

Qualification Pack



Junior Operator Crane

QP Code: IES/Q0111

Version: 2.0

NSQF Level: 3

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/Q0111: Junior Operator Crane	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/N7601: Comply with worksite health and safety guidelines	5
IES/N0132: Assist in operating a crane	9
IES/N0131: Assist in performing pre-operation checks on the Crane	15
IES/N0133: Assist in regular maintenance of crane	21
Assessment Guidelines and Weightage	25
<i>Assessment Guidelines</i>	25
<i>Assessment Weightage</i>	26
Acronyms	27
Glossary	28

Qualification Pack

IES/Q0111: Junior Operator Crane

Brief Job Description

The Junior crane operator helps the main operator in his work. (The crane lifts, moves, positions, and reposition loads). The junior crane operator helps in maintenance of the crane, clearing the area of operation and communicating with the site supervisor. He also learns how to operate the crane on-the-job.

Personal Attributes

The following attributes are important for Junior crane operator- Strength, multi-limb coordination, oral expression and comprehension, control precision, good eyesight, no colour-blindness, manual dexterity, and armhand steadiness and ability to carry out instructions with precision and complying with industry regulations.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [IES/N7601: Comply with worksite health and safety guidelines](#)
2. [IES/N0132: Assist in operating a crane](#)
3. [IES/N0131: Assist in performing pre-operation checks on the Crane](#)
4. [IES/N0133: Assist in regular maintenance of crane](#)

Qualification Pack (QP) Parameters

Sector	Infrastructure Equipment
Sub-Sector	Equipment Operations
Occupation	Operator
Country	India
NSQF Level	3
Aligned to NCO/ISCO/ISIC Code	NCO-2015/8343.0500 Mobile Crane Operator
Minimum Educational Qualification & Experience	8th Class (or 10th Class) with 1 Year of experience

Qualification Pack

Minimum Level of Education for Training in School	8th Class
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	26/05/2022
Next Review Date	26/05/2025
NSQC Approval Date	26/05/2022
Version	2.0
Reference code on NQR	2022/IS/IESC/05902
NQR Version	1.0

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
NSQF Clearance Date	26/05/2022

Qualification Pack

IES/N0132: Assist in operating a crane

Description

This unit provides Performance Criteria, Knowledge & Understanding and Skills & Ability for activities that are required for assisting in crane operations

Scope

The scope covers the following :

- This unit/task covers the following: Crane operation assistance o Positioning the crane o loading and
- hauling of the load

Elements and Performance Criteria

Crane operation assistance

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

- PC1.** ensure that the crane is always assembled/stationed on solid, level ground
- PC2.** ensure that the crane is assembled near the load on a smooth surface by directing the operator
- PC3.** assist the operator in hooking to attach slings, shackles, and chains in accordance with the operations handbook
- PC4.** check sure the outriggers have lock pins as specified in the manufacturer's handbook
- PC5.** check the assembly and ensure that relevant safety measures are taken as per safety guidelines taken
- PC6.** co-ordinate with the operator to carry out the required load lifting
- PC7.** assist the operator in maintaining stability when transferring a load
- PC8.** assist the operator in maintaining constant visibility of both ends of the crane arm
- PC9.** during the hoisting process, make sure there are no barriers, people, or other obstructions
- PC10.** check for workers and dangers such as trenches, potholes, and wires stick to the time constraints set by the operator
- PC11.** adhere to the time constraints set by the operator
- PC12.** carry out visual inspections on key temperature and pressure gauges while they are in operation in accordance with the operator's instructions
- PC13.** work in line with operational requirements and accompanying safe work systems
- PC14.** ensure that no other operators travel on or near the crane
- PC15.** appropriately uninstall outriggers

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the organizations procedures and guidelines related to breakdown & maintenance services

