सत्यमेव जयते
GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP

Qualification Pack

Electric Vehicle Service Lead Technician

QP Code: ASC/Q1424

Version: 1.0

NSQF Level: 5

Automotive Skills Development Council || 153, GF, Okhla Industrial Area, Phase 3
New Delhi 110020

Contents

ASC/Q1424: Electric Vehicle Service Lead Technician

Brief Job Description

The individual in this job is responsible for diagnosis and specialized repairs of mechanical, electrical and electronic faults in electric vehicles.

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/N9813: Manage work and resources (Service)
2. ASC/N9812: Interact effectively with team, customers and others
3. ASC/N1435: Carry out diagnosis of electric vehicle for repair requirements
4. ASC/N1436: Carry out service, repair and overhauling of mechanical aggregates in vehicle
5. ASC/N1437: Carry out service, repair and overhauling of electrical and electronic systems within an aggregate in the vehicle

Qualification Pack (QP) Parameters

Sector	Automotive
Sub-Sector	Automotive Vehicle Service
Occupation	Technical Service & Repair
Country	India
NSQF Level	5
Aligned to NCO/ISCO/ISIC Code	NCO-2015/3115.0602

Minimum Educational Qualification & Experience	10th Class + 2 years I.T.I (Mechanic Auto Electrical and Electronics/Diesel Mechanic/ Mechanic Motor Vehicle (MMV)) with 2 years relevant experience OR 12th Class with 4 Years of relevant experience OR 3 years Diploma from recognised body (Mechanical/Electrical/Electronics/Automobile) after Class 12th OR Certificate-NSQF (Four Wheeler Service Technician/Automotive Electrician Level 4) with 2 Years of experience in Automotive Service
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	LMV Driving Licence
Minimum Job Entry Age	18 Years
Last Reviewed On	29/01/2021
Next Review Date	29/01/2026
NSQC Approval Date	29/01/2021
Version	1.0
Reference code on NQR	2021/AUT/ASDC/04092
NQR Version	1

ASC/N9801: Manage work and resources

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
- Ensure work as per quality standards
- Material/energy/electricity conservation practices
- Effective waste management/recycling practices
- Ensure a healthy and hygienic workplace

Elements and Performance Criteria

Maintain safe and secure working environment

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

PC1. ensure that the team complies with organisation's health, safety, security policies and procedures

PC2. identify the risks and hazards associated with work activities, their causes and prevention as per organisation's policy

PC3. encourage team to report any identified breaches in health, safety, and security policies and procedures to the designated person

Ensure work as per quality standards

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

PC4. ensure work area is kept clean and tidy

PC5. identify individual work requirements and provide necessary instructions to the team

PC6. ensure the team works as per the assigned and agreed requirements

PC7. identify work which fails the requirements, specified quality standards and ensure timely corrective action is taken

PC8. implement ways and guide the team to manage time, resources and cost effectively

PC9. train the team on skill level advancement to develop expertise in their work

PC10. ensure that the team understands accountability for timely completion of tasks

PC11. analyse and validate the problem accurately and communicate different possible solutions to the problem

Material/energy/electricity conservation practices

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

PC12. identify ways to optimize usage of electricity/other source of energy and material including water in various tasks/activities/processes

PC13. ensure that the team uses resources in a responsible manner

PC14. ensure that the team periodically checks for spills/leakages around the work area and take corrective actions or escalate to appropriate authority if unable to rectify

PC15. supervise team to carry out routine cleaning of tools, machine and equipment

PC16. ensure that the team periodically checks if the equipment/machines are maintained and functioning normally before commencing work and take corrective action wherever required

Effective waste management/recycling practices

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

PC17. identify recyclable, non-recyclable and hazardous waste generated

PC18. ensure the team segregates waste into different categories

PC19. ensure proper disposal of non-recyclable waste

PC20. ensure recyclable and reusable material is deposited at identified location

PC21. ensure the team follows processes specified for disposal of hazardous waste

Ensure a healthy and hygienic workplace

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

PC22. ensure workplace, equipment, restrooms etc. are sanitized regularly

PC23. promote awareness about hygiene and sanitation regulations

PC24. check availability of running water, hand wash and alcohol-based sanitizers at workplace

PC25. support employees to cope with stress, anxiety etc.

PC26. wear and dispose PPEs regularly and appropriately

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. different types of health and safety hazards that can be found in the workplace, risks and threats based on the nature of work

KU2. company defined workplace hazards and rules/regulation for maintaining health, safety and security at workplace

KU3. breaches in health, safety and security as well as procedures to report the same

KU4. workshop layout with electrical, hydraulic and thermal equipment used

KU5. the organisation's emergency procedures for different emergency situations and the importance of following the same

KU6. ways of time and cost management

KU7. ways to manage efficient utilisation of energy, material and water in the process

KU8. ways to recognize common electrical problems and common practices of conserving electricity

KU9. usage of different colours of dustbins and categorization of waste into dry, wet, recyclable, non-recyclable and items of single-use plastics

KU10. organisations procedures for minimizing waste

KU11. waste management and methods of waste disposal

KU12. common sources of pollution and ways to minimize it

KU13. different ways for skill level advancement to develop expertise

KU14. key performance indicators for the new tasks
KU15. timelines and goals set by the manager
KU16. importance of quality and timely delivery of the product/service
KU17. organisation's policies to maintain personal health and hygiene at workplace
KU18. significance of greening

