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REIMAGINE FUTURE

Qualification Pack



Assistant-Underground Mines

Metal/ Coal

Mechanical/ HEMM/ Electrical

QP Code: MIN/Q1102

Version: 1.0

NSQF Level: 2

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MIN/Q1102: Assistant-Underground Mines

Brief Job Description

The Assistant in an Underground Mine assists the Operator/ Fitter/ Technician in handling material, pre-operational checks, servicing Heavy Earth Moving Machinery (HEMM), shifting and operation of underground machines, and installation and maintenance of electrical systems and equipment.

Personal Attributes

This job requires the individual to concentrate on the job at hand and complete it efficiently and effectively. The individual should be physically agile, strong, have good eye-sight, and not suffer from color-blindness.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [MIN/N1101: Handle material](#)

Electives(mandatory to select at least one):

Elective 1: Metal

1. [MIN/N1702: Follow Health, Safety and Environmental guidelines for Underground Metalliferous Mines \(UMM\) \(Including Mine Vocational Training Rule and Mine Rescue Rule\)](#)

Elective 2: Coal

1. [MIN/N1704: Follow Health, Safety, and Environmental guidelines for underground coal mines \(Including Mine Vocational Training Rule and Mine Rescue Rule\)](#)

Options(Not mandatory):

Option 1: Mechanical

1. [MIN/N1102: Assist in Pre-Operational Checks and Servicing of machinery](#)

Option 2: HEMM



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1. [MIN/N1509: Assist in shifting and operation of the underground machines](#)

Option 3: Electrical

1. [MIN/N1104: Assist in installation and maintenance of electrical systems and equipment](#)

Qualification Pack (QP) Parameters

Sector	Mining
Sub-Sector	Mining Operation
Occupation	Mine Surveying, Drilling/Cutting, Shot firing/Blasting, Loading and Hauling - Opencast, Loading and Hauling - Underground, Specialized Operations, HSE Functions, Electrical Services
Country	India
NSQF Level	2
Credits	NA
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7233.1500, NCO-2015/7411.0200
Minimum Educational Qualification & Experience	5th Class with 2 Years of experience relevant OR 8th Class
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NA
Minimum Job Entry Age	20 Years
Last Reviewed On	27/01/2022
Next Review Date	27/01/2025
Deactivation Date	27/01/2025
NSQC Approval Date	27/01/2022
Version	1.0
Reference code on NQR	2022/MIN/SCMS/05244



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NQR Version	1.0
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MIN/N1101: Handle material

Description

This unit is about performing material handling activities in the mining area.

Scope

The scope covers the following :

- Move material within the mining area
- Load/unload the materials
- Reject unwanted materials

Elements and Performance Criteria

Move material within the mining area

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

- PC1.** pack and transport material, as per the instructions from the supervisor
- PC2.** follow the traffic rules and area restrictions within the mining area

Load/unload the materials

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

- PC3.** lift materials manually and dump the material
- PC4.** select and use appropriate tools and tackles
- PC5.** record count of material received and stack the material as instructed

Reject unwanted materials

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

- PC6.** sort visually, shift and create separate piles from the mineral rejects
- PC7.** inform supervisor of problems that are beyond scope of his role

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** job specific documents e.g. daily time log and importance of the same
- KU2.** safety policy of the company
- KU3.** risk and impact of not following defined procedures/work instructions
- KU4.** escalation matrix for reporting identified problems
- KU5.** implications of delays in process to the company
- KU6.** different types of mines and overview of the mine a person is working in
- KU7.** commonly used mining terminology - benches (width, height etc.), haul roads (width, gradient), stability of slopes, over hang, under cut, danger from high side etc.
- KU8.** code of practice in specific areas of mine
- KU9.** duties of workmen under mines act



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- KU10.** the outcome of violation of safety law
- KU11.** provision of leaves, wages and working hours under mines act
- KU12.** mining safety procedures
- KU13.** environmental impact of mining
- KU14.** sources of dust, noise, and vibration and measures to minimize them
- KU15.** refresher training as per the fourth schedule of Mines Vocational Training Rules (MVTR), 1966, within one month of joining duties following an absence from duties for a period exceeding one year
- KU16.** general safety rules vis-a-vis loading and stocking
- KU17.** importance of signage, mining area signs and other safety and emergency signals
- KU18.** traffic rules to be followed inside the mining yard and movement of persons in the mines
- KU19.** how to respond to emergencies, e.g. correct way to use a fire extinguisher
- KU20.** different tools and tackles and their uses
- KU21.** the significance of fences
- KU22.** importance of sensitization towards different genders and persons with disabilities (PWD)
- KU23.** importance of following infection control policies, '5-S' practices, and waste management as prescribed by regulatory authorities
- KU24.** importance of water/material/energy conservation and management
- KU25.** importance of Safety Management Plan (SMP) and Emergency Management Plan (EMP), prepared by the organization, as per DGMS guideline

Generic Skills (GS)

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

- GS1.** fill out daily time log or any other administrative forms
- GS2.** read and comprehend banners /signage
- GS3.** communicate with supervisors and peers
- GS4.** plan and organize the work assigned



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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Move material within the mining area</i>	9	14	-	6
PC1. pack and transport material, as per the instructions from the supervisor	5	7	-	3
PC2. follow the traffic rules and area restrictions within the mining area	4	7	-	3
<i>Load/unload the materials</i>	14	21	-	9
PC3. lift materials manually and dump the material	6	7	-	3
PC4. select and use appropriate tools and tackles	4	7	-	3
PC5. record count of material received and stack the material as instructed	4	7	-	3
<i>Reject unwanted materials</i>	7	15	-	5
PC6. sort visually, shift and create separate piles from the mineral rejects	4	8	-	3
PC7. inform supervisor of problems that are beyond scope of his role	3	7	-	2
NOS Total	30	50	-	20



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National Occupational Standards (NOS) Parameters

NOS Code	MIN/N1101
NOS Name	Handle material
Sector	Mining
Sub-Sector	Mining Operation
Occupation	Mine Surveying, Drilling/Cutting, Shot firing/Blasting, Loading and Hauling - Opencast, Specialized Operations, HSE Functions, Loading and Hauling - Underground
NSQF Level	2
Credits	TBD
Version	1.0
Last Reviewed Date	27/01/2022
Next Review Date	27/01/2025
NSQC Clearance Date	27/01/2022

Qualification Pack

MIN/N1702: Follow Health, Safety and Environmental guidelines for Underground Metalliferous Mines (UMM) (Including Mine Vocational Training Rule and Mine Rescue Rule)

Description

This unit is about adhering to health, safety and environmental guidelines in Underground Metalliferous Mines (UMM) during the execution of various tasks and operations and maintenance.

