol-based sanitizer regularly	1	1	-	1
PC9. avoid contact with ill people and self-isolate in a similar situation	1	-	-	-
PC10. wear and dispose PPEs regularly and appropriately	1	-	-	-
PC11. report advanced hygiene and sanitation issues to appropriate authority	1	1	-	-
PC12. follow stress and anxiety management techniques	1	1	-	-
Perform work as per quality standards	5	3	-	2
PC13. ensure that work is accomplished as per the requirements within the specified timeline	2	2	-	1

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. ensure team goals are given preference over individual goals	3	1	-	1
Effective waste management practices	15	10	-	4
PC15. follow the fundamentals of 5S for waste management	3	2	-	1
PC16. segregate waste into different categories	2	1	-	-
PC17. follow processes specified for disposal of hazardous waste	2	2	-	1
PC18. identify recyclable, non-recyclable and hazardous waste	4	2	-	1
PC19. dispose non-recyclable, recyclable and reusable waste appropriately at identified location	4	3	-	1
Material/energy conservation practices	12	7	-	5
PC20. identify ways to optimize usage of material in various tasks/activities/processes	2	1	-	1
PC21. check for spills/leakages in various tasks/activities/processes	2	1	-	1
PC22. plug spills/leakages and escalate to appropriate authority if unable to rectify	2	1	-	-
PC23. check if the equipment/machine is functioning normally before commencing work and rectify wherever required	2	2	-	1
PC24. report malfunctioning (fumes/ sparks/emission/vibration/noise) and lapse in maintenance of equipment	2	1	-	1
PC25. ensure electrical equipment and appliances are properly connected and turned off when not in use	2	1	-	1
NOS Total	**50**	**30**	**-**	**20**

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N9803
NOS Name	Organize work and resources (Manufacturing)
Sector	Automotive
Sub-Sector	Generic
Occupation	Generic
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	25/11/2021
Next Review Date	25/11/2024
NSQC Clearance Date	25/11/2021

ASC/N9802: Interact effectively with colleagues, customers and others

Description

This NOS unit is about communicating with customers and colleagues/superiors, either in own work group or in other work groups within organisation.

Scope

The scope covers the following :

- Communicate effectively with colleagues, customers and others
- Interact with supervisor or superior

Elements and Performance Criteria

Communicate effectively with colleagues, customers and others

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

PC1. maintain clear communication with colleagues, customers and others, wherever needed, through all means i.e. face-to-face, telephonic or written

PC2. adjust communication styles to reflect gender and persons with disability (PwD) sensitivity

PC3. work in a way that shows respect for colleagues and others

PC4. follow the organisation's policies and procedures while working in a team

PC5. respect personal space of colleagues and customers

Interact with supervisor or superior

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

PC6. identify work requirements by receiving instructions from reporting supervisor

PC7. escalate problems to supervisors that cannot be handled including repairs and maintenance of machine

PC8. report the completed work

PC9. rectify errors as per feedback

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. the importance of effective communication and establishing good working relationships with colleagues and supervisor

KU2. different methods of communication as per the circumstances

KU3. gender based concepts, issues and legislation

Generic Skills (GS)

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

GS1. read instructions/guidelines/procedures

GS2. listen effectively and orally communicate information
GS3. ask for clarification and advice from the concerned person
GS4. maintain positive and effective relationships with colleagues and customers
GS5. evaluate the possible solution(s) to the problem
GS6. deliver consistent and reliable service to customers
GS7. complete written work with attention to detail
GS8. check that the work meets customer requirements

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Communicate effectively with colleagues, customers and others	36	11	-	14
PC1. maintain clear communication with colleagues, customers and others, wherever needed, through all means i.e. face-to-face, telephonic or written	8	-	-	4
PC2. adjust communication styles to reflect gender and persons with disability (PwD) sensitivity	8	-	-	-
PC3. work in a way that shows respect for colleagues and others	7	4	-	3
PC4. follow the organisation's policies and procedures while working in a team	7	4	-	3
PC5. respect personal space of colleagues and customers	6	3	-	4
Interact with supervisor or superior	14	19	-	6
PC6. identify work requirements by receiving instructions from reporting supervisor	7	4	-	-
PC7. escalate problems to supervisors that cannot be handled including repairs and maintenance of machine	-	5	-	3
PC8. report the completed work	7	5	-	-
PC9. rectify errors as per feedback	-	5	-	3
NOS Total	**50**	**30**	**-**	**20**

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N9802
NOS Name	Interact effectively with colleagues, customers and others
Sector	Automotive
Sub-Sector	Generic
Occupation	Generic
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	25/11/2021
Next Review Date	25/11/2024
NSQC Clearance Date	25/11/2021

ASC/N9805: Interpret engineering drawing

Description

This NOS unit is about reading and interpreting all concepts, symbols, methods, views, etc. of engineering drawing.