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. complete written work with attention to detail
GS7. modify work practices to improve them
GS8. work with supervisors/team members to carry out work related tasks
GS9. complete tasks efficiently and accurately within stipulated time
GS10. make timely decisions for efficient utilization of resources
GS11. be punctual and utilize time
GS12. evaluate strategies to maintain, enhance or reduce the intensity of heightened emotional response

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Maintain safe and secure working environment	7	5	-	4
PC1. ensure that the team complies with organisation's health, safety, security policies and procedures	2	2	-	1
PC2. identify the risks and hazards associated with work activities, their causes and prevention as per organisation's policy	3	2	-	2
PC3. encourage team to report any identified breaches in health, safety, and security policies and procedures to the designated person	2	1	-	1
Ensure work as per quality standards	15	8	-	5
PC4. ensure work area is kept clean and tidy	2	1	-	-
PC5. identify individual work requirements and provide necessary instructions to the team	2	1	-	1
PC6. ensure the team works as per the assigned and agreed requirements	1	1	-	-
PC7. identify work which fails the requirements, specified quality standards and ensure timely corrective action is taken	3	2	-	2
PC8. implement ways and guide the team to manage time, resources and cost effectively	2	-	-	-
PC9. train the team on skill level advancement to develop expertise in their work	2	1	-	1
PC10. ensure that the team understands accountability for timely completion of tasks	2	-	-	-
PC11. analyse and validate the problem accurately and communicate different possible solutions to the problem	1	2	-	1
Material/energy/electricity conservation practices	10	6	-	4

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. identify ways to optimize usage of electricity/other source of energy and material including water in various tasks/activities/processes	2	2	-	2
PC13. ensure that the team uses resources in a responsible manner	2	1	-	-
PC14. ensure that the team periodically checks for spills/leakages around the work area and take corrective actions or escalate to appropriate authority if unable to rectify	2	1	-	1
PC15. supervise team to carry out routine cleaning of tools, machine and equipment	2	1	-	-
PC16. ensure that the team periodically checks if the equipment/machines are maintained and functioning normally before commencing work and take corrective action wherever required	2	1	-	1
Effective waste management/recycling practices	10	6	-	4
PC17. identify recyclable, non-recyclable and hazardous waste generated	2	2	-	1
PC18. ensure the team segregates waste into different categories	2	1	-	1
PC19. ensure proper disposal of non-recyclable waste	2	1	-	-
PC20. ensure recyclable and reusable material is deposited at identified location	2	1	-	1
PC21. ensure the team follows processes specified for disposal of hazardous waste	2	1	-	1
Ensure a healthy and hygienic workplace	8	5	-	3
PC22. ensure workplace, equipment, restrooms etc. are sanitized regularly	2	1	-	-
PC23. promote awareness about hygiene and sanitation regulations	2	1	-	1
PC24. check availability of running water, hand wash and alcohol-based sanitizers at workplace	1	1	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC25. support employees to cope with stress, anxiety etc.	1	1	-	1
PC26. wear and dispose PPEs regularly and appropriately	2	1	-	1
NOS Total	**50**	**30**	**-**	**20**

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N9801
NOS Name	Manage work and resources
Sector	Automotive
Sub-Sector	Generic
Occupation	Generic
NSQF Level	5
Credits	TBD
Version	1.0
Last Reviewed Date	29/01/2021
Next Review Date	29/01/2026
NSQC Clearance Date	29/01/2021

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

Description

This unit is about communicating with team members, superior and others.

Scope

The scope covers the following :

- Communicate effectively with team members
- Interact with superiors
- Respect gender and ability differences

Elements and Performance Criteria

Communicate effectively with team members

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

PC1. implement ways to share information with team members in line with organisational requirements

PC2. ensure that work requirements are clearly communicated to the team members through all means including face-to-face, telephonic and written

PC3. manage and co-ordinate with team members to integrate work as per requirements

PC4. work in a way that show respect for all team members and customers

PC5. carry out commitments made to team members and let them know in good time if there is any discrepancy with reasons

PC6. resolve conflicts within the team members at work to achieve smooth workflow

PC7. guide the team members to follow the organisation's policies and procedures

PC8. ensure team goals are given preference over individual goals

PC9. respect personal space of colleagues and customers

Interact with superiors

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

PC10. report progress on job allocated and team performance to the superiors

PC11. escalate problems to superiors that cannot be handled

PC12. train the team members to report completed work and receive feedback on work done

PC13. encourage team members to rectify errors as per feedback and minimize mistakes in future

Respect gender and ability differences

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

PC14. ensure team shows sensitivity towards all genders and PwD

PC15. adjust communication styles to reflect gender sensitivity and sensitivity towards person with disability

PC16. help PwD team members to overcome the challenges, if asked

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 team members and superiors
KU2. different methods of communication as per the circumstances
KU3. gender based concepts, issues and legislation
KU4. organisation standards and guidelines to be followed for PwD
KU5. rights and duties at workplace with respect to PwD
KU6. organisation policies and procedures pertaining to written and verbal communication

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. work with supervisors/team members to carry out work related tasks
GS4. complete tasks efficiently and accurately within stipulated time
GS5. make timely decisions for efficient utilization of resources
GS6. read instructions/guidelines/procedures
GS7. write in English/any one language