Qualification Pack

- KU2.** the company's performance criteria and processes
- KU3.** reporting structure in the company
- KU4.** escalation matrix for reporting unresolved problems
- KU5.** schedule for resolving the complaint/problem
- KU6.** work target and review mechanism with supervisor for obtaining/ giving feedback related to performance process
- KU7.** location of tools
- KU8.** contact person in case of queries on procedure or products
- KU9.** location and procedure for waste storage and disposal
- KU10.** safety policy of the company
- KU11.** limitations on equipment load capacity
- KU12.** proper rigging hardware and slings technique
- KU13.** use of various sorts of rigging setups
- KU14.** load hook-up points
- KU15.** types of material, methods and tools involved in the construction or repair of buildings, roads, heavy engineering equipment, oil wells, metro etc. where cranes are used.
- KU16.** hoisting operation techniques
- KU17.** rigging approach that is safe
- KU18.** rigging hardware and tool use
- KU19.** activities with several cranes
- KU20.** circumstances and dangers that might impact crane stability
- KU21.** techniques for preventing crane tipping
- KU22.** techniques of communicating using hand gestures
- KU23.** government regulations and other regulations imposed by crane safety standards
- KU24.** the instrument panel, its placement and its functionality
- KU25.** the importance of the instruments on the instrument panel
- KU26.** the various possible alert signs and alarms installed in the crane for safety measures
- KU27.** engine oil pressure and radiator coolant temperature should be optimum
- KU28.** preliminary visual inspections to detect damage, flaws, or leaks
- KU29.** basic safety precautions while excavating and piling
- KU30.** all safety signs and other emergency signals should be used
- KU31.** correct maintenance procedures for cranes
- KU32.** methods for dealing with emergencies, such as the proper way to use a fire extinguisher

Generic Skills (GS)

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

- GS1.** keep a note of any deviations or occurrences that do not conform to the established criteria
- GS2.** read and comprehend basic English in order to read and interpret machine/manual operator's decals/indicators

Qualification Pack

- GS3.** interpret stakes and signage on the road and during worksite operations
- GS4.** read instructions, guidelines/procedures/rules related to the worksite and equipment operations
- GS5.** communicate efficiently with operators to explain instructions and other concerns
- GS6.** when communicating with the operator and other employees, use appropriate technical terms
- GS7.** assess for any damage/faulty component in the crane and report to the operator
- GS8.** carry out work duties in accordance with the operator's/other supervisors' directions and deadlines
- GS9.** plan work according to the required schedule and location
- GS10.** deliver first-rate service to ensure client happiness
- GS11.** problems that you are unable to address should be reported to the appropriate authority
- GS12.** identify sources of assistance that may be used to solve challenges of different kinds
- GS13.** assess the situation and support the operator with navigation during driving operations
- GS14.** apply balanced judgment to different situations

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Crane operation assistance</i>	15	60	-	-
PC1. ensure that the crane is always assembled/stationed on solid, level ground	1	4	-	-
PC2. ensure that the crane is assembled near the load on a smooth surface by directing the operator	1	4	-	-
PC3. assist the operator in hooking to attach slings, shackles, and chains in accordance with the operations handbook	1	4	-	-
PC4. check sure the outriggers have lock pins as specified in the manufacturer's handbook	1	4	-	-
PC5. check the assembly and ensure that relevant safety measures are taken as per safety guidelines taken	1	4	-	-
PC6. co-ordinate with the operator to carry out the required load lifting	1	4	-	-
PC7. assist the operator in maintaining stability when transferring a load	1	4	-	-
PC8. assist the operator in maintaining constant visibility of both ends of the crane arm	2	4	-	-
PC9. during the hoisting process, make sure there are no barriers, people, or other obstructions	1	4	-	-
PC10. check for workers and dangers such as trenches, potholes, and wires stick to the time constraints set by the operator	1	4	-	-
PC11. adhere to the time constraints set by the operator	1	4	-	-
PC12. carry out visual inspections on key temperature and pressure gauges while they are in operation in accordance with the operator's instructions	2	4	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. work in line with operational requirements and accompanying safe work systems	1	4	-	-
PC14. ensure that no other operators travel on or near the crane	-	4	-	-
PC15. appropriately uninstall outriggers	-	4	-	-
NOS Total	15	60	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	IES/N0132
NOS Name	Assist in operating a crane
Sector	Infrastructure Equipment
Sub-Sector	Equipment Operations
Occupation	Operator
NSQF Level	3
Credits	TBD
Version	2.0
Last Reviewed Date	26/05/2022
Next Review Date	26/05/2025
NSQC Clearance Date	26/05/2022

