



Qualification Pack

Mechanic (Electrical/ Electronics/Instrumentation)

QP Code: IES/Q1105

NSQF Level: 4

Infrastructure Equipment Skill Council || Infrastructure Equipment Skill Council, Avik Royale-First Floor
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IES/Q1105: Mechanic (Electrical/ Electronics/Instrumentation)

Brief Job Description

Mechanic (Electrical/Electronics/Instrumentation) supports the equipment operation by conducting inspections and preventive maintenance. His job role involves skilled mechanical and electrical work such as installing, maintaining and repairing electrical and related equipment etc. in infrastructure equipment. He also provides guidance and on-the-job training to juniors.

Personal Attributes

This job requires the individual to work independently as well as in teams. He Should have analytical skills, problem solving attitude, high concentration levels. He should have good hand-eye coordination, good eyesight, no colour-blindness and should be able to complete precise and detailed work.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [IES/N1105: Carry out repair and maintenance of infrastructure equipments electrical/electronic/instrumentation parts](#)
2. [IES/N7602: Comply with workshop health and safety guidelines](#)
3. [IES/N7701: Carry out reporting and documentation](#)

Qualification Pack (QP) Parameters

Sector	Infrastructure Equipment
Sub-Sector	Equipment Service and spares
Occupation	Equipment Maintenance
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2004/7233.28
Minimum Educational Qualification & Experience	I.T.I (Electrical/ Electronic/ Instrumentation) with 2-3 Years of experience experience in Electrical/Electronic/Instrumentation maintenance OR Diploma (Electrical/ Electronic/ Instrumentation) with 2-3 Years of experience experience in Electrical/Electronic/Instrumentation maintenance

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Minimum Level of Education for Training in School	
Pre-Requisite License or Training	Electrical/ Electronic/Instrumentation training preferred
Minimum Job Entry Age	18 Years
Last Reviewed On	31/03/2015
Next Review Date	30/06/2020
NSQC Approval Date	18/06/2015
Version	1.0

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IES/N1105: Carry out repair and maintenance of infrastructure equipments electrical/ electronic/instrumentation parts

Description

This unit provides Performance Criteria, Knowledge & Understanding and Skills & Ability for activities that need to be carried out for testing, diagnosing, repairing and maintaining Electrical/ Electronics/ Instrumentation

Scope

This unit/task covers the following: Breakdown Repair Maintenance Work

Elements and Performance Criteria

Breakdown repair

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

- PC1.** collect relevant information on the symptoms and problems associated with the fault
- PC2.** select appropriate diagnostic techniques, tools and aids to locate the
- PC3.** apply appropriate diagnostic techniques, tools and aids to locate the fault
- PC4.** investigate and establish the most likely causes of the fault as per the standard operating plan
- PC5.** inspect the work area is free from hazards as per the safety norm of the organization
- PC6.** inspect the work area and check for the cleanliness and as per the organizational standards
- PC7.** carry out random checks and inspections to keep a check on the quality of work carried out
- PC8.** conduct visual inspection/flash test as per service manual
- PC9.** verify conformity of mains supply to electrical/manufacture's standards
- PC10.** use test equipment to accurately measure and interpret, e.g. voltage, current flow, earth continuity, resistance as per standard operating procedure
- PC11.** diagnose faults in infrastructure equipment electronic control systems and components
- PC12.** interpret diagnostic results as per manufacturer's manual
- PC13.** recommend action to rectify the fault as per standard operating procedure
- PC14.** remove, replace or repair the required components, using approved tools and techniques as per the manufacturer's manual
- PC15.** ensure to remove, replace or repair the required components without causing damage to components or surrounding structures
- PC16.** report any instances where the removal and replacement activities cannot be fully met as per company's policy
- PC17.** complete the relevant documentation, in accordance with organizational requirements
- PC18.** work safely at all times, complying with health and safety and other relevant regulations, directives and guidelines
- PC19.** handle and dispose waste based on environmental guidelines at the work place

