

Qualification Pack



Wheel Loader Operator

QP Code: IES/Q0105

Version: 2.0

NSQF Level: 4

Infrastructure Equipment Skill Council || Avik Royale - First Floor (Next of Vijaya Bank), No.6, 50 feet
Main Road, Avalahalli Extension, Girinagar
Bengaluru 560026

Qualification Pack

Contents

IES/Q0105: Wheel Loader Operator	3
<i>Brief Job Description</i>	3
Applicable National Occupational Standards (NOS)	3
<i>Compulsory NOS</i>	3
<i>Qualification Pack (QP) Parameters</i>	3
IES/N0113: Carry out pre-operation checks on wheel loader	5
IES/N0114: Operate a wheel loader	11
IES/N0115: Carry out maintenance and troubleshooting on the wheel loader	19
IES/N7601: Comply with worksite health and safety guidelines	25
Assessment Guidelines and Weightage	28
<i>Assessment Guidelines</i>	28
<i>Assessment Weightage</i>	29
Acronyms	30
Glossary	31

Qualification Pack

IES/Q0105: Wheel Loader Operator

Brief Job Description

A wheel loader operator operates the equipment for efficient transportation of loads to appropriate storage areas or trucks, minimizing contamination. He is also responsible for the maintenance of the equipment.

Personal Attributes

This job requires the individual to have good hand eye coordination as also comply with industry regulations. Willingness to work, strong work ethics, and courteous behaviour with co workers are equally desirable. He should also be physically agile, strong, have good eye sight and not suffer from colour-blindness.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [IES/N0113: Carry out pre-operation checks on wheel loader](#)
2. [IES/N0114: Operate a wheel loader](#)
3. [IES/N0115: Carry out maintenance and troubleshooting on the wheel loader](#)
4. [IES/N7601: Comply with worksite health and safety guidelines](#)

Qualification Pack (QP) Parameters

Sector	Infrastructure Equipment
Sub-Sector	Equipment Operations
Occupation	Operator
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/ 8342.2101

Qualification Pack

Minimum Educational Qualification & Experience	8th Class (OR • 10th Class Pass + ITI (1year after Class 10th) with 1 year of relevant experience • OR • 10th Class Pass + ITI (2years after Class 10th) • OR • 10th Class Pass and pursuing continuous regular schooling • OR • 3 Year Diploma (After 10th)12th Class Pass with 6 months of relevant experience • OR • Previous relevant Qualification of NSQF Level 3 with 2 years of relevant experience) with 2 Years of experience
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	Light Commercial Vehicle Driving License (LCV) is preferred
Minimum Job Entry Age	18 Years
Last Reviewed On	26/05/2022
Next Review Date	31/05/2025
NSQC Approval Date	26/05/2022
Version	2.0
Reference code on NQR	2022/IS/IESC/05892
NQR Version	1.0

Qualification Pack

IES/N0113: Carry out pre-operation checks on wheel loader

Description

This unit provides Performance Criteria, Knowledge & Understanding and Skills & Ability for activities that need to be carried out to prepare the wheel loader for a shift.

Scope

The scope covers the following :

- This unit/task covers the following: Perform Pre-operation checks Documentation and Reporting

Elements and Performance Criteria

Perform Pre - Operation Checks

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

- PC1.** ensure that visual inspections of the body components for cracks are performed
- PC2.** regularly clean the dust in the air filter bowl
- PC3.** examine the bucket cutting edge and the lift for signs of excessive wear
- PC4.** examine the moldboard, tilt cylinders, pipes, and hoses for leaks or damage
- PC5.** make certain that the loader's structure and arms are not damaged
- PC6.** check for any damage or leaking in the transmission, fuel tank, axles, and hydraulic tanks
- PC7.** check sure the oil levels in the engine, hydraulic tank, fuel tank, gearbox, radiant coolant, and braking are within the manufacturer's specifications
- PC8.** periodically recharge batteries
- PC9.** drain moisture from air tanks in case it is equipped with air brakes
- PC10.** carry out inspections to ensure that the parking brake, main horn, reverse horn, and headlights are in good working order
- PC11.** get a visual inspection to check the different controls, gauges, warning lights, and other safety devices
- PC12.** wear seatbelt and adjust the seat position
- PC13.** clean the dust bowls of the air filters and inspect the gasket and inner filter
- PC14.** drain the water and debris from the fuel tank
- PC15.** ensure that all greasing pins and pivots points are appropriately greased
- PC16.** before starting the wheel loader, go all the way around it to make sure no one is beneath or on it

