

Qualification Pack



Refrigeration Equipment Maintenance Specialist

QP Code: LSC/Q9101

Version: 3.0

NSQF Level: 5

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LSC/Q9101: Refrigeration Equipment Maintenance Specialist

Brief Job Description

The individual at work prepares a refrigeration equipment maintenance schedule checklist and monitors its preventive maintenance. The person is also responsible for overseeing the installation, replacement, service and repair of cold chain equipment like condensers, compressors, and evaporators, providing workforce and material resources to maintenance technicians, and training plant engineers on handling and maintaining refrigeration equipment.

Personal Attributes

The job requires the individual to have good eye sight, good physical fitness, be vigilant, have ability to work in low temperature environment for long duration and willingness to work by wearing protective gear.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [LSC/N9101: Plan preventive maintenance of refrigeration equipment](#)
2. [LSC/N9102: Supervise maintenance activities](#)
3. [LSC/N9105: Administer Installation or Replacement of Refrigeration Equipment Components](#)
4. [LSC/N9103: Monitor overall performance and continuous improvement](#)
5. [LSC/N9901: Maintain food and personnel safety, health and hygiene in cold storage plant](#)
6. [LSC/N9202: Oversee modified atmosphere requirements for the products](#)
7. [DGT/VSQ/N0102: Employability Skills \(60 Hours\)](#)

Qualification Pack (QP) Parameters

Sector	Logistics
Sub-Sector	Cold Chain Logistics Solutions
Occupation	Maintenance
Country	India
NSQF Level	5

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Credits	19
Aligned to NCO/ISCO/ISIC Code	NCO-2015/NIL
Minimum Educational Qualification & Experience	<p>Diploma (UG diploma or equivalent (Diploma in Mechanical / Electrical / Electronic / Refrigeration engineering)) with 1 Year of experience (relevant experience in handling refrigeration equipment)</p> <p>OR</p> <p>12th grade Pass (or equivalent) with 4 Years of experience (relevant experience in handling refrigeration equipment)</p> <p>OR</p> <p>Completed 3 year diploma after 10th with 2 Years of experience (relevant experience in handling refrigeration equipment)</p> <p>OR</p> <p>Previous relevant Qualification of NSQF Level (4) with 3 Years of experience (relevant experience in cold storage/ refrigeration/ air conditioning equipment maintenance operations)</p>
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NA
Minimum Job Entry Age	21 Years
Last Reviewed On	NA
Next Review Date	06/02/2029
NSQC Approval Date	06/02/2026
Version	3.0
Reference code on NQR	QG-05-TLW-04964-2026-V1-LSSC
NQR Version	1.0

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LSC/N9101: Plan preventive maintenance of refrigeration equipment

Description

This OS unit is about planning and preparing maintenance schedules as per requirements, and manage resources accordingly

Scope

The scope covers the following :

- Prepare a preventive maintenance schedule
- Manage resources for maintenance
- Handle the supply of materials to the maintenance technicians

Elements and Performance Criteria

Prepare a preventive maintenance schedules.

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

- PC1.** List all refrigeration equipment, record their key specifications and tag critical systems.
- PC2.** Review OEM Guidelines, Maintenance Manuals and manufacturer manuals for each unit.
- PC3.** Identify the recommended service intervals, Parts replacement timelines, Calibration/ inspection points, and Critical thresholds for temperature, pressure, and performance.
- PC4.** Prepare work program and schedules for maintenance based on equipment criticality (daily, weekly, monthly, quarterly, and annually), Usage intensity (24/7 operation vs. seasonal use) and Environment (high-dust, high-humidity, or food-grade zones).
- PC5.** Prioritize maintenance as per legislative laws, organisation requirements, resources, and environment
- PC6.** Plan electrical system maintenance at least once in five years as per the Institute of Electrical and Electronics Engineers Code of Practice
- PC7.** Develop PM Checklists for Each Equipment Type which should include Visual Inspection (corrosion, leaks, frost buildup), Mechanical Check (compressor noise, vibration, fan operation), Electrical Check (connections, insulation, relays, overloads), Refrigerant System Check (leak detection, pressure testing, level verification), Cleaning Tasks (coils, filters, panels, drain lines) and Control System Calibration (thermostats, sensors, defrost timers, BMS/PLC inputs).
- PC8.** Be sure electrical connections for corroded terminals, evaporators for defrosting, and coil surfaces for dust accumulation checks are included.
- PC9.** Confirm that the maintenance plan checks oil safety and high-pressure controls of compressor units
- PC10.** Schedule PM during non-peak hours or planned downtime, and coordinate with production, warehouse, or logistics teams to minimise disruption.
- PC11.** Record the schedules for preventive maintenance and share them with the respective stakeholders.

Manage resources for maintenance.

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

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- PC12.** Identify resources for maintenance based on the skills required and timelines.
- PC13.** Assign roles and responsibilities to those who perform which tasks, such as an in-house technician vs. an external service contractor.
- PC14.** Provide information on priority to the mechanics and deadlines for the tasks, so that losses are minimized
- PC15.** Make contingency plans for emergencies regarding the working of the equipment and for variations in workforce availability.