Scope

The scope covers the following :

- Follow work-site health and safety measures
- Follow environmental guidelines

Elements and Performance Criteria

Follow work-site health and safety measures

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

- PC1.** undertake "The Take-5 (Personal Risk Assessment)" before commencement of any work
- PC2.** comply with safety, health and security-related regulations/guidelines at the mine e.g. follow Standard Operating Procedure (SOP) for material handling in underground (U/G) mine
- PC3.** operate various types of fire extinguishers to control different types of fire at a worksite when required
- PC4.** check that roof supporting is as per Systematic Support Plan (SSP) and approved Systematic Support Rules (SSR) while undertaking work in an area
- PC5.** take precaution against occupational health hazards (like dust, water, mine gases etc.) due to U/G working environment
- PC6.** use self-rescue apparatus, appropriately when required
- PC7.** follow appropriate emergency response procedure during emergency such as fire, water inrush, fall of ground etc.
- PC8.** follow precautions against U/G electrical appliances
- PC9.** follow appropriate Standard Operating Procedure while working near any isolated and sealed off area of the mine
- PC10.** follow appropriate safety practices while traveling on U/G haul roads, incase of post blast fumes and misfire
- PC11.** follow the manufacturer's instructions for care and safe operation of mine machinery and equipment
- PC12.** identify the working ventilation district from line diagram of ventilation circuit to direct air to the working face
- PC13.** follow Safety Management Plan (SMP) and Emergency Management Plan (EMP)
- PC14.** follow gas detecting alarm signal on leakage of inflammable gases and laid out procedure to ensure safety



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- PC15.** follow process for reporting any unsafe act/condition in work area to the concerned person
- PC16.** use underground mine communication system
- PC17.** ensure positive isolation near the work place if applicable
- PC18.** use appropriate PPE as per the requirement
- PC19.** maintain hand hygiene by washing hands with alcohol based sanitisers/soap
- PC20.** disinfect the machine/tools before and after work/task
- PC21.** maintain hygiene at the work site
- PC22.** report any symptoms of illness to the shift-incharge
- PC23.** identify six directional hazards at workplace and take decisions accordingly

Follow environmental guidelines

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

- PC24.** identify the environmental impact of mining related operations and follow steps to reduce those impact
- PC25.** follow the mineral conservation practices in U/G mining operations to achieve optimum ore or mineral recovery
- PC26.** ensure that the stowing practices produce minimum disturbance to the surface
- PC27.** ensure that the subgrade ore is carried out to surface and stacked separately at the earmarked place
- PC28.** ensure the productivity of the machine for material/fuel conservation
- PC29.** follow the process for collecting, storing and disposing of the hazardous material and waste (like used oil, lubricant, battery, etc.) in compliance with worksite guidelines
- PC30.** follow the "5-S" practice at work site like cleaning oil from ground (to avoid soil from getting damaged), etc.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** safety guidelines specified by Directorate General of Mine Safety (DGMS)
- KU2.** duties and rights of workers
- KU3.** selection process of person for rescue training
- KU4.** about Systematic Support Plan (SSP) and approved Systematic Support Rules (SSR)
- KU5.** isolation and sealed off area of the mine
- KU6.** various types of gases found in the mine and their effect
- KU7.** self-rescue apparatus and their uses
- KU8.** provision of medical examination (IME & PME) of person employed as per Mines Rules 1955
- KU9.** importance of first aid and hygiene
- KU10.** about different types of machinery used in U/G mines
- KU11.** different types of supporting systems used in U/G mines as per SSP and SSR
- KU12.** about precautions to be taken when handling heavy equipment
- KU13.** various problems/incidents likely to occur
- KU14.** role of Internal Safety Organization, safety committee, workman's inspector and DGMS



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- KU15.** about mine safety standard including light illumination level, noise levels, dust level, pollutants, etc at the work-site
- KU16.** common sources of pollution in the mines and ways to minimize it
- KU17.** various types of fire extinguishers
- KU18.** safety equipment like safety shoes, safety belt, tight fit clothing, hand gloves, safety goggles, Gas Detector, Safety Lamp, Self-Contained Breathing Apparatus, gum boots, ear plugs, Face Mask, etc.
- KU19.** shot-firing / blasting related safety regulations including taking shelter during blasting
- KU20.** emergency response /disaster management plan prepared by the organization as per DGMS guideline
- KU21.** mining area-specific signs, and other safety and emergency signals
- KU22.** the outcome of violation of safety procedures
- KU23.** Take-5 (Personal Risk Assessment) training (DGMS Tech. circulars 2/2014)
- KU24.** rules and regulations for safety and security while handling hazardous materials
- KU25.** safety appliances and rescue equipment
- KU26.** importance and use of various communication system used in UG mines
- KU27.** importance of positive isolation at working site
- KU28.** safety and occupational health policy of organisation
- KU29.** six directional hazard identification process
- KU30.** basic personal and workplace hygiene
- KU31.** importance of FAB (Fresh Air Base)
- KU32.** basic provisions in Mines Creche Rules, 1966 (MCR) for females employed in the mines
- KU33.** the role and responsibilities of rescue room and rescue station and how to contact them in case of emergency
- KU34.** importance of taking shelter at the miner's station during blasting operation
- KU35.** importance of sensitization towards different genders and persons with disabilities (PWD)
- KU36.** importance of following infection control policies, '5-S' practices, and waste management
- KU37.** importance of water/material/energy conservation and management
- KU38.** importance of SMP and EMP, prepared by the organization, as per DGMS guideline