Maintenance work PC

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

- PC20.** follow the maintenance schedule as per the operator and maintenance manual
- PC21.** check the components of electrical/electronics/instrumentation as per the service manual
- PC22.** replace the components of electrical/electronics/instrumentation system as per manufacturers manual
- PC23.** verify in appropriate sequence for the components of Electrical system as per Service manual Starter circuits Ignition circuits Charging circuits Lighting circuits Instrumentation Spark ignition Ancillary circuits Battery
- PC24.** Verify conformity of mains supply to electrical/manufacturers standards. flash test visual inspection
- PC25.** verify correct operation of safety devices, e.g. circuit protection, fuses, safety switches as per manufacturers manual
- PC26.** Verify the following to judge the appropriate operation of electronic control and monitoring electronic system components as per service manual Transistors Capacitors Regulators Resistors Transformers Thermistors Transmitters Electronic control units
- PC27.** cleaning of electronic components as per standard operating procedure
- PC28.** report any instances where the parts need to be changed/repared as per organization policy
- PC29.** replenish/ change the consumables as per the manufacturers manual
- PC30.** assemble back , close covers , guards & prepare for taking the trials as per manufacturers manual
- PC31.** complete the relevant documentation, in accordance with organizational requirements

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the organizations procedures and guidelines related to breakdown & maintenance services
- KU2.** the performance standards & procedures followed in the company
- KU3.** reporting structure in the company
- KU4.** escalation matrix for reporting unresolved problems
- KU5.** timeframe in which the complaint/problem should be resolved
- KU6.** work target and review mechanism with supervisor for obtaining/ giving feedback related to performance process
- KU7.** location of tools
- KU8.** contact person in case of queries on procedure or products
- KU9.** location and process for storage and disposal of waste material
- KU10.** safety policy of the company
- KU11.** the method to extract and use information from the relevant areas to assist in the diagnosis
- KU12.** techniques to rectify the fault in the electrical/electronics/instrumentation of the infrastructure equipment
- KU13.** the manufacturers specification of the electrical/electronics/instrumentation parts in use
- KU14.** various components of electrical/electronics/instrumentation systems

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- KU15.** the techniques to common symbols used in electrical/electronics/instrumentation circuit diagrams
- KU16.** the techniques to read and interpret electrical/electronics/instrumentation circuit diagrams
- KU17.** the techniques used to diagnose the faults such as sensory information - sight, sound, smell, touch, visual functional checks, taking measurements
- KU18.** usage of equipment self-diagnostics
- KU19.** usage of a range of fault diagnostic equipment to investigate the problem in the electrical/ electronics/ instrumentation system
- KU20.** the methods to understand construction, types and function of components of electrical system starter circuits ignition circuits charging circuits lighting circuits instrumentation spark ignition ancillary circuits battery
- KU21.** methods to maintain different types of batteries
- KU22.** methods to correctly and safely charge different battery types
- KU23.** usage of various safety devices, e.g. circuit protection fuses safety switches
- KU24.** techniques to interpret electrical/manufacturers standards
- KU25.** the methods to understand the construction, types and function of electronic control and monitoring system components as: transistors capacitors regulators resistors transformers thermistors transducers transmitters actuators electronic control units
- KU26.** methods to remove components from electrical/ electronics/ instrumentation system without damage to the components or surrounding structure
- KU27.** usage of range of hand tools
- KU28.** methods to check that the tools and equipment to be used are correctly calibrated, and are in a safe, tested and serviceable condition
- KU29.** ensure that all tools are used correctly, checked and stored after use
- KU30.** technique to lay the removed components out in a logical sequence to aid re-assembly
- KU31.** methods to keep component parts together or in the order that they were removed
- KU32.** methods of inspecting removed electrical/ electronics/ instrumentation component, and the awareness of what to look for with regard to damage and wear
- KU33.** usage of the equipment used in the rectification operations
- KU34.** method to rectify the fault using methods such as component replacement, adjustments, repair, refitting techniques
- KU35.** methods to select and carry out visual, aural, functional and measurement tests to ensure the correct operation of the component or system
- KU36.** expected outcomes of the tests being conducted
- KU37.** methods to rectify the fault component replacement adjustments
- KU38.** repair and refitting techniques
- KU39.** methods to clean/service different electrical/ electronics/ instrumentation parts
- KU40.** methods different reports/templates followed in the organization
- KU41.** the hazards associated with diagnosing and rectifying electrical/ electronics/ instrumentation faults
- KU42.** usage of proper tools and equipment used and minimize & reduce any risk