Qualification Pack

IES/N0131: Assist in performing pre-operation checks on the Crane

Description

This unit provides Performance Criteria, Knowledge & Understanding and Skills & Ability for activities that need to be carried out while assisting the operator to prepare the crane for operation

Scope

The scope covers the following :

- This unit/task covers the following: Assistance in conducting pre-operation checks

Elements and Performance Criteria

Assistance in conducting pre-checks of a crane

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

- PC1.** adhere by the time constraints set by the operator
- PC2.** ensures that all labels are visible and in position according to the operating manual
- PC3.** check for hydraulic oil leaks and proper oil level as per manufacturer's indicator
- PC4.** inspect all ground engaging tools to ensure stability
- PC5.** add oil, on directions from the operator, if needed as per manufacturer's indicator
- PC6.** examine the battery for leaks and ensure that the fluid level is adequate according to the manufacturer's indicator
- PC7.** add distilled water if needed, on directions from the operator, as per manufacturer's indicator
- PC8.** check the tyre pressure and lug nut torque according to the manufacturer's recommendations
- PC9.** check for engine oil leaks and fluid levels as indicated by the manufacturer's indication
- PC10.** ensure that the cables and grappling devices are in accordance with the manufacturer's specifications
- PC11.** add fuel and oil if needed as per manufacturer's indicator
- PC12.** check the following components for damage, improperly installed or missing parts as per the manufacturer's manual: Electrical components, wiring and electrical cables Hydraulic power unit, reservoir, hoses, fittings, cylinders and manifolds Platform, tower, turntable, scissor stack structures, their components and wear pads Tires and wheels Trailer lights and reflectors o Parking brake, and electric braking system (including the breakaway system) Drive wheel and motor
- PC13.** check the following components as per operation manual: Outriggers and Wheels Limit switches Pins, nuts, bolts and other fasteners Hitch components Safety chains Engines their fuel systems and related components Axle components Personal protective devices
- PC14.** check that all structural and other key components are present and in working order, as specified in the operating handbook
- PC15.** check that all associated fasteners and pins are in position and properly fastened in accordance with the operating handbook

Qualification Pack

- PC16.** check that all compartment lids are in place and locked in accordance with the operating manual
- PC17.** visually inspect entire machine for: Cracks in welds or structural components Excessive rust, corrosion or oxidation Dents or damage to machine

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the organizations procedures and guidelines related to breakdown & maintenance services
- KU2.** the company's performance criteria and processes
- KU3.** reporting structure in the company
- KU4.** escalation matrix for reporting unresolved problems
- KU5.** schedule for resolving the complaint/problem
- KU6.** work target and review mechanism with supervisor for obtaining/ giving feedback related to performance process
- KU7.** location of tools
- KU8.** contact person in case of queries on procedure or products
- KU9.** location and procedure for waste storage and disposal
- KU10.** safety policy of the company
- KU11.** different types of cranes and their applications and functions
- KU12.** the relevance of greasing and oiling crane components that require routine lubrication
- KU13.** the instrument panel, its placement and its operation
- KU14.** controls, levers and switches in order to operate the crane properly
- KU15.** engine , hydraulic & electrical functions of a mobile crane

Generic Skills (GS)

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

- GS1.** keep note of any deviations or occurrences that do not conform to the established criteria
- GS2.** read and comprehend basic English in order to read and interpret machine/manual operator's decals/indicators
- GS3.** communicate efficiently with operators to explain instructions and other concerns
- GS4.** when communicating with the operator and other employees, use appropriate technical terms
- GS5.** decide when to conduct maintenance checks
- GS6.** carry out work duties in accordance with the operator's/other supervisors' directions and deadlines
- GS7.** plan work according to the required schedule and location
- GS8.** plan on cleaning and lubricating the crane on a daily basis
- GS9.** deliver first-class service to ensure client satisfaction
- GS10.** problems that you are unable to address should be reported to the appropriate authority



Qualification Pack

- GS11.** identify sources of assistance that may be used to solve challenges of different kinds
- GS12.** identify 'cause and effect' relations in own area of work
- GS13.** apply balanced judgment to different situations