Generic Skills (GS)

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

- GS1.** fill up documentation applicable to one's role
- GS2.** make decisions on the concerned area of work
- GS3.** read basic English language
- GS4.** read and interpret manuals, health, and safety instructions, memos, etc.
- GS5.** use the digital information from machine
- GS6.** use basic applications of a computer
- GS7.** plan and organize the work order and tasks
- GS8.** use reasoning skills to identify and resolve fundamental problems



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GS9. complete the assigned tasks timely

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Follow work-site health and safety measures</i>	24	42	-	17
PC1. undertake "The Take-5 (Personal Risk Assessment)" before commencement of any work	-	2	-	2
PC2. comply with safety, health and security-related regulations/guidelines at the mine e.g. follow Standard Operating Procedure (SOP) for material handling in underground (U/G) mine	1	3	-	-
PC3. operate various types of fire extinguishers to control different types of fire at a worksite when required	1	4	-	1
PC4. check that roof supporting is as per Systematic Support Plan (SSP) and approved Systematic Support Rules (SSR) while undertaking work in an area	1	1	-	-
PC5. take precaution against occupational health hazards (like dust, water, mine gases etc.) due to U/G working environment	1	2	-	1
PC6. use self-rescue apparatus, appropriately when required	-	4	-	1
PC7. follow appropriate emergency response procedure during emergency such as fire, water inrush, fall of ground etc.	1	2	-	1
PC8. follow precautions against U/G electrical appliances	2	2	-	2
PC9. follow appropriate Standard Operating Procedure while working near any isolated and sealed off area of the mine	2	2	-	1
PC10. follow appropriate safety practices while traveling on U/G haul roads, incase of post blast fumes and misfire	2	4	-	-
PC11. follow the manufacturer's instructions for care and safe operation of mine machinery and equipment	1	2	-	1

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. identify the working ventilation district from line diagram of ventilation circuit to direct air to the working face	1	1	-	-
PC13. follow Safety Management Plan (SMP) and Emergency Management Plan (EMP)	1	-	-	-
PC14. follow gas detecting alarm signal on leakage of inflammable gases and laid out procedure to ensure safety	1	2	-	1
PC15. follow process for reporting any unsafe act/condition in work area to the concerned person	-	2	-	1
PC16. use underground mine communication system	-	1	-	-
PC17. ensure positive isolation near the work place if applicable	1	1	-	1
PC18. use appropriate PPE as per the requirement	2	4	-	2
PC19. maintain hand hygiene by washing hands with alcohol based sanitisers/soap	1	1	-	1
PC20. disinfect the machine/tools before and after work/task	1	1	-	-
PC21. maintain hygiene at the work site	1	1	-	1
PC22. report any symptoms of illness to the shift-incharge	1	-	-	-
PC23. identify six directional hazards at workplace and take decisions accordingly	2	-	-	-
<i>Follow environmental guidelines</i>	6	8	-	3
PC24. identify the environmental impact of mining related operations and follow steps to reduce those impact	1	2	-	-
PC25. follow the mineral conservation practices in U/G mining operations to achieve optimum ore or mineral recovery	-	1	-	-
PC26. ensure that the stowing practices produce minimum disturbance to the surface	1	1	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC27. ensure that the subgrade ore is carried out to surface and stacked separately at the earmarked place	1	-	-	1
PC28. ensure the productivity of the machine for material/fuel conservation	1	1	-	-
PC29. follow the process for collecting, storing and disposing of the hazardous material and waste (like used oil, lubricant, battery, etc.) in compliance with worksite guidelines	1	1	-	1
PC30. follow the "5-S" practice at work site like cleaning oil from ground (to avoid soil from getting damaged), etc.	1	2	-	1
NOS Total	30	50	-	20



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National Occupational Standards (NOS) Parameters

NOS Code	MIN/N1702
NOS Name	Follow Health, Safety and Environmental guidelines for Underground Metalliferous Mines (UMM) (Including Mine Vocational Training Rule and Mine Rescue Rule)
Sector	Mining
Sub-Sector	Mining Operation
Occupation	HSE Functions, Mine Surveying, Drilling/Cutting, Shot firing/Blasting, Loading and Hauling - Underground, Specialized Operations, Electrical Services, Mechanical Services
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	30/06/2022
Next Review Date	17/11/2025
NSQC Clearance Date	17/11/2022

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MIN/N1704: Follow Health, Safety, and Environmental guidelines for underground coal mines (Including Mine Vocational Training Rule and Mine Rescue Rule)

Description

This unit is about adhering to health, safety and environmental guidelines in Underground Coal Mines (UCM) during execution of various tasks, operations and maintenance.

Scope

The scope covers the following :

- Follow work-site health and safety measures
- Follow environmental guidelines

Elements and Performance Criteria

Follow work-site health and safety measures

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

- PC1.** follow preventive measures against firedamp, whitedamp, blackdamp etc.
- PC2.** use the flame safety lamp for detecting the methane gas as per Standard Operating Procedure (SOP)
- PC3.** undertake "The Take-5 (Personal Risk Assessment)" before commencement of any work
- PC4.** comply with safety, health and security-related regulations/guidelines at the mine e.g. SOP for material handling in underground (U/G) mine
- PC5.** ensure that oil, grease, canvas or other inflammable material are stored in fire-proof receptacle
- PC6.** ensure that every instrument, apparatus and equipment are DGMS approved before these are used
- PC7.** ensure that Armoured face conveyor (AFC) and chocks must be kept in a straight line for every cycle of operations and tightened up to the setting pressure while keeping it in full contact with the roof, applicable for longwall mining
- PC8.** provide first aid to an injured person
- PC9.** follow safety precautions against spontaneous heating of the coal
- PC10.** operate various types of fire extinguishers to control different types of fire at worksite, if required
- PC11.** ensure that no person is traveling/working/staying under unsupported roof
- PC12.** check that roof supporting is as per Systematic Support Plan (SSP) and approved Systematic Support Rules (SSR) while undertaking work in an area
- PC13.** take precaution against occupational health hazards (like dust, water, mine gases etc.) due to U/G working environment
- PC14.** use self-rescue apparatus appropriately when required
- PC15.** follow Safety Management Plan (SMP) and Emergency Management Plan (EMP)