Generic Skills (GS)

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

- GS1.** record and document the details of repairs and maintenance performed on various components
- GS2.** record all diagnostics as per the prescribed format recommended by the manufacturer
- GS3.** refer to operator and maintenance manuals, parts checklist and other equipment related collateral to support work tasks
- GS4.** read the specifications of an equipment or any other component or part
- GS5.** interact with the customers, as required, to seek clarifications and understand issues
- GS6.** use correct technical terms while communicating with team members and customers
- GS7.** interact with team members including colleagues to work efficiently
- GS8.** evaluate the situation to decide on seeking assistance from manager/ peers
- GS9.** decide on the repair/ replacement of any aggregate or component post the diagnosis
- GS10.** plan, prioritize and sequence work operations as per required schedule and location
- GS11.** organize and analyze information relevant to work
- GS12.** ensure that the service provided is of the highest order to ensure customer satisfaction
- GS13.** follow up with the superiors on any unfavourable feedback received from customer
- GS14.** ensure timely communication of the additional requirements in the equipment to the customer
- GS15.** refer problems outside area of responsibility to appropriate person
- GS16.** determine problems in the equipment needing priority action
- GS17.** refer complex diagnosis to supervisor/ other peers
- GS18.** assess repairs required based on technical faults identified
- GS19.** analyse, evaluate and apply the information gathered from observation, experience, reasoning to act efficiently and effectively
- GS20.** use the diagnosis results to take an appropriate decision on repair or replacement of component with consultation with manager/ peers

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Breakdown repair</i>	8	27	-	-
PC1. collect relevant information on the symptoms and problems associated with the fault	1	1	-	-
PC2. select appropriate diagnostic techniques, tools and aids to locate the	-	3	-	-
PC3. apply appropriate diagnostic techniques, tools and aids to locate the fault	1	1	-	-
PC4. investigate and establish the most likely causes of the fault as per the standard operating plan	-	1	-	-
PC5. inspect the work area is free from hazards as per the safety norm of the organization	-	3	-	-
PC6. inspect the work area and check for the cleanliness and as per the organizational standards	-	3	-	-
PC7. carry out random checks and inspections to keep a check on the quality of work carried out	1	1	-	-
PC8. conduct visual inspection/flash test as per service manual	-	1	-	-
PC9. verify conformity of mains supply to electrical/manufacture's standards	-	1	-	-
PC10. use test equipment to accurately measure and interpret, e.g. voltage, current flow, earth continuity, resistance as per standard operating procedure	1	1	-	-
PC11. diagnose faults in infrastructure equipment electronic control systems and components	-	1	-	-
PC12. interpret diagnostic results as per manufacturers manual	-	1	-	-
PC13. recommend action to rectify the fault as per standard operating procedure	1	1	-	-
PC14. remove, replace or repair the required components, using approved tools and techniques as per the manufacturers manual	1	1	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC15. ensure to remove, replace or repair the required components without causing damage to components or surrounding structures	1	1	-	-
PC16. report any instances where the removal and replacement activities cannot be fully met as per companys policy	1	1	-	-
PC17. complete the relevant documentation, in accordance with organizational requirements	-	1	-	-
PC18. work safely at all times, complying with health and safety and other relevant regulations, directives and guidelines	-	3	-	-
PC19. handle and dispose waste based on environmental guidelines at the work place	-	1	-	-
<i>Maintenance work PC</i>	5	18	-	-
PC20. follow the maintenance schedule as per the operator and maintenance manual	-	1	-	-
PC21. check the components of electrical/electronics/instrumentation as per the service manual	-	1	-	-
PC22. replace the components of electrical/electronics/instrumentation system as per manufacturers manual	1	1	-	-
PC23. verify in appropriate sequence for the components of Electrical system as per Service manual Starter circuits Ignition circuits Charging circuits Lighting circuits Instrumentation Spark ignition Ancillary circuits Battery	1	3	-	-
PC24. Verify conformity of mains supply to electrical/manufacturers standards. flash test visual inspection	-	3	-	-
PC25. verify correct operation of safety devices, e.g. circuit protection, fuses, safety switches as per manufacturers manual	1	1	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC26. Verify the following to judge the appropriate operation of electronic control and monitoring electronic system components as per service manual Transistors Capacitors Regulators Resistors Transformers Thermistors Transmitters Electronic control units	1	3	-	-
PC27. cleaning of electronic components as per standard operating procedure	1	1	-	-
PC28. report any instances where the parts need to be changed/repaired as per organization policy	-	1	-	-
PC29. replenish/ change the consumables as per the manufacturers manual	-	1	-	-
PC30. assemble back , close covers , guards & prepare for taking the trials as per manufacturers manual	-	1	-	-
PC31. complete the relevant documentation, in accordance with organizational requirements	-	1	-	-
NOS Total	13	45	-	-