Documentation and Reporting

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

- PC17.** ensure that all safety and maintenance stickers are visible on the equipment
- PC18.** maintain a inspection/maintenance logbook in which all operations completed prior to starting the wheel loader are recorded
- PC19.** notify the supervisor immediately if a defect is discovered that is outside the scope of the position

Qualification Pack

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the organizations procedures and guidelines related to wheel loader operations
- KU2.** job-specific documentation, such as a daily maintenance checklist, an operation handbook, and a components manual, as well as their importance
- KU3.** a list of typical occupational hazards and techniques for dealing with them
- KU4.** safety policy of the company
- KU5.** emergency organization of the specific work site
- KU6.** the risks and consequences of not adhering to established processes and job instructions
- KU7.** the performance standards & procedures followed in the company
- KU8.** reporting structure in the company
- KU9.** escalation matrix for reporting unresolved problems
- KU10.** schedule for resolving the complaint/problem
- KU11.** implications of delays in process to the company
- KU12.** cost of equipment and loss for the company that result from damage of equipment and direct/ indirect cost of accidents
- KU13.** work objective and review procedure with supervisor for obtaining/ providing performance comments
- KU14.** location of tools
- KU15.** contact person in case of queries on procedure or products
- KU16.** the location and procedure for storing and disposing of waste
- KU17.** different types of wheel loaders and their applications and functions
- KU18.** responsibilities of the assigned job role
- KU19.** the operation of the engine and transmission, as well as its usage and purpose
- KU20.** principles of friction
- KU21.** steering techniques and the proper way to steer on a slope
- KU22.** the relevance of greasing and lubricating wheel loader elements that require routine maintenance
- KU23.** process for adding fuel and coolant to the machine
- KU24.** method of greasing and lubrication, read and understand the guidelines in the safety and operational manual of the manufacturer
- KU25.** the instrument panel, its placement and its functionality
- KU26.** the various types of hand signals used on the site
- KU27.** controls, levers, and switches are required to effectively operate the wheel loader
- KU28.** controls, levers and switches in order to operate the wheel loader appropriately
- KU29.** optimal engine oil pressure, radiator coolant temperature
- KU30.** visual inspections are performed ahead of time to detect damage, flaws, cracks or leaks
- KU31.** optimum functioning condition of wheel loader components

Generic Skills (GS)

Qualification Pack

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

- GS1.** keep record of any deviations or occurrences that do not conform to the specified standards
- GS2.** read and comprehend basic english to read manuals of operations
- GS3.** read instructions, guidelines/procedures/rules related to the worksite and equipment operations
- GS4.** give clear instructions to co-workers, subordinates and other personnel
- GS5.** when talking with your supervisor, utilize the right technical word
- GS6.** decide when to conduct maintenance checks
- GS7.** work with supervisors/ team mates to carry out work related tasks
- GS8.** plan work according to the required schedule and location
- GS9.** plan for cleaning and lubricating the backhoe loader every day
- GS10.** deliver first-rate service to ensure client satisfaction
- GS11.** report problems that you cannot resolve to appropriate authority
- GS12.** identify sources of support that can be availed for problem solving for various kinds of problems
- GS13.** identify 'cause and effect' relations in own area of work
- GS14.** examine, evaluate, and apply knowledge acquired from observation, experience, logic, or communication in order to act efficiently