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- PC16.** follow precautions against U/G electrical appliances
- PC17.** take proper care against damage and accidents while loading, transporting, dismantling and erecting of roof supports
- PC18.** follow appropriate SOP while working near any isolated and sealed off area of the mine
- PC19.** ensure that the roof and the sidewalls of the mine face (or newly exposed area of the mines) have been scaled/dressed properly
- PC20.** take relevant safety precautions during depillaring operation in UCM
- PC21.** follow appropriate safety practices while traveling on U/G haul roads, incase of post blast fumes and misfire
- PC22.** follow the manufacturer's instructions for care and safe operation of mine machinery and equipment
- PC23.** identify the working ventilation district from line diagram of ventilation circuit to direct air to the working face
- PC24.** follow laid out SOP in case of alarm signal for leakage of inflammable gases
- PC25.** follow the process of reporting any unsafe act/condition in the working area to the concerned person
- PC26.** use underground mine communication system
- PC27.** ensure positive isolation near the work place if applicable
- PC28.** use appropriate Personal Protective Equipment (PPE) as per the requirement
- PC29.** maintain hand hygiene by washing hands with alcohol based sanitisers/soap
- PC30.** disinfect the machine/tools before and after work/task
- PC31.** maintain hygiene at the work site
- PC32.** report any symptoms of illness to the shift-incharge
- PC33.** identify six directional hazards at workplace and take decisions accordingly

Follow environmental guidelines

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

- PC34.** identify the environmental impact of mining related operations and follow steps to reduce those impact
- PC35.** follow the mineral conservation practices in U/G mining operations to achieve optimum ore or mineral recovery
- PC36.** ensure that the stowing practices produce minimum disturbance to the surface
- PC37.** ensure that the subgrade coal is carried out to surface and stacked separately at the earmarked place
- PC38.** ensure the productivity of the machine for material/fuel conservation
- PC39.** follow the process for collecting, storing and disposing of the hazardous material and waste (like used oil, lubricant, battery, etc.) in compliance with worksite guidelines
- PC40.** follow the "5-S" practice at work site like cleaning oil from ground (to avoid soil from getting damaged), etc.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:



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- KU1.** safety guidelines specified by Directorate General of Mine Safety (DGMS)
- KU2.** duties and rights of workers
- KU3.** selection process of person for rescue training
- KU4.** about Systematic Support Plan (SSP) and approved Systematic Support Rules (SSR)
- KU5.** isolation and sealed off area of the mine
- KU6.** various types of gases available in the mine and their effects; and their control measures
- KU7.** self-rescue apparatus and their uses
- KU8.** provision of medical examination (Initial Medical Examination (IME) & Periodical Medical Examination (PME)) of a person employed, as per Mines Rules 1955
- KU9.** importance of first aid and hygiene
- KU10.** about different types of machineries used in U/G mines
- KU11.** different types of supporting system used in U/G mines as per SSP and SSR
- KU12.** about precautions to be taken when handling heavy equipment
- KU13.** various problems/incidents likely to occur
- KU14.** role of Internal Safety Organization, safety committee, workman's inspector and DGMS
- KU15.** about mine safety standard including light illumination level, noise levels, dust level, pollutants, etc at the work-site
- KU16.** common sources of pollution in the mines and ways to minimize it
- KU17.** various types of fire extinguishers
- KU18.** safety equipment like safety shoes, safety belt, tight fit clothing, hand gloves, safety goggles, Gas Detector, Safety Lamp, Self-Contained Breathing Apparatus, gum boots, ear plugs, Face Mask, etc.
- KU19.** shot-firing / blasting related safety regulations including taking shelter during blasting
- KU20.** mining area-specific signs, and other safety and emergency signals
- KU21.** the outcome of violation of safety procedures
- KU22.** Take-5 (Personal Risk Assessment) training (DGMS Tech. circulars 2/2014)
- KU23.** hazardous material safety, security rules and regulations
- KU24.** safety appliances and rescue equipment
- KU25.** importance and use of various communication system used in UG mines
- KU26.** importance of positive isolation at working site
- KU27.** safety and occupational health policy of organisation
- KU28.** six directional hazard identification process
- KU29.** basic personal and workplace hygiene
- KU30.** importance of FAB (Fresh Air Base)
- KU31.** basic provisions in Mines Creche Rules, 1966 (MCR) for any females employed in the mines
- KU32.** about basic safety regulations of Coal Mines Regulation, 2017 (CMR)
- KU33.** types of stone dust barrier and its importance
- KU34.** coal dust explosion and its preventive measures
- KU35.** classification of coal mines as per the degree of gassiness of coal seams such as first degree, second degree, and third-degree mines
- KU36.** precautions as per the gassiness of the coal mines



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- KU37.** use of flame safety lamp and its parts
- KU38.** about coal mines occupational disease such as pneumoconiosis or 'black lung' and their preventive measures
- KU39.** Standard of Ventilation as per the section 153 of the CMR 2017
- KU40.** Standard of Lighting as per the section 178 of the CMR 2017
- KU41.** the roles, duties and responsibilities of rescue team members, rescue room and rescue station and how to contact them in case of emergency
- KU42.** the correct steps for conducting any rescue work as per Mine Rescue Rule (MRR)
- KU43.** importance of taking shelter at the miner's station during blasting operation
- KU44.** importance of sensitization towards different genders and persons with disabilities (PWD)
- KU45.** importance of following infection control policies, '5-S' practices, and waste management
- KU46.** importance of water/material/energy conservation and management
- KU47.** importance of SMP and EMP, prepared by the organization, as per DGMS guideline

Generic Skills (GS)