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Assistance in conducting pre-checks of a crane</i>	20	55	-	-
PC1. adhere by the time constraints set by the operator	1	3	-	-
PC2. ensures that all labels are visible and in position according to the operating manual	1	3	-	-
PC3. check for hydraulic oil leaks and proper oil level as per manufacturer's indicator	1	3	-	-
PC4. inspect all ground engaging tools to ensure stability	1	3	-	-
PC5. add oil, on directions from the operator, if needed as per manufacturer's indicator	1	3	-	-
PC6. examine the battery for leaks and ensure that the fluid level is adequate according to the manufacturer's indicator	1	3	-	-
PC7. add distilled water if needed, on directions from the operator, as per manufacturer's indicator	1	3	-	-
PC8. check the tyre pressure and lug nut torque according to the manufacturer's recommendations	1	4	-	-
PC9. check for engine oil leaks and fluid levels as indicated by the manufacturer's indication	1	3	-	-
PC10. ensure that the cables and grappling devices are in accordance with the manufacturer's specifications	1	3	-	-
PC11. add fuel and oil if needed as per manufacturer's indicator	1	3	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. check the following components for damage, improperly installed or missing parts as per the manufacturer s manual: Electrical components, wiring and electrical cables Hydraulic power unit, reservoir, hoses, fittings, cylinders and manifolds Platform, tower, turntable, scissor stack structures, their components and wear pads Tires and wheels Trailer lights and reflectors o Parking brake, and electric braking system (including the breakaway system) Drive wheel and motor	2	4	-	-
PC13. check the following components as per operation manual: Outriggers and Wheels Limit switches Pins, nuts, bolts and other fasteners Hitch components Safety chains Engines their fuel systems and related components Axle components Personal protective devices	2	4	-	-
PC14. check that all structural and other key components are present and in working order, as specified in the operating handbook	2	4	-	-
PC15. check that all associated fasteners and pins are in position and properly fastened in accordance with the operating handbook	1	3	-	-
PC16. check that all compartment lids are in place and locked in accordance with the operating manual	1	3	-	-
PC17. visually inspect entire machine for: Cracks in welds or structural components Excessive rust, corrosion or oxidation Dents or damage to machine	1	3	-	-
NOS Total	20	55	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	IES/N0131
NOS Name	Assist in performing pre-operation checks on the Crane
Sector	Infrastructure Equipment
Sub-Sector	Equipment Operations
Occupation	Operator
NSQF Level	3
Credits	TBD
Version	2.0
Last Reviewed Date	26/05/2022
Next Review Date	26/05/2025
NSQF Clearance Date	26/05/2022

Qualification Pack

IES/N0133: Assist in regular maintenance of crane

Description

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

Scope

The scope covers the following :

- This unit/task covers the following: Routine Maintenance assistance Documentation and Reporting

Elements and Performance Criteria

Routine Maintenance assistance

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

- PC1.** check Crane structure for deformed, cracked or corroded members in the structure and boom. Loose bolts or rivets. Excessive wear on brake and clutch system parts. Deformed wedges. Defective cotter keys, pins and guardrails
- PC2.** check for the following in hydraulic system of Crane as per operation & maintenance manual: Deterioration or leakage in air or hydraulic systems Safe and effective operation on hoses, pumps and motors Levels of fluid Air cleaners for replacement or cleaning
- PC3.** examine wire ropes for wear and tear
- PC4.** check the following in the main boom as per operation manual lift cylinder(s) telescoping cylinder(s) hydraulic hoses / tubing & fittings holding device boom sections alignment auxiliary boom head structure
- PC5.** Check the following in the Lattice boom extension Boom extension alignment cords lattices end connections
- PC6.** refill coolants, lubricants, and fluids as directed by the operator
- PC7.** grease all greasing pins and pivot points according to the manufacturer's instructions
- PC8.** check battery levels and terminal condition and make minor adjustments based on manufacturer's indications
- PC9.** check and maintain the tyre rims, air pressure, wheel nuts and treads in accordance with the manufacturer's recommendations
- PC10.** adhere to the reporting procedures established by the employer
- PC11.** in a timely way, report and escalate problems/incidents as needed
- PC12.** report defects precisely to the operator if beyond scope of his role
- PC13.** handle and dispose waste based on environmental guidelines at the work place

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the organizations procedures and guidelines related to breakdown & maintenance services