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National Occupational Standards (NOS) Parameters

NOS Code	IES/N1105
NOS Name	Carry out repair and maintenance of infrastructure equipments electrical/ electronic/instrumentation parts
Sector	Infrastructure Equipment
Sub-Sector	Equipment Service and spares
Occupation	Equipment Maintenance
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	31/03/2015
Next Review Date	31/03/2017
NSQC Clearance Date	

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IES/N7602: Comply with workshop health and safety guidelines

Description

This unit provides Performance Criteria, Knowledge & Understanding and Skills & Ability for adhering to health and safety requirements at the service workshop during equipment maintenance.

Scope

This unit/task covers the following: Service workshop health and safety

Elements and Performance Criteria

Service workshop health and safety

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

- PC1.** comply with safety, health, security and environment related regulations/ guidelines as per organizational/ manufacturers policy
- PC2.** carry out maintenance operations as per the manufacturers and workshop related health and safety guidelines/ standard operating procedures
- PC3.** follow safety regulations and procedures with regard to service workshop hazards and risks
- PC4.** use appropriate protective clothing/ equipment for specific tasks and work conditions as per service manual
- PC5.** lift and carry tools/equipment/components safely using correct procedure as per the service manual
- PC6.** use appropriate tools in a proper manner as given in the service manual
- PC7.** keep the work area free from clutter and spillage
- PC8.** store equipment and tools back at designated place post use and inspect to make sure they are not left behind
- PC9.** handle the storage and disposal of hazardous materials and waste in compliance with health, safety and environmental guidelines
- PC10.** operate various grades of fire extinguishers, as applicable
- PC11.** support in administering basic first aid and report to concerned team members, as required, in case of an accident
- PC12.** respond promptly and appropriately to an accident/ incident or emergency situation, within limits of your role and responsibility
- PC13.** record and report details related to operations, incidents or accidents, as applicable

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** health, safety, environmental(hse) and security related policies/ guidelines of the organization
- KU2.** the importance of complying with health, safety, environmental and security guidelines during workshop operations

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- KU3.** contact details of personnel responsible for health, safety and environment (she) related matters
- KU4.** location of workshop store, first aid station and safe assembly points
- KU5.** concerned personnel to reach out in case of emergencies and accidents/ incidents
- KU6.** reporting and documentation procedures for hse and security matters
- KU7.** manufacturers guidelines related to health and safety requirements
- KU8.** common types of health, safety, environment and security risks related to maintenance operations
- KU9.** types, use and importance of personal protective equipment (ppe) and other safety clothing
- KU10.** safe working practices to avoid common hazards and risks
- KU11.** safe working practices when working with tools and machines
- KU12.** safe working practices while working in different processes/ confined spaces
- KU13.** various dangers associated with the use of electrical equipment
- KU14.** various types of safety signs/ warnings and their meaning
- KU15.** guidelines for transport, storage and disposal of hazardous materials and waste
- KU16.** types of common hazards and risks at the workshop including fire, electrical, equipment related
- KU17.** knowledge of safe lockdown/ stop of machinery use in case of emergencies and incidents/ accidents
- KU18.** types of fire extinguishers and their use
- KU19.** common injuries and appropriate basic first aid treatment eg. electrical shock, bleeding, wounds, fractures, minor burns, eye injuries