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

- GS1.** fill up documentation applicable to one's role
- GS2.** make decisions on the concerned area of work
- GS3.** read basic English language
- GS4.** read and interpret manuals, health, and safety instructions, memos, etc.
- GS5.** use the digital information from a machine
- GS6.** plan and organize the work order and tasks
- GS7.** use basic applications of the computer
- GS8.** use reasoning skills to identify and resolve fundamental problems
- GS9.** complete the assigned tasks timely

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Follow work-site health and safety measures</i>	24	43	-	14
PC1. follow preventive measures against firedamp, whitedamp, blackdamp etc.	1	1	-	-
PC2. use the flame safety lamp for detecting the methane gas as per Standard Operating Procedure (SOP)	-	1	-	-
PC3. undertake "The Take-5 (Personal Risk Assessment)" before commencement of any work	1	1	-	1
PC4. comply with safety, health and security-related regulations/guidelines at the mine e.g. SOP for material handling in underground (U/G) mine	1	1	-	1
PC5. ensure that oil, grease, canvas or other inflammable material are stored in fire-proof receptacle	-	1	-	-
PC6. ensure that every instrument, apparatus and equipment are DGMS approved before these are used	1	1	-	-
PC7. ensure that Armoured face conveyor (AFC) and chocks must be kept in a straight line for every cycle of operations and tightened up to the setting pressure while keeping it in full contact with the roof, applicable for longwall mining	3	3	-	-
PC8. provide first aid to an injured person	1	2	-	1
PC9. follow safety precautions against spontaneous heating of the coal	1	1	-	-
PC10. operate various types of fire extinguishers to control different types of fire at worksite, if required	-	2	-	-
PC11. ensure that no person is traveling/working/staying under unsupported roof	1	-	-	-
PC12. check that roof supporting is as per Systematic Support Plan (SSP) and approved Systematic Support Rules (SSR) while undertaking work in an area	-	2	-	1

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. take precaution against occupational health hazards (like dust, water, mine gases etc.) due to U/G working environment	-	1	-	1
PC14. use self-rescue apparatus appropriately when required	-	2	-	-
PC15. follow Safety Management Plan (SMP) and Emergency Management Plan (EMP)	1	2	-	1
PC16. follow precautions against U/G electrical appliances	2	2	-	1
PC17. take proper care against damage and accidents while loading, transporting, dismantling and erecting of roof supports	1	2	-	-
PC18. follow appropriate SOP while working near any isolated and sealed off area of the mine	1	1	-	1
PC19. ensure that the roof and the sidewalls of the mine face (or newly exposed area of the mines) have been scaled/dressed properly	1	1	-	-
PC20. take relevant safety precautions during depillaring operation in UCM	-	2	-	1
PC21. follow appropriate safety practices while traveling on U/G haul roads, incase of post blast fumes and misfire	1	1	-	-
PC22. follow the manufacturer's instructions for care and safe operation of mine machinery and equipment	-	1	-	1
PC23. identify the working ventilation district from line diagram of ventilation circuit to direct air to the working face	-	1	-	1
PC24. follow laid out SOP in case of alarm signal for leakage of inflammable gases	1	1	-	-
PC25. follow the process of reporting any unsafe act/condition in the working area to the concerned person	-	1	-	1
PC26. use underground mine communication system	-	1	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC27. ensure positive isolation near the work place if applicable	1	1	-	-
PC28. use appropriate Personal Protective Equipment (PPE) as per the requirement	2	2	-	1
PC29. maintain hand hygiene by washing hands with alcohol based sanitisers/soap	-	1	-	-
PC30. disinfect the machine/tools before and after work/task	1	1	-	-
PC31. maintain hygiene at the work site	1	1	-	-
PC32. report any symptoms of illness to the shift-incharge	1	1	-	-
PC33. identify six directional hazards at workplace and take decisions accordingly	-	1	-	1
<i>Follow environmental guidelines</i>	6	7	-	6
PC34. identify the environmental impact of mining related operations and follow steps to reduce those impact	1	1	-	1
PC35. follow the mineral conservation practices in U/G mining operations to achieve optimum ore or mineral recovery	1	1	-	1
PC36. ensure that the stowing practices produce minimum disturbance to the surface	1	1	-	-
PC37. ensure that the subgrade coal is carried out to surface and stacked separately at the earmarked place	1	1	-	1
PC38. ensure the productivity of the machine for material/fuel conservation	1	1	-	1
PC39. follow the process for collecting, storing and disposing of the hazardous material and waste (like used oil, lubricant, battery, etc.) in compliance with worksite guidelines	-	1	-	1
PC40. follow the "5-S" practice at work site like cleaning oil from ground (to avoid soil from getting damaged), etc.	1	1	-	1



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



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National Occupational Standards (NOS) Parameters

NOS Code	MIN/N1704
NOS Name	Follow Health, Safety, and Environmental guidelines for underground coal mines (Including Mine Vocational Training Rule and Mine Rescue Rule)
Sector	Mining
Sub-Sector	Mining Operation
Occupation	HSE Functions, Mine Surveying, Drilling/Cutting, Shot firing/Blasting, Loading and Hauling - Underground, Specialized Operations, Electrical Services, Mechanical Services
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	30/06/2022
Next Review Date	17/11/2025
NSQC Clearance Date	17/11/2022



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Qualification Pack

MIN/N1102: Assist in Pre-Operational Checks and Servicing of machinery

Description

This OS unit is about providing necessary assistance to operators/ technicians in conducting the pre-operational checks of the HEMM and routine maintenance of HEMM, automotive fleet, and other machinery.