Handle the supply of materials to the maintenance technicians

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

- PC16.** Maintain inventory of Common spares (filters, thermostats, gaskets, fuses, refrigerants), Tools (leak detectors, manifold gauges, multimeters, cleaning kits) and PPE.
- PC17.** Identify long-lead items or parts with import lead times and arrange them in advance.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** Organisational policies, guidelines and reporting structure
- KU2.** Roles and responsibilities of labourers in the cold storage area
- KU3.** Communication with relevant people in the organisation to obtain their consent for the maintenance schedule
- KU4.** Organisation safety and security procedures for refrigerant usage and Formats for maintenance checklists.
- KU5.** Procedures to follow during emergency maintenance
- KU6.** Different types of refrigerant leak detectors, like Halide leak detector, Electronic leak detectors and soap and water test
- KU7.** Checking leaks of ammonia and refrigerants
- KU8.** Applications, effects and methods for safe usage of different refrigerants
- KU9.** Importance of prior planning for the maintenance of refrigeration equipment
- KU10.** Problems that may arise in different departments in the organisation due to maintenance activities and their solutions
- KU11.** Preparation of preventive maintenance schedules and checklists.
- KU12.** Optimal temperature and humidity conditions required for various products handled by cold chain, for example, Marine products: -18 to -21 degrees, Fruits and Vegetables -1 to 15 degree, 95 Percentage to 98 Percentage RH 65 Percentage to 75 Percentage RH For garlic and onion : 40 Percentage to 50 Percentage, RH Beans, dry fruits and Vegetables, Dairy : 20 to 4 degrees: Dry Fruits : 4 to 10 degrees : Pharma - chemicals and vaccine : 4 to 10 degrees : flower : 0 to 2 degree
- KU13.** Product-specific hygiene requirements
- KU14.** Extent of ethylene production by each product and sensitivity of ethylene exposure to products
- KU15.** How to prioritise activities in maintenance scheduling and finalization requirements for maintenance
- KU16.** Necessary resources for each activity

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- KU17.** Safety standards and precautions to be ensured
- KU18.** Procedures for isolating electrical systems (wiring to the equipment) safely
- KU19.** Bonding of the electrical system to the components after repair
- KU20.** Selection of accessories and tools required for maintenance
- KU21.** Calculation of machine productivity
- KU22.** Calculation of expenditures, monitoring variances in the budget for meeting financial standards
- KU23.** How to review maintenance activities operating principles of refrigeration equipment used based on the product type
- KU24.** How to rectify faults in equipment, such as compressor failure, improper temperature controls for the products or restricted refrigerant
- KU25.** Relation between the refrigeration gas pressure present and the temperature maintained
- KU26.** Methods for the safe disposal of obsolete equipment or its components

Generic Skills (GS)

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

- GS1.** Interpret the equipment manual, safety instructions, legislative laws concerning equipment maintenance, and the equipment manufacturer's maintenance instructions.
- GS2.** Enforce storage and hygiene conditions as per the products handled for the organisation or its customers
- GS3.** Use reasoning to identify alternative solutions
- GS4.** Assign criticality to the equipment problem, to plan and prioritise maintenance or repair tasks
- GS5.** Prepare maintenance schedules in the format followed by the organisation
- GS6.** Communicate clearly with workers about the requirements for maintenance activities
- GS7.** Communicate with other departments like operations, packing and dispatch, quality check, admin and finance, which get impacted due to equipment maintenance activities
- GS8.** Decide on the priorities of activities planned, consider relative costs and benefits of multiple solutions
- GS9.** Identify faults in the refrigerant equipment working
- GS10.** Resolve emergencies in equipment functioning
- GS11.** Plan maintenance activities as per standard requirements and the manufacturer's instructions
- GS12.** Plan equipment service based on its working condition
- GS13.** Plan resources by selecting, training, and ensuring discipline amongst them
- GS14.** Reschedule tasks in case of delays or requirements by other departments in the organisation
- GS15.** Handle allotment of tasks to workers in case of staff shortage or delays in activities
- GS16.** Interpret the electrical system diagrams, equipment diagrams and information to identify which components need maintenance
- GS17.** Assess the working condition of refrigeration equipment
- GS18.** Plan activities to minimise the effects on the normal working of the organisation

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Prepare a preventive maintenance schedules.</i>	20	39	-	6.5
PC1. List all refrigeration equipment, record their key specifications and tag critical systems.	2	3	-	0.5
PC2. Review OEM Guidelines, Maintenance Manuals and manufacturer manuals for each unit.	2	4	-	-
PC3. Identify the recommended service intervals, Parts replacement timelines, Calibration/ inspection points, and Critical thresholds for temperature, pressure, and performance.	2	3	-	1
PC4. Prepare work program and schedules for maintenance based on equipment criticality (daily, weekly, monthly, quarterly, and annually), Usage intensity (24/7 operation vs. seasonal use) and Environment (high-dust, high-humidity, or food-grade zones).	1	4	-	1
PC5. Prioritize maintenance as per legislative laws, organisation requirements, resources, and environment	2	3	-	0.5
PC6. Plan electrical system maintenance at least once in five years as per the Institute of Electrical and Electronics Engineers Code of Practice	2	4	-	0.5
PC7. Develop PM Checklists for Each Equipment Type which should include Visual Inspection (corrosion, leaks, frost buildup), Mechanical Check (compressor noise, vibration, fan operation), Electrical Check (connections, insulation, relays, overloads), Refrigerant System Check (leak detection, pressure testing, level verification), Cleaning Tasks (coils, filters, panels, drain lines) and Control System Calibration (thermostats, sensors, defrost timers, BMS/PLC inputs).	1	4	-	1
PC8. Be sure electrical connections for corroded terminals, evaporators for defrosting, and coil surfaces for dust accumulation checks are included.	2	4	-	0.5

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC9. Confirm that the maintenance plan checks oil safety and high-pressure controls of compressor units	2	3	-	0.5
PC10. Schedule PM during non-peak hours or planned downtime, and coordinate with production, warehouse, or logistics teams to minimise disruption.	2	4	-	0.5
PC11. Record the schedules for preventive maintenance and share them with the respective stakeholders.	2	3	-	0.5
<i>Manage resources for maintenance.</i>	8	15	-	2
PC12. Identify resources for maintenance based on the skills required and timelines.	2	3	-	0.5
PC13. Assign roles and responsibilities to those who perform which tasks, such as an in-house technician vs. an external service contractor.	2	4	-	0.5
PC14. Provide information on priority to the mechanics and deadlines for the tasks, so that losses are minimized	2	4	-	0.5
PC15. Make contingency plans for emergencies regarding the working of the equipment and for variations in workforce availability.	2	4	-	0.5
<i>Handle the supply of materials to the maintenance technicians</i>	2	6	-	1.5
PC16. Maintain inventory of Common spares (filters, thermostats, gaskets, fuses, refrigerants), Tools (leak detectors, manifold gauges, multimeters, cleaning kits) and PPE.	1	3	-	0.5
PC17. Identify long-lead items or parts with import lead times and arrange them in advance.	1	3	-	1
NOS Total	30	60	-	10