Scope

The scope covers the following :

- Interpret information from various views, projection, 2D and 3D shapes
- Identify drawing standards and symbols
- Modification and storage of drawing

Elements and Performance Criteria

Interpret information from various views, projection, 2D and 3D shapes

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

PC1. interpret engineering drawing's uniqueness, dimensions and important features in 2D and 3D shapes

PC2. identify the difference between 2D and 3D shapes

PC3. explain difference between first angle projection and third angle projection in mechanical engineering drawing

PC4. interpret all the 3 axes (x, y and z axis) and geometrical shapes (cones, cylinder, sphere, cuboid, etc) on to a 2D and 3D projection

PC5. identify details of the machine component which are not clearly visible by interpreting section views

Identify drawing standards and symbols

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

PC6. interpret Geometric Dimensioning and Tolerencing (GD&T) symbols in the drawings

PC7. interpret symbols of Radius, controlled radius, spherical radius, diameter, spherical diameter, square, counterbore, spotface, depth, countersink, “by”, maximum dimension, minimum dimension, reference, dimension origin etc

PC8. identify the sequence of operations which enables the selection and prioritization of the datums

PC9. read and interpret information from Tolerance Zone boundaries for part features in terms of shape and size

Modification and storage of drawing

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

PC10. observe any modification, changes required in the drawing and communicate the same to the concerned team in the organization

PC11. store the drawings in an easily accessible place, avoiding damage from moisture, chemicals and fire

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. relevant organisational standards such as work standard, Standard Operating Procedure, quality process, maintenance standards etc. followed in the company
KU2. importance of cycle-time and required output as per work order and work instructions
KU3. drawing standards used by the company
KU4. use of drawing tools such as scales, compass, types of pencils, CAD and CAM software etc.
KU5. the basics of engineering drawing, orthographic projection, isometric projection, GD&T etc.
KU6. importance of various projections, views, symbols and dimensions of drawing
KU7. use of geometric shapes like lines, angles, circles, etc for interpreting the drawing

Generic Skills (GS)

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

GS1. read and interpret workplace related drawing
GS2. communicate the changes and requirements to supervisor by using relevant drawing terms and nomenclature
GS3. attentively listen and comprehend the information given by the supervisor/team members
GS4. write in English/regional language
GS5. recognise problem in drawing and take suitable action
GS6. analyse and apply the information gathered from observation, experience, reasoning or communication to act efficiently

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Interpret information from various views, projection, 2D and 3D shapes	21	11	-	10
PC1. interpret engineering drawing's uniqueness, dimensions and important features in 2D and 3D shapes	5	3	-	2
PC2. identify the difference between 2D and 3D shapes	4	2	-	2
PC3. explain difference between first angle projection and third angle projection in mechanical engineering drawing	4	-	-	2
PC4. interpret all the 3 axes (x, y and z axis) and geometrical shapes (cones, cylinder, sphere, cuboid, etc) on to a 2D and 3D projection	5	3	-	2
PC5. identify details of the machine component which are not clearly visible by interpreting section views	3	3	-	2
Identify drawing standards and symbols	23	15	-	8
PC6. interpret Geometric Dimensioning and Tolerencing (GD&T) symbols in the drawings	6	4	-	2
PC7. interpret symbols of Radius, controlled radius, spherical radius, diameter, spherical diameter, square, counterbore, spotface, depth, countersink, “by”, maximum dimension, minimum dimension, reference, dimension origin etc	6	4	-	2
PC8. identify the sequence of operations which enables the selection and prioritization of the datums	5	3	-	2
PC9. read and interpret information from Tolerance Zone boundaries for part features in terms of shape and size	6	4	-	2
Modification and storage of drawing	6	4	-	2
PC10. observe any modification, changes required in the drawing and communicate the same to the concerned team in the organization	3	2	-	1

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. store the drawings in an easily accessible place, avoiding damage from moisture, chemicals and fire	3	2	-	1
NOS Total	**50**	**30**	**-**	**20**

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N9805
NOS Name	Interpret engineering drawing
Sector	Automotive
Sub-Sector	Generic
Occupation	Generic
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	25/11/2021
Next Review Date	25/11/2024
NSQC Clearance Date	25/11/2021

ASC/N6816: Perform maintenance of electric vehicle (EV)

Description

This NOS unit is about carrying out operations during the preventive and breakdown maintenance of electric vehicle (EV) and documenting the operations carried out.