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Communicate effectively with team members	20	14	-	8
PC1. implement ways to share information with team members in line with organisational requirements	2	2	-	-
PC2. ensure that work requirements are clearly communicated to the team members through all means including face-to-face, telephonic and written	2	2	-	2
PC3. manage and co-ordinate with team members to integrate work as per requirements	2	1	-	2
PC4. work in a way that show respect for all team members and customers	3	1	-	2
PC5. carry out commitments made to team members and let them know in good time if there is any discrepancy with reasons	2	2	-	-
PC6. resolve conflicts within the team members at work to achieve smooth workflow	3	2	-	-
PC7. guide the team members to follow the organisation's policies and procedures	2	1	-	-
PC8. ensure team goals are given preference over individual goals	2	1	-	-
PC9. respect personal space of colleagues and customers	2	2	-	2
Interact with superiors	18	10	-	7
PC10. report progress on job allocated and team performance to the superiors	4	3	-	2
PC11. escalate problems to superiors that cannot be handled	4	2	-	1
PC12. train the team members to report completed work and receive feedback on work done	5	2	-	2

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. encourage team members to rectify errors as per feedback and minimize mistakes in future	5	3	-	2
Respect gender and ability differences	12	6	-	5
PC14. ensure team shows sensitivity towards all genders and PwD	4	2	-	2
PC15. adjust communication styles to reflect gender sensitivity and sensitivity towards person with disability	4	2	-	2
PC16. help PwD team members to overcome the challenges, if asked	4	2	-	1
NOS Total	**50**	**30**	**-**	**20**

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N9802
NOS Name	Interact effectively with team, customers and others
Sector	Automotive
Sub-Sector	Generic
Occupation	Generic
NSQF Level	5
Credits	TBD
Version	1.0
Last Reviewed Date	29/01/2021
Next Review Date	29/01/2026
NSQC Clearance Date	29/01/2021

ASC/N1435: Carry out diagnosis of electric vehicle for repair requirements

Description

This NOS unit is about diagnosing the mechanical and electrical/electronic aggregates in an electric vehicle and proposing repair to be carried out.

Scope

The scope covers the following :

- Inspect the vehicle and identify/validate faults
- Prepare to perform diagnostic tests
- Perform tests to identify the root cause of fault
- Conclude the repair solution for the fault

Elements and Performance Criteria

Inspect the vehicle and identify/validate faults

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

PC1. review the job card, obtain required information from customer/service advisor to assess service and repair requirements

PC2. identify the auto components related to the various aggregates in the vehicle

PC3. check the functioning of vehicle systems such as lighting system, air conditioning system etc.

PC4. conduct test drive to check vehicle performance and identify/validate the faults

PC5. conduct visual inspection of the vehicle to identify defects in HV (High Voltage) components

PC6. assess mechanical components/aggregates such as brake pad/shoe, wheel cylinder, mountings, bushes, control arms etc. of the vehicle for any external impact/bend/leak/incorrect level/wear & tear

PC7. determine the precise location of faults in vehicle systems

Prepare to perform diagnostic tests

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

PC8. ensure no HV activity is being conducted around workstation prior to commencement of work

PC9. prepare the vehicle according to nature of job to be performed: general and mechanical job on the vehicle/electrical work in non-live state/troubleshoot and replace parts in live state of HV system

PC10. mark the vehicle and safeguard the working area during electrical work

PC11. collect workshop tools/measuring device/equipment required for fault diagnosis in vehicle systems and check their condition/calibration

PC12. report the malfunctions if any, in the tools/equipment to the person concerned for rectification

Perform tests to identify the root cause of fault

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

PC13. take precautions to avoid damage to the vehicle and its components during diagnosis or troubleshooting the faults

PC14. use checklists and OEM Standard Operating Procedures (SOPs) to understand if the fault is because of improper charging, loose/poor contacts of pins in wiring harness connectors and their connection, improper driving style etc.

PC15. select and apply the appropriate device/equipment to make inspection and diagnose deficiencies/faults in various systems such as Body management systems, Braking and stability control systems, Drive line systems, Battery management system, Telematics system, etc.

PC16. use manufacturer's and component supplier's specifications to identify duplicate or defective component/parts which cannot be detected during visual inspection

PC17. follow SOP set out for troubleshooting and perform tests using various mechanical, electrical/electronic measuring devices/tester/diagnostic tools/software to identify/isolate a fault

PC18. perform diagnostic task on the HV system as per following stages: general and mechanical tasks on the vehicle which do not require isolation of the HV systems, electrical work in non-live state of the HV systems, troubleshoot and replace parts in live state of the HV system

PC19. diagnose indirect faults if any, in vehicle's mechanical, electrical and electronic systems as per OEM SOP

PC20. report the malfunctions in the vehicle where solution is not available or in case of new premature failures, to the concerned person along with preliminary diagnostic details

PC21. dismantle and reassemble aggregates of a vehicle for fault diagnosis

Conclude the repair solution for the fault

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

PC22. maintain the documentation related to inspections and troubleshooting performed on the vehicle

PC23. interpret results as required

PC24. compare results of diagnostic inspections/tests with vehicle specifications and regulatory requirements

PC25. validate the options for repair or replacement

PC26. prepare final proposal regarding repair or replacement requirements with justification

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. the automotive industry in India, workshop structure and role and responsibilities of different people in the workshop

KU2. SOP for receiving vehicles, opening job card, allocation of work, invoicing, vehicle delivery, handling complaints etc

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, DC/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, and radio frequency (automotive digital computers, automotive communication protocols such as CAN, LIN, etc.)