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform Pre - Operation Checks</i>	9	54	-	-
PC1. ensure that visual inspections of the body components for cracks are performed	1	3	-	-
PC2. regularly clean the dust in the air filter bowl	1	3	-	-
PC3. examine the bucket cutting edge and the lift for signs of excessive wear	-	4	-	-
PC4. examine the moldboard, tilt cylinders, pipes, and hoses for leaks or damage	1	3	-	-
PC5. make certain that the loader's structure and arms are not damaged	-	4	-	-
PC6. check for any damage or leaking in the transmission, fuel tank, axles, and hydraulic tanks	1	3	-	-
PC7. check sure the oil levels in the engine, hydraulic tank, fuel tank, gearbox, radiant coolant, and braking are within the manufacturer's specifications	-	4	-	-
PC8. periodically recharge batteries	1	3	-	-
PC9. drain moisture from air tanks in case it is equipped with air brakes	1	3	-	-
PC10. carry out inspections to ensure that the parking brake, main horn, reverse horn, and headlights are in good working order	-	4	-	-
PC11. get a visual inspection to check the different controls, gauges, warning lights, and other safety devices	1	3	-	-
PC12. wear seatbelt and adjust the seat position	-	3	-	-
PC13. clean the dust bowls of the air filters and inspect the gasket and inner filter	1	3	-	-
PC14. drain the water and debris from the fuel tank	-	4	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC15. ensure that all greasing pins and pivots points are appropriately greased	1	3	-	-
PC16. before starting the wheel loader, go all the way around it to make sure no one is beneath or on it	-	4	-	-
<i>Documentation and Reporting</i>	6	6	-	-
PC17. ensure that all safety and maintenance stickers are visible on the equipment	2	2	-	-
PC18. maintain a inspection/maintenance logbook in which all operations completed prior to starting the wheel loader are recorded	2	2	-	-
PC19. notify the supervisor immediately if a defect is discovered that is outside the scope of the position	2	2	-	-
NOS Total	15	60	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	IES/N0113
NOS Name	Carry out pre-operation checks on wheel loader
Sector	Infrastructure Equipment
Sub-Sector	Equipment Operations
Occupation	Operator
NSQF Level	4
Credits	TBD
Version	2.0
Last Reviewed Date	26/05/2022
Next Review Date	31/05/2025
NSQC Clearance Date	26/05/2022

Qualification Pack

IES/N0114: Operate a wheel loader

Description

This unit provides Performance Criteria, Knowledge & Understanding and Skills & Ability for activities that are required for operating a wheel loader

Scope

The scope covers the following :

- This unit/task covers the following:
- Wheel loader start-up operations
- Load lifting and dumping
- Wheel Loader shut-down process
- Documentation and Reporting

Elements and Performance Criteria

Wheel Loader start-up operations

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

- PC1.** plan and organize the job according to given instructions
- PC2.** examine the jobsite for loose soil, concealed deep ditches, or marshy spots where the backhoe might become trapped
- PC3.** perform all pre-use and on-the-job inspections
- PC4.** wear a seatbelt and adjust the seat position
- PC5.** start the engine using the pushbutton switch and key switch
- PC6.** use the priming pump and pre-heater to start the engine when it's cold outside
- PC7.** calculate the machine's speed and direction based on the function given
- PC8.** in the event of a crisis, press the emergency stop button to turn off all power to the wheel loader, according to the operator's handbook

Load lifting and dumping

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

- PC9.** to load, unload, transport, or stack items, move levers or controls that drive lifting equipment such as forklifts, lift beams with swivelhooks, hoists, or elevating platforms
- PC10.** inspect product load for accuracy and confirm with the supervisor
- PC11.** examine the product load for accuracy and check with the supervisor
- PC12.** material should be placed beneath, over, or around loaded pallets, skids, or boxes, in accordance with the work description and safety precautions
- PC13.** secure items for transfer to specified places in accordance with supervisory instructions
- PC14.** safely move load around the facility to ensure timely and complete delivery
- PC15.** move controls to drive equipment that transports goods between loading, processing, and storage locations
- PC16.** when necessary, alert personnel to discharge, dump, or level items

Qualification Pack

- PC17.** hook tow trucks to trailer hitches and fasten attachments, such as graders, plows, rollers, or winch cables to tractors, using hitch pins as per SOP
- PC18.** turn valves and open chutes to dump, spray, or release materials from dump cars or storage bins into hoppers
- PC19.** estimate the appropriate amount of load to be loaded on the wheel loader to prevent over loading the machine during operations
- PC20.** after completing operations, switch off the ignition

Wheel Loader shut- down process

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

- PC21.** after use, ensure that the gear is in the neutral position
- PC22.** after using the equipment, leave it idle for a few minutes
- PC23.** remove attachments after use
- PC24.** removed attachments should be cleaned and stored in a safe place
- PC25.** ensure that the machine is shut down and secured when left unattended
- PC26.** in the event of an equipment failure, run the machine in limp back mode according to the instructions in the operators handbook

Documentation and Reporting

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

- PC27.** follow reporting procedures as laid down by the employer
- PC28.** in a timely way, complete all documents in accordance with the required requirements
- PC29.** In a timely way, report and escalate problems/incidents as needed
- PC30.** notify the supervisor immediately if a defect is discovered that is outside the scope of the position