Scope

The scope covers the following :

- Plan for the maintenance activities
- Carrying out maintenance of the EV
- Conducting trials and documentation

Elements and Performance Criteria

Plan for the maintenance activities

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

PC1. identify the EV, its manufacturer's specifications and functioning from the user manual and vehicle drawings

PC2. read maintenance checklist and coordinate with the superior for confirming the maintenance tasks

PC3. read the maintenance schedule of EV and plan the time and schedule for conducting the maintenance

PC4. identify and arrange the tools, consumables and spare parts required during the task

Carrying out maintenance of the EV

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

PC5. follow safety practices during maintenance activities as per organisational SOP

PC6. perform basic health check-up of vehicle for defined performance parameters such as battery status, sensor calibration, actuators status, other electronic circuitry response etc. as specified in the maintenance checklist

PC7. dismantle the vehicle components and replace/change the electrical and electronic system spare parts and consumables of the vehicle as per the schedule

PC8. check the internal conditions of vehicle parts i.e. bearings, shafts, battery systems, motors, wiring harness and connectors, Electronic Control Unit (ECU), automatic lock system and other similar parts etc. to test its working status and expected conditions

PC9. conduct breakdown maintenance and check the systems of the vehicle to find out root cause of the problems like any leakage, short circuit in parts, breakage of wires and clamps, unusual contact of electrical wires with other parts etc. in the vehicle and discuss the same with senior if required

PC10. use electronic meters like Multimeter, Digital Storage Oscilloscope (DSO) and other software tools to identify any bugs in the vehicle system

PC11. record the readings of important parameters e.g. battery, other high voltage sections etc. with help of specialists/experts, as necessary

PC12. take immediate/permanent corrective actions after discussing with senior and clean, change or repair the vehicle components as per requirement

PC13. use recommended consumables, tools and equipment are utilized for service and repair of the EV as per Standard Operating Procedures (SOP)

PC14. dispose off waste materials such as failed parts/aggregates, as per organisation's policies

Conducting trials and documentation

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

PC15. assemble back all the components of the vehicle as per the drawing and prepare it for conducting the trials

PC16. fasten the components/subassemblies together by using specified screws, nuts and bolts

PC17. conduct trials of the vehicle and verify that specified parameters are attained with no abnormalities

PC18. change the maintenance due/status sticker on the vehicle

PC19. give suggestions to seniors for appropriate action based on findings in the breakdown maintenance actions to ensure that such breakdown will not repeat

PC20. record all repairs carried out, time taken and unplanned tasks encountered during the maintenance activities

PC21. ensure that all maintenance points are adequately considered and report the superiors (manufacturing and maintenance department) about maintenance activity done on the vehicle

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. company's maintenance standards and processes

KU2. different types of EVs manufactured by the company

KU3. different components/aggregates as well as auto component manufacturer's specifications for the same

KU4. basic technology used in and functioning of various systems and components of the vehicle such as batteries, body management system, telematics, brake system, air-conditioning systems, active & passive safety system, media and other systems (including electrical machines and devices used in electric vehicles such as: generator, Direct Current (DC)/Electric Charge (AC) and DC/DC converters, AC motor, DC motor, charging systems etc.)

KU5. interconnection of systems with each other and effect of one system on other system

KU6. fundamental terms, laws and principles of electricity used in EV such as: principles of storing electrical voltage, ohms law, voltage, current (AC/DC/HV), resistance, power, capacitance, electrostatics, magnetic, inductance, discrete electronic components, radio frequency, automotive communication protocols such as CAN, LIN, etc.

KU7. symbols, units and terms used in wiring diagrams associated with electrical/electric systems/components of the vehicle

KU8. legal regulations that need to be taken into account for handling electric vehicles in the workshop

KU9. how to read maintenance schedules and checklists recommended by the manufacturer

KU10. how to read vehicle layout or drawing and wiring diagrams to understand its structure

KU11. Standard Operating Procedures (SOP) recommended by OEM for using tools and equipment required

KU12. how to collect and store consumables, spare parts, tools, etc. as per organisational procedures

KU13. use of appropriate PPE, material handling equipment and tools for completing the maintenance tasks

KU14. corrective actions for common faults and failures in EV

KU15. documentation required regarding repair, maintenance and service performed

Generic Skills (GS)