KU7. use of relevant measuring device/equipment and interpretation of all relevant mathematical calculations

KU8. various electrical and electronic signals such as electrical inputs, outputs, voltage, pulse-width modulation, digital signal (including infra red and fiber optics) etc.

KU9. symbols, units and terms used in wiring diagrams associated with electrical/electric systems/components of the vehicle

KU10. how to use computer, on-line application and OEM technical information/assistance portals

KU11. various sources of information available for assessing service and repair requirements of the vehicle including diagnostic displays, visual inspections, test drives, vehicle/equipment manufacturer specifications, and tolerance limits of components

KU12. typical symptoms of common faults and failures in vehicle mechanical, electrical and electronic systems

KU13. safety, health and environmental policies and regulations for the work place as well as for automotive trade in general

KU14. Standard Operating Procedures (SOPs) of the organization/ dealership for inspection and diagnosis of faults in a vehicle as prescribed by the OEM/components manufacturer

KU15. how to work on the HV systems which do not require isolation, troubleshooting and replacing parts on the active HV system

KU16. SOP recommended by OEM for using tools/equipment for diagnosis or troubleshooting such as special service tools, measuring instrument, volt meters, ammeters, ohmmeters, battery tester, dedicated and computer based diagnostic equipment, oscilloscopes etc.

KU17. different types of errors or defects in the tools/equipment

KU18. documentation requirements for each procedure carried out as part of roles and responsibilities as specified by OEM/ auto component manufacturer

KU19. organizational/professional code of ethics and standards of practice

KU20. electrical hazards, protective measures and first aid: in case of electric shock, electrical arc in public grid or in an electrical car, impact of electric current/arc, secondary accidents

KU21. five safety rules for electrical work on HV systems before starting the work i.e. isolate, safeguard reconnection, verify the non-live state, earth or short-circuit and shroud or safeguard adjacent live parts

KU22. safety requirements recommended by the OEM for equipment /vehicle components during diagnosis, troubleshooting and root cause analysis on various aggregates

KU23. legal regulations that need to be taken into account for handling electric vehicles in the workshop

KU24. Occupational Safety and Health (OSH) measures required for working on electric vehicle

Generic Skills (GS)

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

GS1. read and interpret workplace related documentation

GS2. communicate using terms, names, grades and other nomenclature pertaining to the automotive trade

GS3. analyse and apply the information gathered from observation, experience, reasoning or communication to act efficiently

GS4. identify potential workplace problem and take suitable action

GS5. read various sources of information available for assessing service and repair requirements

GS6. write in English/regional language

GS7. read policies and regulations pertinent to the job, including OEM guidelines, Health and Safety instructions etc. while working on the Electric Vehicle and its aggregates

GS8. communicate effectively at the workplace

GS9. plan work according to the required schedule and location

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Inspect the vehicle and identify/validate faults	5	10	-	5
PC1. review the job card, obtain required information from customer/service advisor to assess service and repair requirements	-	1	-	-
PC2. identify the auto components related to the various aggregates in the vehicle	1	1	-	1
PC3. check the functioning of vehicle systems such as lighting system, air conditioning system etc.	2	1	-	1
PC4. conduct test drive to check vehicle performance and identify/validate the faults	-	2	-	-
PC5. conduct visual inspection of the vehicle to identify defects in HV (High Voltage) components	-	2	-	1
PC6. assess mechanical components/aggregates such as brake pad/shoe, wheel cylinder, mountings, bushes, control arms etc. of the vehicle for any external impact/bend/leak/incorrect level/wear & tear	-	2	-	-
PC7. determine the precise location of faults in vehicle systems	2	1	-	2
Prepare to perform diagnostic tests	5	10	-	4
PC8. ensure no HV activity is being conducted around workstation prior to commencement of work	1	2	-	1
PC9. prepare the vehicle according to nature of job to be performed: general and mechanical job on the vehicle/electrical work in non-live state/troubleshoot and replace parts in live state of HV system	1	2	-	2
PC10. mark the vehicle and safeguard the working area during electrical work	-	2	-	-
PC11. collect workshop tools/measuring device/equipment required for fault diagnosis in vehicle systems and check their condition/calibration	2	2	-	1

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. report the malfunctions if any, in the tools/equipment to the person concerned for rectification	1	2	-	-
Perform tests to identify the root cause of fault	15	20	-	7
PC13. take precautions to avoid damage to the vehicle and its components during diagnosis or troubleshooting the faults	2	1	-	1
PC14. use checklists and OEM Standard Operating Procedures (SOPs) to understand if the fault is because of improper charging, loose/poor contacts of pins in wiring harness connectors and their connection, improper driving style etc.	2	2	-	-
PC15. select and apply the appropriate device/equipment to make inspection and diagnose deficiencies/faults in various systems such as Body management systems, Braking and stability control systems, Drive line systems, Battery management system, Telematics system, etc.	2	3	-	2
PC16. use manufacturer's and component supplier's specifications to identify duplicate or defective component/parts which cannot be detected during visual inspection	2	2	-	-
PC17. follow SOP set out for troubleshooting and perform tests using various mechanical, electrical/electronic measuring devices/tester/diagnostic tools/software to identify/isolate a fault	1	2	-	1
PC18. perform diagnostic task on the HV system as per following stages: general and mechanical tasks on the vehicle which do not require isolation of the HV systems, electrical work in non-live state of the HV systems, troubleshoot and replace parts in live state of the HV system	2	2	-	1
PC19. diagnose indirect faults if any, in vehicle's mechanical, electrical and electronic systems as per OEM SOP	2	2	-	1