Scope

The scope covers the following :

- Assist in conducting the pre-operational checks of the HEMM
- Assist in conducting routine maintenance of HEMM, automotive fleet, and other machinery

Elements and Performance Criteria

Assist in conducting the pre-operational checks of the HEMM

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

- PC1.** assist in visual inspection of the components of HEMM for cracks and wear, and communicate the same to technician/ operator; parameters- unusual noise, vibration, leak, spillage, accumulation, etc.
- PC2.** inspect the bucket for any crack or damage of tooth points, lock pin, etc.
- PC3.** check the hydraulic oil levels, radiator water levels, anti-freeze levels, etc.
- PC4.** check the track chain pad, bolts, and links in crawler mounted equipment and tighten bolts, as required
- PC5.** check if gauges, indicators, and sensor are fully functional and report the same to technician or operator; parameters- alarm message
- PC6.** check for any leakage in compressor unit, airline, and other components
- PC7.** check for any defect in trailing cable and cable joints
- PC8.** carry all the tools and tackles, required for the assigned job

Assist in conducting routine maintenance of HEMM, automotive fleet, and other machinery

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

- PC9.** clean the work area and assist the Technician in conducting the inspection of HEMM and automotive fleet
- PC10.** follow all the work instruction from Fitter / Technician related to routine maintenance
- PC11.** ensure that no maintenance task on the engine is performed when running or still hot
- PC12.** repair or replace faulty parts as per Technician or Operator's instructions
- PC13.** use various kinds of hand held and power-tools to lift, dismantle or assemble machine components
- PC14.** perform greasing & lubrication, as directed by operator/ technician
- PC15.** assist in changing oil, oil filters, air filters and replacing hoses, belts, water pumps, and other parts
- PC16.** check fan belts, hoses, wiper blades, and other safety equipment



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- PC17.** assist the Technician in maintaining and repairing the automotive fleet, HEMM, and other equipment
- PC18.** check the air in tires, inflate them, change and repair them, as required
- PC19.** respond to road service calls and tow broken-down vehicles
- PC20.** refuel, wash, and clean machinery, as required
- PC21.** assist in welding services, as needed
- PC22.** assist in fitting of pipes and shifting of pumps

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** workplace standing instructions
- KU2.** performance standards and procedure followed in the company
- KU3.** reporting structure of organization
- KU4.** location of tools
- KU5.** spares issuance policy
- KU6.** safety features of machine
- KU7.** work instructions
- KU8.** different greasing points in the equipment
- KU9.** optimum level of water in radiator
- KU10.** the capacity of the machine for different types of oils
- KU11.** capacity of fuel tank in the machine
- KU12.** basics of compressed air operated equipment
- KU13.** basics of electrical driven equipment
- KU14.** application of different types of hand tools
- KU15.** visual checks to identify damage, defects, cracks or leaks beforehand.
- KU16.** fitting of pipes and shifting of pumps

Generic Skills (GS)

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

- GS1.** should be able to write log book and other reports.
- GS2.** read the instructions, guidelines, procedure, rules, signage's related to the works
- GS3.** read the risk management plan of the job
- GS4.** interact effectively with operator in order to clarify instruction and other issues
- GS5.** present reports to concerned authority or person with details
- GS6.** decide on types of tools and tackles to be used
- GS7.** plan work according to the schedule
- GS8.** plan for cleaning of the equipments
- GS9.** identify sources of support that can be availed for problem solving



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Qualification Pack

GS10. analyze, evaluate and apply the information gathered from observations and experience

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Assist in conducting the pre-operational checks of the HEMM</i>	13	21	-	7
PC1. assist in visual inspection of the components of HEMM for cracks and wear, and communicate the same to technician/ operator; parameters- unusual noise, vibration, leak, spillage, accumulation, etc.	1	2	-	-
PC2. inspect the bucket for any crack or damage of tooth points, lock pin, etc.	1	2	-	1
PC3. check the hydraulic oil levels, radiator water levels, anti-freeze levels, etc.	2	3	-	1
PC4. check the track chain pad, bolts, and links in crawler mounted equipment and tighten bolts, as required	2	3	-	1
PC5. check if gauges, indicators, and sensor are fully functional and report the same to technician or operator; parameters- alarm message	2	3	-	1
PC6. check for any leakage in compressor unit, airline, and other components	2	3	-	1
PC7. check for any defect in trailing cable and cable joints	1	2	-	1
PC8. carry all the tools and tackles, required for the assigned job	2	3	-	1
<i>Assist in conducting routine maintenance of HEMM, automotive fleet, and other machinery</i>	17	29	-	13
PC9. clean the work area and assist the Technician in conducting the inspection of HEMM and automotive fleet	1	2	-	1
PC10. follow all the work instruction from Fitter / Technician related to routine maintenance	1	2	-	1
PC11. ensure that no maintenance task on the engine is performed when running or still hot	1	2	-	1



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. repair or replace faulty parts as per Technician or Operator's instructions	1	2	-	1
PC13. use various kinds of hand held and power-tools to lift, dismantle or assemble machine components	1	2	-	1
PC14. perform greasing & lubrication, as directed by operator/ technician	1	2	-	1
PC15. assist in changing oil, oil filters, air filters and replacing hoses, belts, water pumps, and other parts	1	2	-	1
PC16. check fan belts, hoses, wiper blades, and other safety equipment	1	2	-	1
PC17. assist the Technician in maintaining and repairing the automotive fleet, HEMM, and other equipment	1	1	-	1
PC18. check the air in tires, inflate them, change and repair them, as required	2	2	-	1
PC19. respond to road service calls and tow broken-down vehicles	1	1	-	1
PC20. refuel, wash, and clean machinery, as required	2	3	-	1
PC21. assist in welding services, as needed	1	3	-	1
PC22. assist in fitting of pipes and shifting of pumps	2	3	-	-
NOS Total	30	50	-	20



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Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	MIN/N1102
NOS Name	Assist in Pre-Operational Checks and Servicing of machinery
Sector	Mining
Sub-Sector	Mining Operation
Occupation	Mine Surveying, Drilling/Cutting, Shot firing/Blasting, Loading and Hauling - Underground, Specialized Operations, HSE Functions, Loading and Hauling - Opencast
NSQF Level	2
Credits	TBD
Version	1.0
Last Reviewed Date	27/01/2022
Next Review Date	27/01/2025
NSQC Clearance Date	27/01/2022

Qualification Pack

MIN/N1509: Assist in shifting and operation of the underground machines

Description

This unit is about providing necessary assistance to the operator in shifting, placement, cleanliness, and operation of the machine at the place designated by the in-charge, in underground mines.