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** responsibilities of the assigned job role
- KU2.** job specific documents e.g. daily maintenance checklist and importance of the same
- KU3.** common hazards in the work area and workplace procedures to deal with them
- KU4.** safety policy of the company
- KU5.** emergency organization of the specific work site
- KU6.** the risk and consequences of failing to follow clearly specified procedures/work instructions
- KU7.** the performance standards & procedures followed in the company
- KU8.** reporting structure in the company
- KU9.** escalation matrix for reporting unresolved problems
- KU10.** schedule for resolving the complaint/problem
- KU11.** the consequences of process delays for the firm
- KU12.** cost of equipment and loss for the company that result from damage of equipment and direct/ indirect cost of accidents

Qualification Pack

- KU13.** work goal and review procedure with supervisor for obtaining/giving feedback on performance process
- KU14.** location of tools
- KU15.** if you've any questions about the procedure , please contact to the respect individual
- KU16.** location and procedure for waste storage and disposal
- KU17.** introduction to the engine and transmission, as well as their use and purpose
- KU18.** principles of friction
- KU19.** steering mechanisms and correct way of steering on slopes
- KU20.** significance of greasing and oiling parts of the wheel loader
- KU21.** the instrument panel, its position, and its functionality
- KU22.** the method of using the limp home function
- KU23.** controls, levers and switches in order to operate the wheel loader properly
- KU24.** optimal working condition of wheel loaders
- KU25.** optimal engine oil pressure, radiator coolant temperature
- KU26.** significance of stabilizers while digging
- KU27.** visual checks to identify damage, defects or leaks beforehand
- KU28.** general safety rules for operating a wheel loader
- KU29.** all signage, safety signs and other emergency signals
- KU30.** the position and operation of the emergency stop button

Generic Skills (GS)

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

- GS1.** keep a record of any deviations or occurrences that do not conform to the specified standards
- GS2.** read and comprehend basic english to read manuals of operations
- GS3.** understand stakes and signs on the road and on the job site
- GS4.** read instructions, guidelines/procedures/rules related to the worksite and equipment operations
- GS5.** communicate efficiently with co-workers, subordinates to explain instructions and other concerns
- GS6.** when talking with your supervisor, utilize the right technical words
- GS7.** examine the excavator for any damage or defective components and take appropriate measures
- GS8.** decide when to perform appropriate driving operations i e forward, reverse, 'u' turn, tight spot
- GS9.** carry out job duties in accordance with the operator's/other supervisors' directions and deadlines
- GS10.** plan work according to the required schedule and location
- GS11.** deliver first-rate service to ensure client satisfaction
- GS12.** identify immediate or temporary solutions to resolve mechanical issues

Qualification Pack

- GS13.** judge when to seek assistance from supervisor
- GS14.** identify possible ways to improve operational efficiency
- GS15.** suggest methods to avoid accidents/errors while operating machine
- GS16.** examine, evaluate, and apply knowledge acquired from observation, experience, logic, or communication in order to act efficiently