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC20. report the malfunctions in the vehicle where solution is not available or in case of new premature failures, to the concerned person along with preliminary diagnostic details	2	3	-	1
PC21. dismantle and reassemble aggregates of a vehicle for fault diagnosis	-	3	-	-
Conclude the repair solution for the fault	**5**	**10**	**-**	**4**
PC22. maintain the documentation related to inspections and troubleshooting performed on the vehicle	-	2	-	-
PC23. interpret results as required	2	2	-	1
PC24. compare results of diagnostic inspections/tests with vehicle specifications and regulatory requirements	2	2	-	2
PC25. validate the options for repair or replacement	1	2	-	1
PC26. prepare final proposal regarding repair or replacement requirements with justification	-	2	-	-
NOS Total	**30**	**50**	**-**	**20**

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N1435
NOS Name	Carry out diagnosis of electric vehicle for repair requirements
Sector	Automotive
Sub-Sector	Automotive Vehicle Service
Occupation	Technical Service & Repair
NSQF Level	5
Credits	TBD
Version	1.0
Last Reviewed Date	29/01/2021
Next Review Date	29/01/2026
NSQC Clearance Date	29/01/2021

ASC/N1436: Carry out service, repair and overhauling of mechanical aggregates in vehicle

Description

This unit describes the knowledge and skills required in an individual to carry out service, repair and overhauling of mechanical system of an electric vehicle.

Scope

The scope covers the following :

- Prepare to carry out routine service and repairs
- Perform routine service and repairs
- Perform post service/repair routine

Elements and Performance Criteria

Prepare to carry out routine service and repairs

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

PC1. review the job card, obtain sufficient information from customer/service advisor to assess service and repair needs of the vehicle

PC2. identify the auto components related to the various aggregates in the vehicle

PC3. collect workshop tools/measuring devices/equipment required for the job and check their condition/calibration

PC4. report the malfunctions if any, in the tools/equipment to the person concerned for rectification

PC5. ensure no HV (High Voltage) activity is being conducted around workstation prior to commencement of work

PC6. prepare the vehicle according to nature of job to be performed: general and mechanical job on the vehicle/electrical work in non-live state/troubleshoot and replace parts in live state of HV system

PC7. mark the vehicle and safeguard the working area during electrical work

PC8. conduct visual inspection of the vehicle to identify defects in HV components

PC9. assess mechanical components/aggregates such as brake pad/shoe, wheel cylinder, mountings, bushes, control arms etc. of the vehicle for any external impact/bend/leak/incorrect level/wear & tear

PC10. prepare final proposal regarding repair or replacement requirements with justification

Perform routine service and repairs

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

PC11. report the malfunctions/repairs in the vehicle beyond own scope to the concerned person

PC12. take precautions to avoid damage to the vehicle and its components while working on various aggregates

PC13. perform task on the HV system as per following stages: general and mechanical tasks on the vehicle which do not require isolation of the HV systems, mechanical work in non live state of the HV systems and replace parts in live state of the HV system

PC14. use workshop tools/measuring devices/equipment required for the job as per OEM Standard Operating Procedure (SOP)

PC15. remove parts relevant to various mechanical aggregates and place them securely as specified by OEM

PC16. dismantle mechanical aggregates, if required and report additional repair requirement

PC17. clean and condition dismantled components, including mechanical and electrical aggregates, prior to assembly

PC18. perform repair/replacement/calibration/overhauling of mechanical system/aggregate such as drive line, running systems, etc. including power assisted braking & steering systems

PC19. maintain the documentation related to inspection, servicing and repair of the vehicle

Perform post service/repair routine

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

PC20. check the performance of vehicle/aggregate post repair and report to supervisor/service advisor if further inspection is required by another specialist

PC21. ensure completeness of tasks assigned before releasing the vehicle for the next procedure

PC22. dispose off materials such as waste oil, scrap of failed parts/aggregates, as per organisation's policies

PC23. ensure all tools, auxiliary material and other equipment must be removed from the work site

PC24. perform scheduled checks, calibration and timely repairs for workshop tools, equipment and workstations

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. the automotive Industry in India, workshop structure and role and responsibilities of different people in the workshop

KU2. Standard Operating Procedures (SOP) for receiving vehicles, opening job card, allocation of work, invoicing, vehicle delivery, handling complaints, etc

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

KU4. basic technology used in and functioning of various mechanical systems and components of the vehicle such as power train, running system, various lubrication system, hydraulic/pneumatic systems, cooling system, etc.

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

KU6. SOP recommended by OEM for using diagnostic and troubleshooting tools/equipment related to mechanical component/aggregate such as special service tools, measuring instrument, pressure indicators/gauges, volt meters, ammeters, ohmmeters, battery tester, dedicated and computer based diagnostic air bleeding equipment, etc.

KU7. various sources of information available for assessing service and repair requirements of the vehicle including diagnostic displays, visual inspections, test drives, vehicle/equipment manufacturer specifications, tolerance limits of components and options for repair or replacement

KU8. OEM's SOPs for service, repair and overhauling of mechanical aggregate of the vehicle

KU9. how to work on the HV systems which do not require isolation, troubleshooting and replacing parts on the active HV system

KU10. standard schedules and checklists recommended by the OEM/auto component manufacturer for servicing of mechanical component/aggregate in the vehicle

KU11. various methods for removal, dismantling, cleaning, adjusting, reassembling and testing of mechanical components for proper functioning

KU12. type and quality of consumables/materials used for the job such as seals, sealant, fasteners, lubricants etc.