Qualification Pack

- KU2.** the company's performance criteria and processes
- KU3.** reporting structure in the company
- KU4.** escalation matrix for reporting unresolved problems
- KU5.** schedule for resolving the complaint/problem
- KU6.** work objective and review procedure with supervisor for obtaining/giving feedback on performance process
- KU7.** location of tools
- KU8.** contact person in case of queries on procedure or products
- KU9.** location and procedure for waste storage and disposal
- KU10.** safety policy of the company
- KU11.** various components of the equipment and their functions
- KU12.** control and switches needed to operate the tyre mounted crane properly
- KU13.** the underlying physics and mechanics involved in the tyre mounted crane's various functions
- KU14.** typical defects and general reasons of failure
- KU15.** response to emergency situations
- KU16.** the optimal levels of control indicators e.g. fuel gauge, engine oil pressure and temperature
- KU17.** possible sources of any unusual sound emanating from the engine and other part

Generic Skills (GS)

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

- GS1.** keep note of any deviations or occurrences that do not conform to the established criteria
- GS2.** read and comprehend basic English in order to read and interpret machine/manual operator's decals/indicators
- GS3.** communicate efficiently with operators to explain instructions and other concerns
- GS4.** when communicating with the operator and other employees, use appropriate technical terms
- GS5.** decide when to conduct maintenance checks
- GS6.** evaluate the decision and conduct basic trouble shooting
- GS7.** carry out work duties in accordance with the operator's/other supervisors' directions and deadlines
- GS8.** plan work according to the required schedule and location
- GS9.** plan for regular maintenance on a daily basis before machine operations
- GS10.** deliver first-class service to ensure client satisfaction
- GS11.** problems that you are unable to address should be reported to the appropriate authority
- GS12.** identify sources of assistance that may be used to solve various types of challenges
- GS13.** evaluate the complexity of the tasks to determine if he/she needs any assistance from the senior
- GS14.** apply balanced judgment to different situations

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Routine Maintenance assistance</i>	7	28	-	-
PC1. check Crane structure for deformed, cracked or corroded members in the structure and boom. Loose bolts or rivets. Excessive wear on brake and clutch system parts. Deformed wedges. Defective cotter keys, pins and guardrails	-	3	-	-
PC2. check for the following in hydraulic system of Crane as per operation & maintenance manual: Deterioration or leakage in air or hydraulic systems Safe and effective operation on hoses, pumps and motors Levels of fluid Air cleaners for replacement or cleaning	-	3	-	-
PC3. examine wire ropes for wear and tear	-	2	-	-
PC4. check the following in the main boom as per operation manual lift cylinder(s) telescoping cylinder(s) hydraulic hoses / tubing & fittings holding device boom sections alignment auxiliary boom head structure	-	3	-	-
PC5. Check the following in the Lattice boom extension Boom extension alignment cords lattices end connections	-	3	-	-
PC6. refill coolants, lubricants, and fluids as directed by the operator	1	2	-	-
PC7. grease all greasing pins and pivot points according to the manufacturer's instructions	1	3	-	-
PC8. check battery levels and terminal condition and make minor adjustments based on manufacturer's indications	-	2	-	-
PC9. check and maintain the tyre rims, air pressure, wheel nuts and treads in accordance with the manufacturer's recommendations	-	2	-	-
PC10. adhere to the reporting procedures established by the employer	1	1	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. in a timely way, report and escalate problems/incidents as needed	1	2	-	-
PC12. report defects precisely to the operator if beyond scope of his role	2	1	-	-
PC13. handle and dispose waste based on environmental guidelines at the work place	1	1	-	-
NOS Total	7	28	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	IES/N0133
NOS Name	Assist in regular maintenance of crane
Sector	Infrastructure Equipment
Sub-Sector	Equipment Operations
Occupation	Operator
NSQF Level	3
Credits	TBD
Version	2.0
Last Reviewed Date	26/05/2022
Next Review Date	26/05/2025
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 70 % 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/N7601.Comply with worksite health and safety guidelines	5	10	0	0	15	10
IES/N0132.Assist in operating a crane	15	60	0	0	75	35
IES/N0131.Assist in performing pre-operation checks on the Crane	20	55	0	0	75	35
IES/N0133.Assist in regular maintenance of crane	7	28	0	0	35	20
Total	47	153	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.