Generic Skills (GS)

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

- GS1.** document and report any health and safety related incidents/ accidents
- GS2.** read all organizational and equipment related health and safety manuals and documents
- GS3.** read instructions, guidelines/procedures/rules
- GS4.** give clear instructions to coworkers, subordinates and others
- GS5.** make decisions on a suitable course of action or response in the event of any emergency, health and safety related incidents/accidents
- GS6.** plan and organize own work schedule, work area, tools, equipment and materials to minimise any risk for health and safety related incident/accident
- GS7.** build and maintain positive and effective relationships with colleagues and customers
- GS8.** identify immediate or temporary solutions to resolve delays
- GS9.** seek appropriate assistance from other sources to resolve problems
- GS10.** identify 'cause and effect' relations in own area of work
- GS11.** apply balanced judgment to different situations
- GS12.** document and report any health and safety related incidents/ accidents
- GS13.** read all organizational and equipment related health and safety manuals and documents

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- GS14.** read instructions, guidelines/procedures/rules
- GS15.** give clear instructions to coworkers, subordinates and others
- GS16.** make decisions on a suitable course of action or response in the event of any emergency, health and safety related incidents/accidents
- GS17.** plan and organize own work schedule, work area, tools, equipment and materials to minimise any risk for health and safety related incident/accident
- GS18.** build and maintain positive and effective relationships with colleagues and customers
- GS19.** identify immediate or temporary solutions to resolve delays
- GS20.** seek appropriate assistance from other sources to resolve problems
- GS21.** identify 'cause and effect' relations in own area of work
- GS22.** apply balanced judgment to different situations

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Service workshop health and safety</i>	7	19	-	-
PC1. comply with safety, health, security and environment related regulations/ guidelines as per organizational/ manufacturers policy	1	1	-	-
PC2. carry out maintenance operations as per the manufacturers and workshop related health and safety guidelines/ standard operating procedures	-	3	-	-
PC3. follow safety regulations and procedures with regard to service workshop hazards and risks	1	1	-	-
PC4. use appropriate protective clothing/ equipment for specific tasks and work conditions as per service manual	1	1	-	-
PC5. lift and carry tools/equipment/components safely using correct procedure as per the service manual	1	3	-	-
PC6. use appropriate tools in a proper manner as given in the service manual	1	3	-	-
PC7. keep the work area free from clutter and spillage	1	1	-	-
PC8. store equipment and tools back at designated place post use and inspect to make sure they are not left behind	-	1	-	-
PC9. handle the storage and disposal of hazardous materials and waste in compliance with health, safety and environmental guidelines	-	1	-	-
PC10. operate various grades of fire extinguishers, as applicable	1	1	-	-
PC11. support in administering basic first aid and report to concerned team members, as required, in case of an accident	-	1	-	-
PC12. respond promptly and appropriately to an accident/ incident or emergency situation, within limits of your role and responsibility	-	1	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. record and report details related to operations, incidents or accidents, as applicable	-	1	-	-
NOS Total	7	19	-	-

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National Occupational Standards (NOS) Parameters

NOS Code	IES/N7602
NOS Name	Comply with workshop health and safety guidelines
Sector	Infrastructure Equipment
Sub-Sector	Equipment Service and spares
Occupation	Equipment Maintenance
NSQF Level	3
Credits	TBD
Version	1.0
Last Reviewed Date	31/03/2015
Next Review Date	31/03/2017
NSQC Clearance Date	18/06/2015

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IES/N7701: Carry out reporting and documentation

Description

This unit provides Performance Criteria, Knowledge & Understanding and Skills & Ability for activities that are needed for preparation of various documents and reporting of data/problems.