KU13. safety precautions for equipment and components as prescribed by the OEM

KU14. specific precautions to ensure that no damage is caused to the vehicle, including its electrical and mechanical aggregates, while carrying out the work

KU15. electrical hazards, protective measures and first aid in case of electric shock, electrical arc in public grid or in an electrical car, impact of electric current/arc, secondary accidents, etc.

KU16. five safety rules for electrical work on HV systems before starting the work i.e. isolate, safeguard reconnection, verify the non-live state, earth or short-circuit and shroud or safeguard adjacent live parts

KU17. organisational/professional code of ethics and standards of practice

KU18. documentation requirements for each procedure carried out as part of roles and responsibilities as specified by OEM/auto component manufacturer

KU19. various methods to dispose-off replaced failed components/parts in accordance with safety, health and environmental policies and regulation

KU20. safety, health and environmental policies and regulations for the work place as well as for automotive trade in general

KU21. legal regulations that need to be taken into account for handling electric vehicles in the workshop

KU22. Occupational Safety and Health (OSH) measures required for working on electric vehicle

Generic Skills (GS)

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

GS1. read and interpret workplace related documentation

GS2. interpret the needs of customers by understanding the key issues

GS3. communicate using terms, names, grades and other nomenclature pertaining to the automotive trade

GS4. analyse and apply the information gathered from observation, experience, reasoning or communication to act efficiently

GS5. identify potential workplace problem and take suitable action

GS6. read various sources of information available for assessing service and repair requirements

GS7. read policies and regulations pertinent to the job, including OEM guidelines, Health and Safety instructions etc. while working on the Electric Vehicle and its aggregates

GS8. write in English/regional language

GS9. communicate effectively at the workplace

GS10. plan work according to the required schedule and location

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Prepare to carry out routine service and repairs	10	20	-	8
PC1. review the job card, obtain sufficient information from customer/service advisor to assess service and repair needs of the vehicle	-	1	-	-
PC2. identify the auto components related to the various aggregates in the vehicle	1	2	-	2
PC3. collect workshop tools/measuring devices/equipment required for the job and check their condition/calibration	2	2	-	2
PC4. report the malfunctions if any, in the tools/equipment to the person concerned for rectification	-	1	-	-
PC5. ensure no HV (High Voltage) activity is being conducted around workstation prior to commencement of work	2	2	-	-
PC6. prepare the vehicle according to nature of job to be performed: general and mechanical job on the vehicle/electrical work in non-live state/troubleshoot and replace parts in live state of HV system	1	2	-	-
PC7. mark the vehicle and safeguard the working area during electrical work	-	1	-	-
PC8. conduct visual inspection of the vehicle to identify defects in HV components	2	2	-	2
PC9. assess mechanical components/aggregates such as brake pad/shoe, wheel cylinder, mountings, bushes, control arms etc. of the vehicle for any external impact/bend/leak/incorrect level/wear & tear	2	4	-	2
PC10. prepare final proposal regarding repair or replacement requirements with justification	-	3	-	-
Perform routine service and repairs	15	20	-	7
PC11. report the malfunctions/repairs in the vehicle beyond own scope to the concerned person	-	2	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. take precautions to avoid damage to the vehicle and its components while working on various aggregates	2	2	-	2
PC13. perform task on the HV system as per following stages: general and mechanical tasks on the vehicle which do not require isolation of the HV systems, mechanical work in non live state of the HV systems and replace parts in live state of the HV system	3	4	-	2
PC14. use workshop tools/measuring devices/equipment required for the job as per OEM Standard Operating Procedure (SOP)	2	3	-	1
PC15. remove parts relevant to various mechanical aggregates and place them securely as specified by OEM	1	2	-	-
PC16. dismantle mechanical aggregates, if required and report additional repair requirement	-	2	-	-
PC17. clean and condition dismantled components, including mechanical and electrical aggregates, prior to assembly	2	1	-	-
PC18. perform repair/replacement/calibration/overhauling of mechanical system/aggregate such as drive line, running systems, etc. including power assisted braking & steering systems	3	2	-	2
PC19. maintain the documentation related to inspection, servicing and repair of the vehicle	2	2	-	-
Perform post service/repair routine	**5**	**10**	**-**	**5**
PC20. check the performance of vehicle/aggregate post repair and report to supervisor/service advisor if further inspection is required by another specialist	-	3	-	2
PC21. ensure completeness of tasks assigned before releasing the vehicle for the next procedure	-	1	-	-
PC22. dispose off materials such as waste oil, scrap of failed parts/aggregates, as per organisation's policies	2	3	-	2
PC23. ensure all tools, auxiliary material and other equipment must be removed from the work site	1	3	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC24. perform scheduled checks, calibration and timely repairs for workshop tools, equipment and workstations	2	-	-	1
NOS Total	**30**	**50**	**-**	**20**

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N1436
NOS Name	Carry out service, repair and overhauling of mechanical aggregates in vehicle
Sector	Automotive
Sub-Sector	Automotive Vehicle Service
Occupation	Technical Service & Repair
NSQF Level	5
Credits	TBD
Version	1.0
Last Reviewed Date	29/01/2021
Next Review Date	29/01/2026
NSQC Clearance Date	29/01/2021

ASC/N1437: Carry out service, repair and overhauling of electrical and electronic systems within an aggregate in the vehicle

Description

This unit describes the knowledge and skills required in an individual to carry out service, repair and overhauling of electrical and electronic system of an electric vehicle.