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Wheel Loader start-up operations</i>	2	21	-	-
PC1. plan and organize the job according to given instructions	-	3	-	-
PC2. examine the jobsite for loose soil, concealed deep ditches, or marshy spots where the backhoe might become trapped	1	3	-	-
PC3. perform all pre-use and on-the-job inspections	-	3	-	-
PC4. wear a seatbelt and adjust the seat position	1	3	-	-
PC5. start the engine using the pushbutton switch and key switch	-	3	-	-
PC6. use the priming pump and pre-heater to start the engine when it's cold outside	-	2	-	-
PC7. calculate the machine's speed and direction based on the function given	-	2	-	-
PC8. in the event of a crisis, press the emergency stop button to turn off all power to the wheel loader, according to the operator's handbook	-	2	-	-
<i>Load lifting and dumping</i>	4	20	-	-
PC9. to load, unload, transport, or stack items, move levers or controls that drive lifting equipment such as forklifts, lift beams with swivelhooks, hoists, or elevating platforms	1	3	-	-
PC10. inspect product load for accuracy and confirm with the supervisor	-	1	-	-
PC11. examine the product load for accuracy and check with the supervisor	1	1	-	-
PC12. material should be placed beneath, over, or around loaded pallets, skids, or boxes, in accordance with the work description and safety precautions	-	1	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. secure items for transfer to specified places in accordance with supervisory instructions	-	1	-	-
PC14. safely move load around the facility to ensure timely and complete delivery	-	1	-	-
PC15. move controls to drive equipment that transports goods between loading, processing, and storage locations	1	1	-	-
PC16. when necessary, alert personnel to discharge, dump, or level items	-	1	-	-
PC17. hook tow trucks to trailer hitches and fasten attachments, such as graders, plows, rollers, or winch cables to tractors, using hitch pins as per SOP	1	3	-	-
PC18. turn valves and open chutes to dump, spray, or release materials from dump cars or storage bins into hoppers	-	3	-	-
PC19. estimate the appropriate amount of load to be loaded on the wheel loader to prevent over loading the machine during operations	-	3	-	-
PC20. after completing operations, switch off the ignition	-	1	-	-
<i>Wheel Loader shut- down process</i>	1	14	-	-
PC21. after use, ensure that the gear is in the neutral position	-	3	-	-
PC22. after using the equipment, leave it idle for a few minutes	-	3	-	-
PC23. remove attachments after use	-	3	-	-
PC24. removed attachments should be cleaned and stored in a safe place	1	1	-	-
PC25. ensure that the machine is shut down and secured when left unattended	-	1	-	-
PC26. in the event of an equipment failure, run the machine in limp back mode according to the instructions in the operators handbook	-	3	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Documentation and Reporting</i>	5	8	-	-
PC27. follow reporting procedures as laid down by the employer	1	2	-	-
PC28. in a timely way, complete all documents in accordance with the required requirements	2	2	-	-
PC29. In a timely way, report and escalate problems/incidents as needed	1	2	-	-
PC30. notify the supervisor immediately if a defect is discovered that is outside the scope of the position	1	2	-	-
NOS Total	12	63	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	IES/N0114
NOS Name	Operate a wheel loader
Sector	Infrastructure Equipment
Sub-Sector	Equipment Operations
Occupation	Operator
NSQF Level	4
Credits	TBD
Version	2.0
Last Reviewed Date	26/05/2022
Next Review Date	31/05/2025
NSQC Clearance Date	26/05/2022

Qualification Pack

IES/N0115: Carry out maintenance and troubleshooting on the wheel loader

Description

This unit provides Performance Criteria, Knowledge & Understanding and Skills & Ability for activities that are required for performing routine maintenance and troubleshooting on the wheel loader.

Scope

The scope covers the following :

- This unit/task covers the following:
- Routine maintenance
- Basic diagnostics and troubleshooting
- Reporting and documentation

Elements and Performance Criteria

Routine maintenance

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

- PC1.** keep note of machine running hours to determine the best service plan
- PC2.** regularly clean the dust in the air filter bowl
- PC3.** keep the footplates and steps clear of mud, grime, snow, dirt and oil
- PC4.** every day, top up coolants, lubricants and fluids
- PC5.** grease all greasing pins and pivot points everyday
- PC6.** check battery levels and terminal condition, and tighten the loose terminals if necessary
- PC7.** check and maintain the tyre rims, air pressure, wheel nits and treads in accordance with the manufacturer's recommendations

Basic diagnostics and troubleshooting

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

- PC8.** before performing any repair, be certain that the machine is on firm and level ground
- PC9.** fill out daily/weekly maintenance sheets in a timely and consistent manner as directed by the organization
- PC10.** ensure that appropriate props/support devices are utilized and that the bucket is not lifted while doing maintenance
- PC11.** make certain that no engine repair is conducted while the engine is running or hot
- PC12.** if a fault is found that is outside of the scope of the position, notify the operator immediately
- PC13.** diagnose the problem
- PC14.** handle and dispose waste based on environmental guidelines at the work place
- PC15.** adhere to the reporting procedures established by the employer
- PC16.** complete all documentation in the prescribed standards in a timely manner
- PC17.** report and escalate problems/incidents as needed in a timely manner