Scope

This unit/task covers the following: Report unresolved problems Prepare reports related to field visits and work done

Elements and Performance Criteria

Report unresolved problems

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

- PC1.** follow reporting procedures as laid down by the employer
- PC2.** report and escalate problems/ incidents as required in a timely manner as per organizational policy
- PC3.** report to the appropriate authority as per the policy laid down by the employer

Prepare reports related to field visits and work done

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

- PC4.** identify job related documentation that needs to be completed
- PC5.** prepare parts list that needs to be procured for resolving problem in equipment
- PC6.** use prescribed formats and record details accurately as per the process
- PC7.** complete all documentation as per the policy laid down by the employer
- PC8.** adhere to the suggested timelines as per companys policy
- PC9.** make the documents available to appropriate authorities for inspection as per companys policy

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the organizations procedures and guidelines related to reporting & documentation
- KU2.** reporting structure in the company
- KU3.** escalation matrix for reporting unresolved problems
- KU4.** timeframe in which the complaint/problem should be resolved
- KU5.** work target and review mechanism with supervisor for obtaining/ giving feedback related to performance process
- KU6.** implications of delays in process to the company
- KU7.** contact person in case of queries on procedure
- KU8.** companys guidelines on how to fill & maintain documents

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- KU9.** the different channels of reporting in the company
- KU10.** the different types of documents to be maintained
- KU11.** different methods of recording information/reporting
- KU12.** methods to collate information and fill in the required form
- KU13.** methods to maintain the documents
- KU14.** the importance of correct information
- KU15.** implications of sharing incorrect information

Generic Skills (GS)

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

- GS1.** record/ accurately document the details of the job work as per organization's policies and process
- GS2.** read instructions, guidelines/procedures/rules
- GS3.** refer to operator and maintenance manuals, parts checklist and other equipment related collateral to support work tasks
- GS4.** use correct technical terms while interacting with superior
- GS5.** interact with team members including colleagues to work efficiently
- GS6.** evaluate the situation to decide on seeking assistance from manager/ peers
- GS7.** organize and analyze information relevant to work
- GS8.** provide service of the highest order to ensure customer satisfaction
- GS9.** seek appropriate assistance from other sources to resolve problems
- GS10.** identify cause and effect relations in area of work
- GS11.** apply balanced judgment to different situations

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Report unresolved problems</i>	3	3	-	-
PC1. follow reporting procedures as laid down by the employer	1	1	-	-
PC2. report and escalate problems/ incidents as required in a timely manner as per organizational policy	1	1	-	-
PC3. report to the appropriate authority as per the policy laid down by the employer	1	1	-	-
<i>Prepare reports related to field visits and work done</i>	4	8	-	-
PC4. identify job related documentation that needs to be completed	1	1	-	-
PC5. prepare parts list that needs to be procured for resolving problem in equipment	-	3	-	-
PC6. use prescribed formats and record details accurately as per the process	1	1	-	-
PC7. complete all documentation as per the policy laid down by the employer	1	1	-	-
PC8. adhere to the suggested timelines as per companys policy	-	1	-	-
PC9. make the documents available to appropriate authorities for inspection as per companys policy	1	1	-	-
NOS Total	7	11	-	-

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National Occupational Standards (NOS) Parameters

NOS Code	IES/N7701
NOS Name	Carry out reporting and documentation
Sector	Infrastructure Equipment
Sub-Sector	Equipment Service and spares
Occupation	Equipment Maintenance
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	31/03/2015
Next Review Date	31/03/2017
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Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Element/ Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each Element/ PC.
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
4. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training 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. To pass the Qualification Pack assessment, every trainee should score the Recommended Pass % aggregate for the QP.
7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Recommended Pass % : 70

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
IES/N1105.Carry out repair and maintenance of infrastructure equipments electrical/ electronic/instrumentation parts	13	45	-	-	58	57
IES/N7602.Comply with workshop health and safety guidelines	7	19	-	-	26	26
IES/N7701.Carry out reporting and documentation	7	11	-	-	18	17



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National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
Total	27	75	-	-	102	100

Acronyms

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

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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.

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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.