Scope

The scope covers the following :

- Prepare to carry out routine service and repairs
- Perform service and repairs
- Perform post service/repair routine

Elements and Performance Criteria

Prepare to carry out routine service and repairs

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

PC1. review the job card, obtain sufficient information from customer/service advisor to assess service and repair needs of the vehicle

PC2. identify the auto components related to the various aggregates in the vehicle

PC3. collect workshop tools/measuring devices/equipment required for the job and check their condition/calibration

PC4. report the malfunctions if any, in the tools/equipment to the person concerned for rectification

PC5. ensure no HV (High Voltage) activity is being conducted around workstation prior to commencement of work

PC6. prepare the vehicle according to nature of job to be performed: general and mechanical job on the vehicle/electrical work in non-live state/troubleshoot and replace parts in live state of HV system

PC7. mark the vehicle and safeguard the working area during electrical work

PC8. conduct visual inspection of the vehicle to identify defects in HV components

PC9. prepare final proposal regarding repair or replacement requirements with justification, post inspection or testing

Perform service and repairs

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

PC10. report the malfunctions/repairs in the vehicle beyond own scope to the concerned person

PC11. take precautions to avoid damage to the vehicle and its components while working on various aggregates

PC12. perform task on the HV system as per following stages: general and electrical tasks on the vehicle which do not require isolation of the HV systems, electrical work in non live state of the HV systems, and replace parts in live state of the HV system

PC13. use workshop tools/measuring devices/equipment required for the job as per OEM Standard Operating Procedure (SOP)

PC14. remove parts relevant to various electrical/electronics and place them securely as specified by OEM

PC15. dismantle electrical aggregate, if required and report additional repair requirement

PC16. test electrical/electronic components post removal wherever applicable as per OEM SOP

PC17. clean and condition dismantled components, including mechanical and electrical aggregates, prior to assembly

PC18. perform repair of all electrical and electronic faults including direct faults in input sensors, output actuators, wiring harnesses, computer systems, calibration/adjustment specifications, component specifications, component assembly, system modifications

PC19. repair indirect faults in electrical/electronic aggregate due to other system/component

PC20. maintain the documentation related to inspection, servicing and repair of the vehicle

Perform post service/repair routine

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

PC21. check the performance of vehicle/aggregate post repair and report to supervisor/service advisor if further inspection is required by another specialist

PC22. ensure completeness of tasks assigned before releasing the vehicle for the next procedure

PC23. dispose off materials such as old batteries, scrap of failed parts/aggregates as per organization's policies

PC24. ensure all tools, auxiliary material and other equipment must be removed from the work site

PC25. perform scheduled checks, calibration and timely repairs for workshop tools, equipment and workstations

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. the automotive Industry in India, workshop structure and role and responsibilities of different people in the workshop

KU2. Standard Operating Procedures (SOP) for receiving vehicles, opening job card, allocation of work, invoicing, vehicle delivery, handling complaints, etc

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

KU4. 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, and radio frequency (automotive digital computers, automotive communication protocols such as CAN, LIN, etc.)

KU5. basic technology used in and functioning of various systems and components of the vehicle such as batteries, body management system, telematics, air-conditioning systems, active & passive safety system, media and other systems (including electrical machines and devices used in electric vehicles such as: generator, DC/AC and DC/DC converters, AC motor, DC motor, charging systems etc.)

KU6. interconnection of systems with each other and effect of one system on another

KU7. SOP recommended by OEM for using tools and /equipment for diagnosis or troubleshooting related to electrical/electronic systems such as special service tools, measuring instrument, volt meters, ammeters, ohmmeters, battery tester, dedicated and computer based diagnostic equipment, etc.

KU8. various sources of information available for assessing service and repair requirements of the vehicle including diagnostic displays, visual inspections, test drives, vehicle/equipment manufacturer specifications, tolerance limits of components and options for repair or replacement

KU9. SOP for service, repair and overhauling of electrical/electronics aggregate of the vehicle as prescribed by the OEM

KU10. various methods to remove, dismantle, cleaning, adjusting, reassemble and test electrical/electronic components

KU11. type and quality of consumables/materials used for the job such as seals, sealant, fasteners, lubricants etc.

KU12. how to work on the HV systems which do not require isolation, troubleshooting and replacing parts on the active HV system

KU13. safety precautions for equipment and components prescribed by the OEM

KU14. specific precautions to ensure that no damage is caused to the vehicle, including its electrical and mechanical aggregates, while carrying out the work

KU15. electrical hazards, protective measures and first aid in case of electric shock, electrical arc in public grid or in an electrical car, impact of electric current/arc, secondary accidents, etc.