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National Occupational Standards (NOS) Parameters

NOS Code	LSC/N9101
NOS Name	Plan preventive maintenance of refrigeration equipment
Sector	Logistics
Sub-Sector	Cold Chain Logistics Solutions
Occupation	Maintenance
NSQF Level	5
Credits	3
Version	3.0
Last Reviewed Date	06/02/2026
Next Review Date	06/02/2029
NSQF Clearance Date	06/02/2026

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LSC/N9102: Supervise maintenance activities

Description

This OS unit is about monitoring maintenance activities of refrigeration equipment to ensure that they are completed as per the plan

Scope

The scope covers the following :

- Install and Monitor relevant refrigeration systems
- Maintain Documentation & Recordkeeping

Elements and Performance Criteria

Install and Monitor relevant refrigeration systems

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

- PC1.** Inspect regularly to ensure maintenance activities are done as per quality requirements, timelines and within the costs planned.
- PC2.** Prepare preventive maintenance Calendar and Monitor the sequence of activities as per the schedule and that the equipment is calibrated correctly before use.
- PC3.** Ensure compliance with Refrigerant handling regulations (e.g., India's Ozone Depleting Substances Rules) and Electrical safety and lockout/tagout procedures.
- PC4.** Confirm that the quality of the products stored under refrigeration is not harmed while equipment components are being checked
- PC5.** Ensure that there is safe discharge of ammonia, so that excess refrigerant is discharged safely (not inside the cold room and away from the work area)
- PC6.** Ensure that drains in the cold area are free of debris and check the operations of door seals.
- PC7.** Ensure workers are using PPE and leave the area safe and clean after performing maintenance activities
- PC8.** Carry out a walk-around inspection regularly to monitor the activities of subordinates.
- PC9.** Allocate parallel tasks to handle different components of refrigeration equipment, like the evaporator, compressor and condenser, wherever possible
- PC10.** Observe the work efficiency of the workforce and identify training needs wherever necessary
- PC11.** Communicate with workers as often as needed to ensure the maintenance schedule is followed
- PC12.** Do warranty analysis and tag critical systems.
- PC13.** Renew license with concerned authorities every year as per the AMC Expiry of certain equipments.

Maintain Documentation & Recordkeeping

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

- PC14.** Assign a resource to maintain records during refrigeration equipment maintenance activities
- PC15.** Conduct regular checks on the maintenance log and instruct the person concerned if it's inaccurate.

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- PC16.** Maintain logs for the Maintenance performed, Spare parts used, Issues found and resolved, Equipment downtime and repair history, etc.
- PC17.** Use CMMS (Computerised Maintenance Management System) or digital tools like Excel, UpKeep, or Maintainx.
- PC18.** Review failure logs and service history every 6 months and update maintenance schedules based on Unexpected breakdowns, Equipment age or upgrade, Energy efficiency targets, etc.
- PC19.** Incorporate feedback from operators and facility managers and maintain the Operational Calendar.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** Organisational policies, reporting hierarchy, and SOPs for refrigeration equipment maintenance.
- KU2.** Preventive and corrective maintenance procedures for cold chain refrigeration systems.
- KU3.** National and international regulations on refrigerant handling (e.g., Indias Ozone Depleting Substances Rules, F-gas regulations).
- KU4.** Electrical safety standards, including lockout/tagout procedures, bonding, and grounding practices.
- KU5.** Health, safety, and hygiene requirements for cold storage facilities in compliance with FSSAI and other relevant food safety regulations.
- KU6.** Proper handling and disposal of ammonia and other refrigerants to avoid contamination of work areas and cold rooms.
- KU7.** Methods for ethylene gas level monitoring in storage areas and the use, replacement, and maintenance of ethylene gas filters to reduce ripening and spoilage in sensitive products.
- KU8.** Procedures to ensure drains, door seals, and air curtains are functioning correctly to maintain temperature and humidity levels.
- KU9.** Principles of calibration for refrigeration components such as thermostats, sensors, and control systems.
- KU10.** Types of PPE required for various maintenance activities and their correct usage.
- KU11.** Techniques for conducting visual and operational inspections for evaporators, condensers, and compressors.
- KU12.** Best practices for allocating parallel maintenance tasks to optimise downtime.
- KU13.** Methods for identifying skill gaps and planning workforce training.
- KU14.** Importance of maintaining accurate maintenance logs, spare parts records, and repair histories.
- KU15.** Use of CMMS (Computerised Maintenance Management Systems) or equivalent digital tools for recordkeeping and maintenance tracking.
- KU16.** Procedures for analysing failure logs, downtime records, and equipment efficiency reports.
- KU17.** Energy efficiency considerations when operating or maintaining refrigeration systems.
- KU18.** Communication protocols for coordinating between maintenance teams, operators, and facility managers.
- KU19.** Impact of improper maintenance sequencing on product quality, safety, and shelf life.

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KU20. Data analysis methods for identifying recurring faults and preventive measures.