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

GS1. read and interpret drawings, work instructions, USER manuals and process documents

GS2. communicate the maintenance activities requirements to the supervisor and co-workers

GS3. record operation and maintenance information related to equipment in English/regional language

GS4. recognise a workplace problem and take suitable action

GS5. analyse and apply the information gathered from observation, experience, reasoning or communication to act efficiently

GS6. plan and organise work as per the work requirements

GS7. complete the assigned tasks as per schedule

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Plan for the maintenance activities	6	8	-	7
PC1. identify the EV, its manufacturer's specifications and functioning from the user manual and vehicle drawings	2	2	-	1
PC2. read maintenance checklist and coordinate with the superior for confirming the maintenance tasks	2	2	-	2
PC3. read the maintenance schedule of EV and plan the time and schedule for conducting the maintenance	2	2	-	2
PC4. identify and arrange the tools, consumables and spare parts required during the task	-	2	-	2
Carrying out maintenance of the EV	9	20	-	9
PC5. follow safety practices during maintenance activities as per organisational SOP	-	2	-	2
PC6. perform basic health check-up of vehicle for defined performance parameters such as battery status, sensor calibration, actuators status, other electronic circuitry response etc. as specified in the maintenance checklist	-	2	-	2
PC7. dismantle the vehicle components and replace/change the electrical and electronic system spare parts and consumables of the vehicle as per the schedule	-	2	-	1
PC8. check the internal conditions of vehicle parts i.e. bearings, shafts, battery systems, motors, wiring harness and connectors, Electronic Control Unit (ECU), automatic lock system and other similar parts etc. to test its working status and expected conditions	2	2	-	2
PC9. conduct breakdown maintenance and check the systems of the vehicle to find out root cause of the problems like any leakage, short circuit in parts, breakage of wires and clamps, unusual contact of electrical wires with other parts etc. in the vehicle and discuss the same with senior if required	-	2	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. use electronic meters like Multimeter, Digital Storage Oscilloscope (DSO) and other software tools to identify any bugs in the vehicle system	-	2	-	-
PC11. record the readings of important parameters e.g. battery, other high voltage sections etc. with help of specialists/experts, as necessary	2	2	-	2
PC12. take immediate/permanent corrective actions after discussing with senior and clean, change or repair the vehicle components as per requirement	2	2	-	-
PC13. use recommended consumables, tools and equipment are utilized for service and repair of the EV as per Standard Operating Procedures (SOP)	2	2	-	-
PC14. dispose off waste materials such as failed parts/aggregates, as per organisation's policies	1	2	-	-
Conducting trials and documentation	15	22	-	4
PC15. assemble back all the components of the vehicle as per the drawing and prepare it for conducting the trials	1	2	-	-
PC16. fasten the components/subassemblies together by using specified screws, nuts and bolts	-	2	-	-
PC17. conduct trials of the vehicle and verify that specified parameters are attained with no abnormalities	2	2	-	-
PC18. change the maintenance due/status sticker on the vehicle	2	2	-	2
PC19. give suggestions to seniors for appropriate action based on findings in the breakdown maintenance actions to ensure that such breakdown will not repeat	2	2	-	-
PC20. record all repairs carried out, time taken and unplanned tasks encountered during the maintenance activities	6	6	-	-
PC21. ensure that all maintenance points are adequately considered and report the superiors (manufacturing and maintenance department) about maintenance activity done on the vehicle	2	6	-	2

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
NOS Total	30	50	-	20

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N6816
NOS Name	Perform maintenance of electric vehicle (EV)
Sector	Automotive
Sub-Sector	Manufacturing
Occupation	Plant and Equipment Maintenance
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	25/11/2021
Next Review Date	25/11/2024
NSQC Clearance Date	25/11/2021

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 center (as per assessment criteria below).

5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training center based on these criteria.

6. 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
ASC/N9803.Organize work and resources (Manufacturing)	50	30	-	20	100	10
ASC/N9802.Interact effectively with colleagues, customers and others	50	30	-	20	100	10
ASC/N9805.Interpret engineering drawing	50	30	-	20	100	5
ASC/N6816.Perform maintenance of electric vehicle (EV)	30	50	-	20	100	75
Total	**180**	**140**	**-**	**80**	**400**	**100**

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training
PPE	Personal Protective Equipment
PwD	Person with Disability
SOP	Standard Operating Practices
GD&T	Geometric Dimensioning & Tolerancing
CAD	Computer-Aided Drafting
CAM	Computer-Aided Manufacturing

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.