Qualification Pack

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** job specific documents e.g. daily maintenance checklist and importance of the same
- KU2.** a list of typical occupational hazards and techniques for dealing with them
- KU3.** safety policy of the company
- KU4.** emergency organization of the specific work site
- KU5.** risk and impact of not following defined procedures/ work instructions
- KU6.** the company's performance criteria and processes
- KU7.** reporting structure in the company
- KU8.** escalation matrix for reporting unresolved problems
- KU9.** schedule for resolving the complaint/problem
- KU10.** the consequences of process delays for the firm
- KU11.** cost of equipment and loss for the company that result from damage of equipment and direct/ indirect cost of accidents
- KU12.** work objective and review method with supervisor for obtaining/giving feedback on performance process
- KU13.** location of tools
- KU14.** if you have any questions about the procedure , please contact the administrator
- KU15.** location and procedure for waste storage and disposal
- KU16.** responsibilities of the assigned job role
- KU17.** control and switches needed to operate the wheel loader appropriately
- KU18.** the fundamental physics and mechanics at work in the different operations of the wheel loader
- KU19.** common defects and general causes of breakdown
- KU20.** response to emergency situations
- KU21.** the optimal levels of control indicators e g fuel gauge, engine oil pressure and temperature
- KU22.** potential causes of any unusual noises coming from the engine

Generic Skills (GS)

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

- GS1.** keep a record of any deviations or occurrences that do not conform to the specified standards
- GS2.** read and comprehend basic english to read manuals of operations
- GS3.** read instructions, guidelines/procedures/rules related to the worksite and equipment operations
- GS4.** give clear instructions to co-workers, subordinates and other personnel
- GS5.** use correct technical terms while interacting with supervisor
- GS6.** decide when to conduct maintenance checks
- GS7.** when talking with your supervisor, utilize the right technical words

Qualification Pack

- GS8.** work with supervisors/ team mates to carry out work related tasks
- GS9.** plan work according to the required schedule and location
- GS10.** plan for regular maintenance on a daily basis before machine operations
- GS11.** deliver first-rate service to ensure client satisfaction
- GS12.** identify immediate or temporary solutions to resolve mechanical issues
- GS13.** discover when to seek assistance from supervisor
- GS14.** investigate possible methods to enhance operational efficiency
- GS15.** check for damages and diagnose common problems in the excavator and take relevant action
- GS16.** examine, evaluate, and apply knowledge acquired from observation, experience, logic, or communication in order to act efficiently

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Routine maintenance</i>	2	16	-	-
PC1. keep note of machine running hours to determine the best service plan	1	1	-	-
PC2. regularly clean the dust in the air filter bowl	-	3	-	-
PC3. keep the footplates and steps clear of mud, grime, snow, dirt and oil	1	3	-	-
PC4. every day, top up coolants, lubricants and fluids	-	1	-	-
PC5. grease all greasing pins and pivot points everyday	-	2	-	-
PC6. check battery levels and terminal condition, and tighten the loose terminals if necessary	-	3	-	-
PC7. check and maintain the tyre rims, air pressure, wheel nits and treads in accordance with the manufacturer's recommendations	-	3	-	-
<i>Basic diagnostics and troubleshooting</i>	5	12	-	-
PC8. before performing any repair, be certain that the machine is on firm and level ground	1	3	-	-
PC9. fill out daily/weekly maintenance sheets in a timely and consistent manner as directed by the organization	1	1	-	-
PC10. ensure that appropriate props/support devices are utilized and that the bucket is not lifted while doing maintenance	-	1	-	-
PC11. make certain that no engine repair is conducted while the engine is running or hot	-	1	-	-
PC12. if a fault is found that is outside of the scope of the position, notify the operator immediately	1	1	-	-
PC13. diagnose the problem	-	1	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. handle and dispose waste based on environmental guidelines at the work place	-	1	-	-
PC15. adhere to the reporting procedures established by the employer	1	1	-	-
PC16. complete all documentation in the prescribed standards in a timely manner	1	1	-	-
PC17. report and escalate problems/incidents as needed in a timely manner	-	1	-	-
NOS Total	7	28	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	IES/N0115
NOS Name	Carry out maintenance and troubleshooting on the wheel loader
Sector	Infrastructure Equipment
Sub-Sector	Equipment Operations
Occupation	Operator
NSQF Level	4
Credits	TBD
Version	2.0
Last Reviewed Date	26/05/2022
Next Review Date	31/05/2025
NSQC Clearance Date	26/05/2022

Qualification Pack

IES/N7601: Comply with worksite health and safety guidelines

Description

This unit is about adhering to health and safety requirements at the worksite during equipment operations.