Generic Skills (GS)

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

- GS1.** Interpret equipment manuals, manufacturer maintenance guidelines, and safety instructions.
- GS2.** Read and apply regulatory requirements for refrigerant handling, electrical safety, and FSSAI compliance.
- GS3.** Use reasoning and problem-solving to identify corrective actions when maintenance issues arise.
- GS4.** Plan and prioritise maintenance activities based on equipment criticality, operational schedules, and product safety needs.
- GS5.** Operate and update records in CMMS or other digital maintenance tracking tools.
- GS6.** Monitor ethylene gas levels in storage areas using detection equipment and schedule timely replacement/servicing of ethylene filters.
- GS7.** Communicate clearly and effectively with maintenance staff, operators, and supervisors to ensure smooth workflow.
- GS8.** Coordinate with quality control teams to confirm that maintenance activities do not impact product safety or shelf life.
- GS9.** Identify unsafe practices and enforce PPE usage and workplace safety standards.
- GS10.** Analyse maintenance logs, downtime records, and energy usage data to improve system performance.
- GS11.** Allocate and monitor parallel maintenance tasks to minimise downtime.
- GS12.** Assess staff performance, identify training requirements, and provide guidance for skill enhancement.
- GS13.** Handle emergency maintenance situations promptly while ensuring worker and product safety.
- GS14.** Conduct post-maintenance inspections to verify task completion and compliance with SOPs.
- GS15.** Prepare and maintain compliance records for audits, including FSSAI, safety, and environmental regulations.

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Install and Monitor relevant refrigeration systems</i>	20	42	-	6.5
PC1. Inspect regularly to ensure maintenance activities are done as per quality requirements, timelines and within the costs planned.	1	3	-	0.5
PC2. Prepare preventive maintenance Calendar and Monitor the sequence of activities as per the schedule and that the equipment is calibrated correctly before use.	2	3	-	0.5
PC3. Ensure compliance with Refrigerant handling regulations (e.g., India's Ozone Depleting Substances Rules) and Electrical safety and lockout/tagout procedures.	2	4	-	0.5
PC4. Confirm that the quality of the products stored under refrigeration is not harmed while equipment components are being checked	2	3	-	0.5
PC5. Ensure that there is safe discharge of ammonia, so that excess refrigerant is discharged safely (not inside the cold room and away from the work area)	2	4	-	0.5
PC6. Ensure that drains in the cold area are free of debris and check the operations of door seals.	1	3	-	0.5
PC7. Ensure workers are using PPE and leave the area safe and clean after performing maintenance activities	2	3	-	0.5
PC8. Carry out a walk-around inspection regularly to monitor the activities of subordinates.	1	3	-	0.5
PC9. Allocate parallel tasks to handle different components of refrigeration equipment, like the evaporator, compressor and condenser, wherever possible	1	3	-	0.5
PC10. Observe the work efficiency of the workforce and identify training needs wherever necessary	2	3	-	0.5

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. Communicate with workers as often as needed to ensure the maintenance schedule is followed	1	3	-	0.5
PC12. Do warranty analysis and tag critical systems.	1	3	-	0.5
PC13. Renew license with concerned authorities every year as per the AMC Expiry of certain equipments.	2	4	-	0.5
<i>Maintain Documentation & Recordkeeping</i>	10	18	-	3.5
PC14. Assign a resource to maintain records during refrigeration equipment maintenance activities	2	2	-	0.5
PC15. Conduct regular checks on the maintenance log and instruct the person concerned if it's inaccurate.	2	3	-	0.5
PC16. Maintain logs for the Maintenance performed, Spare parts used, Issues found and resolved, Equipment downtime and repair history, etc.	2	3	-	1
PC17. Use CMMS (Computerised Maintenance Management System) or digital tools like Excel, UpKeep, or Maintainx.	1	3	-	0.5
PC18. Review failure logs and service history every 6 months and update maintenance schedules based on Unexpected breakdowns, Equipment age or upgrade, Energy efficiency targets, etc.	2	3	-	0.5
PC19. Incorporate feedback from operators and facility managers and maintain the Operational Calendar.	1	4	-	0.5
NOS Total	30	60	-	10

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National Occupational Standards (NOS) Parameters

NOS Code	LSC/N9102
NOS Name	Supervise maintenance activities
Sector	Logistics
Sub-Sector	Cold Chain Logistics Solutions
Occupation	Maintenance
NSQF Level	5
Credits	3
Version	3.0
Last Reviewed Date	06/02/2026
Next Review Date	06/02/2029
NSQC Clearance Date	06/02/2026

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LSC/N9105: Administer Installation or Replacement of Refrigeration Equipment Components

Description

This OS unit is about monitoring the installation of new refrigeration equipment or replacing damaged components, to ensure safety, compliance, and long-term system performance.

Scope

The scope covers the following :

- Prepare for Installation or Replacement
- Administer Installation or Replacement of Equipment/Components
- Monitor Performance Parameters

Elements and Performance Criteria

Prepare for Installation or Replacement

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

- PC1.** Conduct a site inspection to evaluate physical space, ventilation, power supply, and drainage.
- PC2.** Confirm equipment specifications align with Cooling load requirements, Type of refrigerant, Voltage and amperage compatibility.
- PC3.** Review the installation plan and the manufacturer's guidelines.
- PC4.** Confirm readiness of necessary tools such as a vacuum pump, gauges, torque wrenches, a leak detector, a brazing kit, etc.
- PC5.** Ensure the availability of the Correct refrigerant type, Lubricants, sealants, replacement parts or components, and PPE.
- PC6.** Ensure that the old equipment is isolated and decommissioned (if applicable) and the power supply is shut off using lockout/tagout (LOTO) procedures.

Administer Installation or Replacement of Equipment/Components

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

- PC7.** Monitor whether the new unit or component is positioned (compressor, evaporator, expansion valve, etc.) securely.
- PC8.** Ensure that the connections and fittings are done as per the manufacturer's specifications.
- PC9.** Conduct Pressure Testing and Leak Detection using techniques once the installation is completed.
- PC10.** Confirm that the refrigerant is charged by weight as per the manufacturer's specs and that the correct charging method (liquid or vapour) is followed.
- PC11.** Perform Functional Testing, such as Control panel response and digital thermostat reading, once the equipment is Powered On.