Scope

The scope covers the following :

- Assist in shifting and placement of the machine
- Assist during the operation of machines
- Clean the equipment

Elements and Performance Criteria

Assist in shifting and placement of the machine

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

- PC1.** follow the work instruction for shifting and positioning of underground machinery such as the loader, jumbo drill, low profile dump trucks, etc.
- PC2.** ensure that the path is free from any obstruction
- PC3.** ensure that no blasting operation is in progress in the area to be shifted
- PC4.** carry the trailing cable while placement of machine in case of electrical driven machines
- PC5.** guide the operator for placement of drill machine at distinctly marked position given by Mechanic/Technician/ surveyor
- PC6.** carry out visual inspection of the area before starting the operation
- PC7.** ensure that the dumping area is free from cracks and subsidence
- PC8.** inspect the unloading area properly for any persons or machinery before starting the dumping operation
- PC9.** ensure that no person is present in the unloading/dumping area or in the crusher/chute area, to ensure the area is safe

Assist during the operation of machines

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

- PC10.** report any abnormality in the machine operation to the operator
- PC11.** perform water spraying on muck pile, if in practice

Clean the equipment

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

- PC12.** clean the operator's cabin and its glasses for better visibility, before starting the machine in a shift
- PC13.** set-up devices and machine parts, using hand tools

Knowledge and Understanding (KU)



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Qualification Pack

The individual on the job needs to know and understand:

- KU1.** performance standards and procedures followed in organization
- KU2.** reporting structure of organization
- KU3.** how to contact the relevant person, in case of queries
- KU4.** location and process for disposal of scrap material
- KU5.** risk management plan for the job
- KU6.** work at height-safety measures
- KU7.** basic knowledge of machine features
- KU8.** code of practice for different operations
- KU9.** health hazards and ergonomics

Generic Skills (GS)

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

- GS1.** write simple records of any observation or incident
- GS2.** note measurement, gauge reading etc. for various process in the prescribed format
- GS3.** read the instructions and signage at work place
- GS4.** interact effectively with machine operator in order to clarify instructions and other issues
- GS5.** alert all persons in the immediate vicinity in case of any emergency
- GS6.** use correct technical terms while communicating with operator
- GS7.** take decision on types of tools to be used
- GS8.** plan work according to the job location
- GS9.** report problems that you cannot resolve to appropriate authority
- GS10.** evaluate the complexity of the task to determine if he/she needs any assistance from the senior
- GS11.** analyze, evaluate and apply the information gathered from observation, experience, reasoning to act efficiently and effectively

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Assist in shifting and placement of the machine</i>	19	34	-	13
PC1. follow the work instruction for shifting and positioning of underground machinery such as the loader, jumbo drill, low profile dump trucks, etc.	2	4	-	1
PC2. ensure that the path is free from any obstruction	2	4	-	2
PC3. ensure that no blasting operation is in progress in the area to be shifted	2	4	-	2
PC4. carry the trailing cable while placement of machine in case of electrical driven machines	2	5	-	2
PC5. guide the operator for placement of drill machine at distinctly marked position given by Mechanic/Technician/ surveyor	2	4	-	2
PC6. carry out visual inspection of the area before starting the operation	2	4	-	1
PC7. ensure that the dumping area is free from cracks and subsidence	1	1	-	1
PC8. inspect the unloading area properly for any persons or machinery before starting the dumping operation	3	4	-	1
PC9. ensure that no person is present in the unloading/dumping area or in the crusher/chute area, to ensure the area is safe	3	4	-	1
<i>Assist during the operation of machines</i>	4	8	-	3
PC10. report any abnormality in the machine operation to the operator	2	4	-	1
PC11. perform water spraying on muck pile, if in practice	2	4	-	2
<i>Clean the equipment</i>	7	8	-	4



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. clean the operator's cabin and its glasses for better visibility, before starting the machine in a shift	4	4	-	2
PC13. set-up devices and machine parts, using hand tools	3	4	-	2
NOS Total	30	50	-	20



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Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	MIN/N1509
NOS Name	Assist in shifting and operation of the underground machines
Sector	Mining
Sub-Sector	Mining Operation
Occupation	Loading and Hauling - Underground, Drilling/Cutting, Shot firing/Blasting, Loading and Hauling - Opencast, Specialized Operations, HSE Functions, Mine Surveying
NSQF Level	2
Credits	TBD
Version	1.0
Last Reviewed Date	27/01/2022
Next Review Date	27/01/2025
NSQF Clearance Date	27/01/2022

Qualification Pack

MIN/N1104: Assist in installation and maintenance of electrical systems and equipment

Description

This unit is about assisting Mine Electrician in the installation, operation, and maintenance of the electrical supply system and electrical equipment.

Scope

The scope covers the following :

- Assist in installation & operation of the electrical supply system and electrical equipment
- Assist in the maintenance of electrical supply system and electrical equipment

Elements and Performance Criteria

Assist in installation & operation of the electrical supply system and electrical equipment

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

- PC1.** follow all the work instruction from Mine Electrician and assist him/her for installation and operation of electrical supply and electrical equipment such as transformers, generators, circuit breakers, etc.
- PC2.** use necessary tools such as screw drivers, pliers, etc. and equipment such as ladder for working at height, cables of required specifications, etc.
- PC3.** put Lock Out Tag Out (LOTO) label and ensure zero energy state before starting the job
- PC4.** ensure proper laying of cable to protect from any damage
- PC5.** ensure proper housekeeping of the area after completion of the job and disposal of the scrap material, as per the guideline of the organization