Scope

The scope covers the following :

- Worksite health and safety

Elements and Performance Criteria

Worksite 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 at the work site
- PC2.** use personal protective equipment (ppe) and other safety gear as applicable to the equipment and the worksite
- PC3.** Follow safety measures during operations to ensure that the health and safety of self or others (including members of the public) is not at risk
- PC4.** Carry out operations as per the manufacturer's and worksite related health and safety guidelines
- PC5.** Handle the transport, storage and disposal of hazardous materials and waste in compliance with worksite health, safety and environmental guidelines
- PC6.** operate various grades of fire extinguishers, as applicable
- PC7.** support in administering basic first aid and report to concerned team members, as required, in case of an accident
- PC8.** respond promptly and appropriately to an accident/ incident or emergency, within limits of your role and responsibility
- PC9.** 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 and the worksite and its importance
- KU2.** personnel responsible for health, safety and environment (HSE) related matters and their contact details
- KU3.** location of worksite storage, she team and safe assembly points
- KU4.** reporting and documentation procedures for HSE and security matters
- KU5.** manufacturers guidelines related to health and safety requirements

Qualification Pack

- KU6.** common types of health, safety, environment and security risks related to the worksite and operations
- KU7.** types, use and importance of personal protective equipment (PPE) and other safety gear
- KU8.** safe working practices to avoid common hazards and risks
- KU9.** guidelines for transport, storage and disposal of hazardous materials and waste
- KU10.** types of common hazards and risks at the worksite including fire, electrical, gas emergencies, accidents, incidents, structure collapse, machine breakdown
- KU11.** knowledge of safe lockdown/stop of machinery use in case of emergencies and incidents/accidents
- KU12.** types of fire extinguishers and their use
- KU13.** common injuries and appropriate basic first aid treatment e.g. 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 and comprehend basic English to read manuals of operations
- GS3.** read all organizational and equipment related health and safety manuals and documents
- GS4.** read instructions, guidelines / procedures /rules related to the worksite and equipment operations
- GS5.** Give clear instructions to co-workers, subordinates and other personnel
- GS6.** Use correct technical terms while interacting with supervisor
- GS7.** Make an appropriate timely decision in responding to emergencies/accidents in line with organizational/worksite guidelines
- GS8.** Use correct PPE and other safety gear while at the worksite
- GS9.** Work with supervisors/ team mates to carry out work related tasks
- GS10.** Plan work according to the required schedule and location
- GS11.** Build and maintain positive and effective relationships with colleagues and customers
- GS12.** Seek appropriate assistance from other sources to resolve problems
- GS13.** Assess the intensity of the fire accident and operate fire extinguishers
- GS14.** Analyse, evaluate and apply the information gathered from observation, experience, reasoning, or communication to act efficiently

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Worksite health and safety</i>	5	10	-	-
PC1. Comply with safety, health, security and environment related regulations/guidelines at the work site	0.5	1	-	-
PC2. use personal protective equipment (ppe) and other safety gear as applicable to the equipment and the worksite	0.5	1	-	-
PC3. Follow safety measures during operations to ensure that the health and safety of self or others (including members of the public) is not at risk	0.5	1	-	-
PC4. Carry out operations as per the manufacturer's and worksite related health and safety guidelines	0.5	1	-	-
PC5. Handle the transport, storage and disposal of hazardous materials and waste in compliance with worksite health, safety and environmental guidelines	1	1	-	-
PC6. operate various grades of fire extinguishers, as applicable	0.5	2	-	-
PC7. support in administering basic first aid and report to concerned team members, as required, in case of an accident	0.5	1	-	-
PC8. respond promptly and appropriately to an accident/ incident or emergency, within limits of your role and responsibility	0.5	1	-	-
PC9. record and report details related to operations, incidents or accidents, as applicable	0.5	1	-	-
NOS Total	5	10	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	IES/N7601
NOS Name	Comply with worksite health and safety guidelines
Sector	Infrastructure Equipment
Sub-Sector	Equipment Operations
Occupation	Operator
NSQF Level	4
Credits	TBD
Version	2.0
Last Reviewed Date	26/05/2022
Next Review Date	31/05/2025
NSQC Clearance Date	26/05/2022

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 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.

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
IES/N0113.Carry out pre-operation checks on wheel loader	15	60	0	0	75	35
IES/N0114.Operate a wheel loader	12	63	0	0	75	35
IES/N0115.Carry out maintenance and troubleshooting on the wheel loader	7	28	0	0	35	20
IES/N7601.Comply with worksite health and safety guidelines	5	10	0	0	15	10
Total	39	161	0	0	200	100

Qualification Pack

Acronyms

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

Qualification Pack

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.

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.