Monitor Performance Parameters

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

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- PC12.** Record the performance parameters once the equipment starts functioning, such as suction and discharge pressure, ambient and box temperature, compressor amperage and voltage, and subcooling and superheating (if required).
- PC13.** Log all installation/replacement steps, parameters, and refrigerant weight used.
- PC14.** Update asset tag, service record, and maintenance database.
- PC15.** Provide commissioning report, warranty documents, and system manual to facility management.
- PC16.** Monitor performance trends of the equipment and check operator feedback.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** Organisational procedures for operating, inspecting, and maintaining refrigeration equipment.
- KU2.** Types of refrigeration systems used in the facility and their functional components such as evaporators, condensers, compressors, and control circuits.
- KU3.** FSSAI requirements and relevant food safety regulations applicable to cold storage and handling.
- KU4.** Environmental impacts and hazards associated with refrigerants, and safe disposal procedures.
- KU5.** Procedures for detecting and controlling refrigerant leaks, including safety precautions for enclosed spaces.
- KU6.** Standard operating procedures for dismantling, repairing, and reassembling refrigeration components.
- KU7.** Tools, techniques, and equipment required for handling refrigeration repairs and maintenance.
- KU8.** Energy consumption factors of refrigeration systems and methods to improve efficiency.
- KU9.** Procedures for monitoring ethylene gas levels and replacing ethylene gas filters in controlled-atmosphere cold storage.
- KU10.** Methods for recognising early signs of refrigeration system failure and troubleshooting techniques.
- KU11.** Numerical calculations, data recording, and feedback mechanisms for improving operational efficiency.
- KU12.** Emergency response protocols for malfunctioning refrigeration systems or their components.

Generic Skills (GS)

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

- GS1.** Read and interpret operating manuals, control circuit diagrams, and safety instructions.
- GS2.** Communicate effectively with team members to ensure clarity of repair and maintenance tasks.
- GS3.** Use digital tools and data entry systems for recording operational parameters and maintenance activities.

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- GS4.** Apply problem-solving skills to identify faults and recommend corrective actions.
- GS5.** Follow safe working practices and maintain hygiene standards as per FSSAI guidelines.
- GS6.** Monitor and record ethylene gas levels, and take corrective action when readings exceed safe thresholds.
- GS7.** Demonstrate proper handling and replacement of ethylene gas filters.
- GS8.** Calculate energy usage and identify ways to optimise refrigeration system efficiency.
- GS9.** Work collaboratively with other staff members to ensure smooth maintenance operations.
- GS10.** Respond quickly and effectively to emergency situations involving refrigeration equipment failures.

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Prepare for Installation or Replacement</i>	12	22	-	3
PC1. Conduct a site inspection to evaluate physical space, ventilation, power supply, and drainage.	2	4	-	0.5
PC2. Confirm equipment specifications align with Cooling load requirements, Type of refrigerant, Voltage and amperage compatibility.	2	4	-	0.5
PC3. Review the installation plan and the manufacturer's guidelines.	2	3	-	0.5
PC4. Confirm readiness of necessary tools such as a vacuum pump, gauges, torque wrenches, a leak detector, a brazing kit, etc.	2	4	-	0.5
PC5. Ensure the availability of the Correct refrigerant type, Lubricants, sealants, replacement parts or components, and PPE.	2	3	-	0.5
PC6. Ensure that the old equipment is isolated and decommissioned (if applicable) and the power supply is shut off using lockout/tagout (LOTO) procedures.	2	4	-	0.5
<i>Administer Installation or Replacement of Equipment/Components</i>	10	18	-	3
PC7. Monitor whether the new unit or component is positioned (compressor, evaporator, expansion valve, etc.) securely.	2	4	-	0.5
PC8. Ensure that the connections and fittings are done as per the manufacturer's specifications.	2	3	-	0.5
PC9. Conduct Pressure Testing and Leak Detection using techniques once the installation is completed.	2	3	-	0.5
PC10. Confirm that the refrigerant is charged by weight as per the manufacturer's specs and that the correct charging method (liquid or vapour) is followed.	2	4	-	1

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. Perform Functional Testing, such as Control panel response and digital thermostat reading, once the equipment is Powered On.	2	4	-	0.5
<i>Monitor Performance Parameters</i>	8	20	-	4
PC12. Record the performance parameters once the equipment starts functioning, such as suction and discharge pressure, ambient and box temperature, compressor amperage and voltage, and subcooling and superheating (if required).	2	4	-	1
PC13. Log all installation/replacement steps, parameters, and refrigerant weight used.	1	4	-	0.5
PC14. Update asset tag, service record, and maintenance database.	1	4	-	0.5
PC15. Provide commissioning report, warranty documents, and system manual to facility management.	2	4	-	1
PC16. Monitor performance trends of the equipment and check operator feedback.	2	4	-	1
NOS Total	30	60	-	10

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	LSC/N9105
NOS Name	Administer Installation or Replacement of Refrigeration Equipment Components
Sector	Logistics
Sub-Sector	
Occupation	Maintenance
NSQF Level	5
Credits	2
Version	1.0
Last Reviewed Date	06/02/2026
Next Review Date	06/02/2029
NSQC Clearance Date	06/02/2026

Qualification Pack

LSC/N9103: Monitor overall performance and continuous improvement

Description

This OS unit is about overseeing service and repair needs of the refrigeration equipment and ensuring that it is working as required.

Scope

The scope covers the following :

- Conduct regular inspections.
- Continuous Improvement
- Train refrigeration equipment maintenance staff

Elements and Performance Criteria

Conduct regular inspections.