Assist in the maintenance of electrical supply system and electrical equipment

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

- PC6.** assist Mine Electrician in maintenance of transformers, generators, circuit breakers, isolators, bus bars, control panel, switch board, wiring, protective relays etc.
- PC7.** ensure cleaning of electronic components, as per instruction from Mine Electrician or manufacturer's manual.
- PC8.** assist in replacing the spare parts, as per Mine Electrician's instructions
- PC9.** replenish/change the consumables, as per service manual/Mine Electrician's instructions
- PC10.** interpret displayed messages and outputs and share the same with Mine Electrician
- PC11.** perform a visual inspection to verify proper functioning of electronic/electrical components, as per manufacturer's manual
- PC12.** ensure proper earthing for welding machines and hand tools, as required

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:



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- KU1.** time required to solve the problem
- KU2.** workplace standing instructions & standard operating procedures (SOP)
- KU3.** different types of electrical requirement at mines
- KU4.** the reporting structure of the organization
- KU5.** location of tools
- KU6.** process for storage and disposal of waste material
- KU7.** safety policy of the company
- KU8.** the basic principle of electrical energy
- KU9.** operation and maintenance procedures for electrical systems
- KU10.** different electrical specifications
- KU11.** symbols used in electrical/electronics/instrumentation circuit diagrams
- KU12.** various components of electrical/electronics/instrumentation systems
- KU13.** importance of safety devices, such as circuit protection, fuses, safety switches, etc.
- KU14.** different types of tools and electrical equipment and their usage
- KU15.** techniques to clean/service different electrical/electronic/instrumentation parts
- KU16.** electrical hazards and their prevention techniques
- KU17.** the process of energy isolation
- KU18.** different types of cables
- KU19.** importance of LOTO
- KU20.** precautions to be taken while working at height
- KU21.** various types of transformers and transformer oil
- KU22.** importance of cable jointing, soldering, insulation, etc.
- KU23.** earthing of equipment

Generic Skills (GS)

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

- GS1.** note down observations (if any)
- GS2.** note measurement and readings from equipment panel for various processes
- GS3.** write requisition to internal departments on the requirement of tools, gauges etc.
- GS4.** read the instructions and symbols given at workplace
- GS5.** read information sent by the others
- GS6.** read the risk management plan of the job
- GS7.** read equipment manuals and process documents
- GS8.** communicate effectively with the team members
- GS9.** comprehend the information given by speaker
- GS10.** make decisions in case of emergency and if Mine Electrician or Supervisor is not available
- GS11.** plan work according to the schedule and place given by Mine Electrician

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Assist in installation & operation of the electrical supply system and electrical equipment</i>	13	22	-	8
PC1. follow all the work instruction from Mine Electrician and assist him/her for installation and operation of electrical supply and electrical equipment such as transformers, generators, circuit breakers, etc.	3	5	-	2
PC2. use necessary tools such as screw drivers, pliers, etc. and equipment such as ladder for working at height, cables of required specifications, etc.	3	5	-	2
PC3. put Lock Out Tag Out (LOTO) label and ensure zero energy state before starting the job	3	4	-	2
PC4. ensure proper laying of cable to protect from any damage	2	4	-	1
PC5. ensure proper housekeeping of the area after completion of the job and disposal of the scrap material, as per the guideline of the organization	2	4	-	1
<i>Assist in the maintenance of electrical supply system and electrical equipment</i>	17	28	-	12
PC6. assist Mine Electrician in maintenance of transformers, generators, circuit breakers, isolators, bus bars, control panel, switch board, wiring, protective relays etc.	2	4	-	2
PC7. ensure cleaning of electronic components, as per instruction from Mine Electrician or manufacturer's manual.	2	4	-	1
PC8. assist in replacing the spare parts, as per Mine Electrician's instructions	2	4	-	1
PC9. replenish/change the consumables, as per service manual/Mine Electrician's instructions	2	4	-	2
PC10. interpret displayed messages and outputs and share the same with Mine Electrician	3	4	-	2



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MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP



NCVET
कौशल गुणवत्ता प्रगति



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Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. perform a visual inspection to verify proper functioning of electronic/electrical components, as per manufacturer’s manual	3	4	-	2
PC12. ensure proper earthing for welding machines and hand tools, as required	3	4	-	2
NOS Total	30	50	-	20

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	MIN/N1104
NOS Name	Assist in installation and maintenance of electrical systems and equipment
Sector	Mining
Sub-Sector	Mining Operation
Occupation	Mine Surveying, Drilling/Cutting, Shot firing/Blasting, Loading and Hauling - Opencast, Loading and Hauling - Underground, Specialized Operations, HSE Functions, Electrical Services
NSQF Level	2
Credits	TBD
Version	1.0
Last Reviewed Date	27/01/2022
Next Review Date	27/01/2025
NSQF Clearance Date	27/01/2022

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 the proportion of marks for Theory and Skills Practical for each Element/ PC.
2. The assessment for the theory part will be based on the knowledge bank of questions created by the SSC.
3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
4. Individual assessment agencies will create unique question papers for the theory part for each candidate at each examination/training center (as per assessment criteria below).
5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training center based on these criteria.



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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.

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
MIN/N1101.Handle material	30	50	-	20	100	50
Total	30	50	-	20	100	50

Elective: 1 Metal

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
MIN/N1702.Follow Health, Safety and Environmental guidelines for Underground Metalliferous Mines (UMM) (Including Mine Vocational Training Rule and Mine Rescue Rule)	30	50	-	20	100	50
Total	30	50	0	20	100	50

Elective: 2 Coal



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National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
MIN/N1704.Follow Health, Safety, and Environmental guidelines for underground coal mines (Including Mine Vocational Training Rule and Mine Rescue Rule)	30	50	-	20	100	50
Total	30	50	0	20	100	50

Optional: 1 Mechanical

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
MIN/N1102.Assist in Pre-Operational Checks and Servicing of machinery	30	50	-	20	100	40
Total	30	50	0	20	100	40

Optional: 2 HEMM

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
MIN/N1509.Assist in shifting and operation of the underground machines	30	50	-	20	100	40
Total	30	50	0	20	100	40

Optional: 3 Electrical



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National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
MIN/N1104.Assist in installation and maintenance of electrical systems and equipment	30	50	-	20	100	40
Total	30	50	0	20	100	40



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Qualification Pack

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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Qualification Pack

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.