KU16. five safety rules for electrical work on HV systems before starting the work i.e. isolate, safeguard reconnection, verify the non-live state, earth or short-circuit and shroud or safeguard adjacent live parts

KU17. organisational/professional code of ethics and standards of practice

KU18. documentation requirements for each procedure carried out as part of roles and responsibilities as specified by OEM/auto component manufacturer

KU19. various methods to dispose-off replaced failed components/parts in accordance with safety, health and environmental policies and regulation

KU20. safety, health and environmental policies and regulations for the work place as well as for automotive trade in general

KU21. legal regulations that need to be taken into account for handling electric vehicles in the workshop

KU22. Occupational Safety and Health (OSH) measures required for working on electric vehicle

Generic Skills (GS)

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

GS1. read and interpret workplace related documentation

GS2. interpret the needs of customers by understanding the key issues

GS3. communicate using terms, names, grades and other nomenclature pertaining to the automotive trade

GS4. analyse and apply the information gathered from observation, experience, reasoning or communication to act efficiently

GS5. identify potential workplace problem and take suitable action

GS6. read various sources of information available for assessing service and repair requirements

GS7. read policies and regulations pertinent to the job, including OEM guidelines, Health and Safety instructions etc. while working on the Electric Vehicle and its aggregates

GS8. write in English/regional language

GS9. communicate effectively at the workplace

GS10. plan work according to the required schedule and location

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Prepare to carry out routine service and repairs	10	20	-	8
PC1. review the job card, obtain sufficient information from customer/service advisor to assess service and repair needs of the vehicle	-	1	-	-
PC2. identify the auto components related to the various aggregates in the vehicle	1	2	-	2
PC3. collect workshop tools/measuring devices/equipment required for the job and check their condition/calibration	2	2	-	2
PC4. report the malfunctions if any, in the tools/equipment to the person concerned for rectification	-	1	-	-
PC5. ensure no HV (High Voltage) activity is being conducted around workstation prior to commencement of work	2	2	-	-
PC6. prepare the vehicle according to nature of job to be performed: general and mechanical job on the vehicle/electrical work in non-live state/troubleshoot and replace parts in live state of HV system	2	4	-	1
PC7. mark the vehicle and safeguard the working area during electrical work	-	2	-	-
PC8. conduct visual inspection of the vehicle to identify defects in HV components	2	2	-	2
PC9. prepare final proposal regarding repair or replacement requirements with justification, post inspection or testing	1	4	-	1
Perform service and repairs	15	20	-	7
PC10. report the malfunctions/repairs in the vehicle beyond own scope to the concerned person	-	2	-	-
PC11. take precautions to avoid damage to the vehicle and its components while working on various aggregates	2	2	-	2

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. perform task on the HV system as per following stages: general and electrical tasks on the vehicle which do not require isolation of the HV systems, electrical work in non live state of the HV systems, and replace parts in live state of the HV system	3	3	-	2
PC13. use workshop tools/measuring devices/equipment required for the job as per OEM Standard Operating Procedure (SOP)	2	2	-	1
PC14. remove parts relevant to various electrical/electronics and place them securely as specified by OEM	-	2	-	-
PC15. dismantle electrical aggregate, if required and report additional repair requirement	1	2	-	-
PC16. test electrical/electronic components post removal wherever applicable as per OEM SOP	-	2	-	-
PC17. clean and condition dismantled components, including mechanical and electrical aggregates, prior to assembly	2	1	-	-
PC18. perform repair of all electrical and electronic faults including direct faults in input sensors, output actuators, wiring harnesses, computer systems, calibration/adjustment specifications, component specifications, component assembly, system modifications	3	2	-	2
PC19. repair indirect faults in electrical/electronic aggregate due to other system/component	1	1	-	-
PC20. maintain the documentation related to inspection, servicing and repair of the vehicle	1	1	-	-
Perform post service/repair routine	**5**	**10**	**-**	**5**
PC21. check the performance of vehicle/aggregate post repair and report to supervisor/service advisor if further inspection is required by another specialist	-	3	-	2
PC22. ensure completeness of tasks assigned before releasing the vehicle for the next procedure	-	1	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC23. dispose off materials such as old batteries, scrap of failed parts/aggregates as per organization's policies	2	3	-	2
PC24. ensure all tools, auxiliary material and other equipment must be removed from the work site	1	3	-	-
PC25. perform scheduled checks, calibration and timely repairs for workshop tools, equipment and workstations	2	-	-	1
NOS Total	**30**	**50**	**-**	**20**

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N1437
NOS Name	Carry out service, repair and overhauling of electrical and electronic systems within an aggregate in the vehicle
Sector	Automotive
Sub-Sector	Automotive Vehicle Service
Occupation	Technical Service & Repair
NSQF Level	5
Credits	TBD
Version	1.0
Last Reviewed Date	29/01/2021
Next Review Date	29/01/2026
NSQC Clearance Date	29/01/2021

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) (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. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training centre (as per assessment criteria below).

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

5. In case of successfully passing only certain number of NOSs, the trainee is eligible to take

subsequent assessment on the balance NOS's to pass the Qualification Pack.

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/N9801.Manage work and resources (Service)	50	30	-	20	100	15
ASC/N9802.Interact effectively with team, customers and others	50	30	-	20	100	10
ASC/N1435.Carry out diagnosis of electric vehicle for repair requirements	30	50	-	20	100	30
ASC/N1436.Carry out service, repair and overhauling of mechanical aggregates in vehicle	30	50	-	20	100	20
ASC/N1437.Carry out service, repair and overhauling of electrical and electronic systems within an aggregate in the vehicle	30	50	-	20	100	25
Total	**190**	**210**	**-**	**100**	**500**	**100**

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training
PwD	Persons with Disability

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.