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

- PC1.** Carry out tests or checks regularly to ensure the system is working as required
- PC2.** Check for freezer insulation degradation by observing compressor duty cycle, condensation or presence of ice
- PC3.** Check the operation of the defrost system and thermostat and ensure that the equipment is calibrated correctly before using it.
- PC4.** Inspect cold store ceiling panel suspension rods and also their attachments at least once a year
- PC5.** Examine discharge pressure and suction pressure in the control system and make adjustments if necessary
- PC6.** Ensure that hygiene procedures are followed
- PC7.** Physically inspect systems for Unusual noises, vibrations, leaks, or icing and Audit refrigerant levels and compressor efficiency
- PC8.** Perform thermal imaging to detect insulation failures or hot spots and Validate calibration of sensors and thermostats
- PC9.** Trace faults in the components of the refrigeration system when they arise
- PC10.** Test the working of the equipment, after service or repair and Compare actual vs. expected performance.
- PC11.** Plan repairs limited to thermostats, electrical systems, start relays and defrost timers as much as possible
- PC12.** Avoid repairs to the cooling system if they are uneconomical, and consider replacement of components.

Continuous Improvement

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

Qualification Pack

- PC13.** Define Key Performance Indicators (KPIs) and Establish measurable benchmarks to assess equipment performance such as Temperature stability (vs. setpoint), Compressor run time and cycling frequency, Energy consumption (kWh per unit or per hour), Refrigerant pressure and level, Frequency of breakdowns or maintenance calls, Mean Time Between Failures (MTBF), Mean Time to Repair (MTTR), etc.
- PC14.** Set Up Real-Time Monitoring Tools and Install sensors and data loggers to track Temperature, humidity, pressure, and power usage.
- PC15.** Collect and Analyse Data Regularly to review equipment data daily/weekly for trends and anomalies.
- PC16.** Collect and Analyse Data Regularly to review equipment data daily/weekly for trends and anomalies.
- PC17.** Implement Corrective & Preventive Actions such as Adjust setpoints or defrost cycles for energy optimization, Replace underperforming components (e.g., fans, motors, valves), Upgrade to energy-efficient parts or automation systems, etc.
- PC18.** Revise maintenance schedules (move from time-based to condition-based where possible).
- PC19.** Maintain a Continuous Improvement Log containing Identified issues, Corrective actions, Outcomes (energy saved, fewer breakdowns, better temperature control) and Use this to justify investments or schedule capital upgrades.
- PC20.** Maintain issue logs and complaints by Internal ticketing management of issues like regular ticket, unexpected ticket and renewal ticket.

Train refrigeration equipment maintenance staff

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

- PC21.** Train maintenance staff to follow safety procedures while handling refrigerants and provide information on hazardous effects of refrigerants to the environment.
- PC22.** Educate maintenance staff to ensure refrigerant leaks do not enter work areas or closed rooms, and to comply with procedures and practices to maintain refrigeration equipment.
- PC23.** Teach maintenance staff on procedures while removing or replacing an evaporator, condenser or compressor.
- PC24.** Sensitize maintenance staff on the energy consumption of refrigeration equipment and ways to conserve energy.
- PC25.** Train maintenance staff to recognise early signs of failure, promptly report anomalies, and follow updated SOPs.
- PC26.** Instruct staff to inspect, dismantle, repair, and reinstate refrigeration components (evaporators, condensers, compressors) using appropriate tools, techniques, and control circuit diagrams.
- PC27.** Guide staff to perform required numerical calculations, data entry, and support improvement of feedback loops.
- PC28.** Train staff on emergency responses for malfunctioning refrigeration equipment or components.
- PC29.** Educate staff on FSSAI hygiene, temperature, and documentation compliance for cold chain operations.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

Qualification Pack

- KU1.** Organisational policies, SOPs, and reporting structures for refrigeration maintenance and performance monitoring.
- KU2.** National and international standards for refrigeration equipment operation (e.g., BIS, ISO, ASHRAE) and cold chain performance.
- KU3.** FSSAI guidelines and certifications relevant to cold chain temperature maintenance, hygiene, documentation, and recordkeeping.
- KU4.** Legal compliance related to refrigerant handling, storage, and disposal (e.g., India's Ozone Depleting Substances Rules).
- KU5.** Types of refrigeration systems used in cold chain operations and their functional components compressors, condensers, evaporators, control systems, and insulation.
- KU6.** Methods to check freezer insulation degradation, defrost system efficiency, and thermostat calibration.
- KU7.** Procedures for testing discharge and suction pressure, identifying faults, and verifying refrigerant charge levels.
- KU8.** Use of thermal imaging, pressure testing, and calibration tools to assess performance.
- KU9.** Importance of ethylene management in cold storage sources of ethylene production, ethylene sensitivity in products, and its effect on shelf life.
- KU10.** Operation, maintenance, and replacement schedules for ethylene gas filters and systems for ethylene level monitoring in storage rooms.
- KU11.** Data logging and IoT-based monitoring systems (SCADA, BMS, cloud dashboards) for real-time tracking of temperature, humidity, energy consumption, and refrigerant levels.
- KU12.** Key Performance Indicators (KPIs) for refrigeration system performance temperature stability, compressor cycling, energy efficiency, MTBF, MTTR.
- KU13.** Corrective and preventive maintenance actions to improve equipment efficiency and reliability.
- KU14.** PPE requirements and safe working practices when handling refrigerants, electrical systems, and mechanical components.
- KU15.** Emergency response procedures for ammonia or refrigerant leaks, equipment failure, or unsafe temperature excursions.
- KU16.** Safe disposal and recycling of refrigerants and obsolete refrigeration equipment.
- KU17.** Environmental impact of refrigerant gases and importance of leak prevention.

Generic Skills (GS)

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

- GS1.** Read and interpret equipment manuals, service records, and calibration certificates.
- GS2.** Understand SCADA/BMS dashboards, trend reports, and maintenance logs.
- GS3.** Interpret FSSAI cold chain compliance checklists and audit reports.
- GS4.** Communicate clearly with maintenance staff about inspection findings, corrective actions, and training needs.
- GS5.** Coordinate with warehouse, logistics, quality, and safety teams to minimise disruption during repairs or inspections.
- GS6.** Provide clear training instructions and demonstrations to maintenance personnel.

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- GS7.** Analyse real-time data to detect trends, deviations, or anomalies in equipment performance.
- GS8.** Decide whether to repair or replace a component based on cost benefit analysis and long-term reliability.
- GS9.** Compare actual performance against KPIs and suggest improvements.
- GS10.** Prioritise repairs or upgrades that improve energy efficiency and reduce downtime.
- GS11.** Operate refrigerant leak detectors, thermal imagers, and ethylene gas level monitors.
- GS12.** Use CMMS software, IoT dashboards, and digital tools for data logging and maintenance scheduling.
- GS13.** Calculate energy consumption, compressor duty cycles, and other performance metrics.
- GS14.** Adjust control settings, defrost cycles, and alarm thresholds for optimal performance.
- GS15.** Identify early signs of insulation degradation, gas leakage, or component failure.
- GS16.** Respond quickly to emergency alarms, including high ethylene levels, over-temperature events, or compressor overloads.
- GS17.** Safely handle refrigerants, electrical systems, and mechanical components in compliance with regulations.
- GS18.** Enforce hygiene and FSSAI compliance requirements during all maintenance activities.

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Conduct regular inspections.</i>	12	24	-	4.5
PC1. Carry out tests or checks regularly to ensure the system is working as required	1	2	-	0.5
PC2. Check for freezer insulation degradation by observing compressor duty cycle, condensation or presence of ice	1	2	-	0.5
PC3. Check the operation of the defrost system and thermostat and ensure that the equipment is calibrated correctly before using it.	1	2	-	0.5
PC4. Inspect cold store ceiling panel suspension rods and also their attachments at least once a year	1	2	-	0.5
PC5. Examine discharge pressure and suction pressure in the control system and make adjustments if necessary	1	2	-	0.5
PC6. Ensure that hygiene procedures are followed	-	2	-	0.5
PC7. Physically inspect systems for Unusual noises, vibrations, leaks, or icing and Audit refrigerant levels and compressor efficiency	2	2	-	0.5
PC8. Perform thermal imaging to detect insulation failures or hot spots and Validate calibration of sensors and thermostats	1	2	-	-
PC9. Trace faults in the components of the refrigeration system when they arise	1	2	-	0.5
PC10. Test the working of the equipment, after service or repair and Compare actual vs. expected performance.	1	2	-	-
PC11. Plan repairs limited to thermostats, electrical systems, start relays and defrost timers as much as possible	1	2	-	0.5
PC12. Avoid repairs to the cooling system if they are uneconomical, and consider replacement of components.	1	2	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Continuous Improvement</i>	9	17	-	2
PC13. Define Key Performance Indicators (KPIs) and Establish measurable benchmarks to assess equipment performance such as Temperature stability (vs. setpoint), Compressor run time and cycling frequency, Energy consumption (kWh per unit or per hour), Refrigerant pressure and level, Frequency of breakdowns or maintenance calls, Mean Time Between Failures (MTBF), Mean Time to Repair (MTTR), etc.	2	2	-	-
PC14. Set Up Real-Time Monitoring Tools and Install sensors and data loggers to track Temperature, humidity, pressure, and power usage.	1	2	-	0.5
PC15. Collect and Analyse Data Regularly to review equipment data daily/weekly for trends and anomalies.	1	2	-	-
PC16. Collect and Analyse Data Regularly to review equipment data daily/weekly for trends and anomalies.	1	2	-	0.5
PC17. Implement Corrective & Preventive Actions such as Adjust setpoints or defrost cycles for energy optimization, Replace underperforming components (e.g., fans, motors, valves), Upgrade to energy-efficient parts or automation systems, etc.	1	3	-	-
PC18. Revise maintenance schedules (move from time-based to condition-based where possible).	1	2	-	0.5
PC19. Maintain a Continuous Improvement Log containing Identified issues, Corrective actions, Outcomes (energy saved, fewer breakdowns, better temperature control) and Use this to justify investments or schedule capital upgrades.	1	2	-	0.5
PC20. Maintain issue logs and complaints by Internal ticketing management of issues like regular ticket, unexpected ticket and renewal ticket.	1	2	-	-
<i>Train refrigeration equipment maintenance staff</i>	9	19	-	3.5

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC21. Train maintenance staff to follow safety procedures while handling refrigerants and provide information on hazardous effects of refrigerants to the environment.	1	2	-	0.5
PC22. Educate maintenance staff to ensure refrigerant leaks do not enter work areas or closed rooms, and to comply with procedures and practices to maintain refrigeration equipment.	1	3	-	0.5
PC23. Teach maintenance staff on procedures while removing or replacing an evaporator, condenser or compressor.	1	2	-	0.5
PC24. Sensitize maintenance staff on the energy consumption of refrigeration equipment and ways to conserve energy.	1	2	-	0.5
PC25. Train maintenance staff to recognise early signs of failure, promptly report anomalies, and follow updated SOPs.	1	2	-	0.5
PC26. Instruct staff to inspect, dismantle, repair, and reinstate refrigeration components (evaporators, condensers, compressors) using appropriate tools, techniques, and control circuit diagrams.	1	2	-	0.5
PC27. Guide staff to perform required numerical calculations, data entry, and support improvement of feedback loops.	1	2	-	0.5
PC28. Train staff on emergency responses for malfunctioning refrigeration equipment or components.	1	2	-	-
PC29. Educate staff on FSSAI hygiene, temperature, and documentation compliance for cold chain operations.	1	2	-	-
NOS Total	30	60	-	10

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	LSC/N9103
NOS Name	Monitor overall performance and continuous improvement
Sector	Logistics
Sub-Sector	Cold Chain Logistics Solutions
Occupation	Maintenance
NSQF Level	5
Credits	3
Version	3.0
Last Reviewed Date	06/02/2026
Next Review Date	06/02/2029
NSQC Clearance Date	06/02/2026

Qualification Pack

LSC/N9901: Maintain food and personnel safety, health and hygiene in cold storage plant

Description

This OS unit is about complying with safety, health and hygiene at the workplace to have a hazard-free environment and avoid downtime

Scope

The scope covers the following :

- Take precautionary measures to avoid work hazards
- Follow standard health, safety and hygiene procedures

Elements and Performance Criteria

Take precautionary measures to avoid work hazards

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

- PC1.** Assess the various health, safety and environmental hazards in the cold storage
- PC2.** Take necessary steps to eliminate or minimize the hazards
- PC3.** Analyze the causes of accidents at the workplace
- PC4.** Take preventive measures to avoid risk of cold burns and other injury due to contact with hot surfaces, gas, fire, hot fluids/ liquids, etc.
- PC5.** Ensure the employees have access to first aid kit when needed
- PC6.** Ensure to use personal protective equipment and safety gear such as gloves, jacket, footwear etc. for loading and unloading material in cold rooms to protect themselves from hypothermia, frostbite etc
- PC7.** Ensure to display safety signs at places where necessary for people to be cautious
- PC8.** Use rubber mats in the places where floors are constantly wet
- PC9.** Ensure electrical precautions such as insulated clothing, adequate equipment insulation, dry work area, switch off the power supply when not required, etc
- PC10.** Display emergency exit plan at prominent places and have emergency assembly area earmarked as a grid for easy counting of on duty associates and workers.
- PC11.** Unplug the control panel, compressor, condensor etc before performing maintenance
- PC12.** Report to the superior on any problems and hazards identified
- PC13.** Install fire alarms (electrical/manual) in cold store/deep freeze and keep other safety devices like hammer/mallet in the storage area

Follow standard health, safety and hygiene procedures

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

- PC14.** Maintain appropriate ventilation in the cold rooms to avoid unacceptable accumulation of heat, condensation or odours
- PC15.** Check and review the cold storage areas frequently

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- PC16.** Stack items in an organized way and use safe lifting techniques to reduce risk of injuries from handling procedures at the storage areas
- PC17.** Ensure no sign of pest infestation and install rodent traps, fly glues and insectocutors wherever needed
- PC18.** Follow hygiene & sanitation standards of Government bodies like FSSAI, APEDA and /or EIA or importing countries like FAO, EU standards
- PC19.** Use effective loading and unloading systems
- PC20.** Proper stock rotation (First in First out) to be practiced
- PC21.** Segregate damaged/non-conforming products from other products to designate area for appropriate disposition
- PC22.** Fumigate containers depending upon product and contamination or as per customers requirement
- PC23.** Avoid smoking, spitting, eating etc near food storage area
- PC24.** Ensure reefers are covered, clean, free from pest infestation & other contaminants
- PC25.** Dispose cold storage plant waste in the designated areas safely as per companys policies and rules
- PC26.** Ensure to be safe while handling machines (generator, compressor, condenser etc.), gas (ammonia) and chemicals (ethylene, refrigerants etc.)
- PC27.** Keep the floors free from oil, water and grease to avoid slippery surface
- PC28.** Cut nails regularly and avoid applying nail paint. Avoid wearing bangles, rings, and chains in cold storage
- PC29.** Wash hands with soap solution and dry under a dryer as they enter for duty or after using wash room
- PC30.** Periodic examination of protective devices, pressure vessels and pipelines, and parts of pipework by a competent person to prevent defect that may give rise to danger
- PC31.** Ensure workers suffering from abscess, boils etc. should be relieved from food handling
- PC32.** Develop personal hygiene habits like brushing teeth, taking shower every day, wearing clean and tidy clothes after ironing etc.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** Company's HR policies on personnel management
- KU2.** Company's reporting structure
- KU3.** Occupational health and safety standards
- KU4.** Cold storage plant inspection checklist
- KU5.** Company's sanitary standard operating procedures
- KU6.** Procedures to follow during emergency maintenance issues
- KU7.** Technical standards for design and construction of cold storages: Bureau of Indian standards (BIS), International standard (ISO) etc.
- KU8.** The purpose and usage of protective gears such as gloves , jackets etc. while working
- KU9.** Use of first aid at workplace

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- KU10.** Cold storage order, 1980
- KU11.** Food safety and standards act, 2006
- KU12.** Reporting procedure or heirarchy for signs of damage and potential hazards
- KU13.** Methods to minimize accidental risks
- KU14.** Safe storage and handling of chemicals like refrigerants, ammonia, ethylene etc.
- KU15.** Loading and unloading systems
- KU16.** Standard operating procedure for safety drills and equipment maintenance
- KU17.** Operation of machines: compressor, condenser, evaporator etc.
- KU18.** Emergency procedures to be followed in case of an mishap such as fire, accidents, etc. and communication of safety instructions to subordinate staff
- KU19.** Emergency responses in case of malfunctioning of refrigeration equipment as a whole or its components like evaporator, condenser or compressor
- KU20.** Solid, liquid and gaseous waste disposal, treatment norms and equipment
- KU21.** Necessary action to be taken for the hazards identified
- KU22.** Knowledge of Quality systems like BRC, FSSAI, ISO, FSSC, HACCP etc.

Generic Skills (GS)

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

- GS1.** Read and interpret the relevant organisation policies, procedures and diagrams that identify health, safety and safe environmental practices.
- GS2.** Read job sheets, company policy documents and information displayed at the workplace for health, safety and environment.
- GS3.** Read notes/comments from the senior
- GS4.** Fill up documentation related to health, safety and environmental standards, if required
- GS5.** Verbally report health, safety and environmental hazards and poor organisation practice.
- GS6.** Communicate to the supervisor about the work health, safety and environmental issues
- GS7.** Receive instructions from supervisor on minimizing the risks
- GS8.** Communicate with co-workers about the precautions to be taken for hazards free work
- GS9.** Take preventive measures for the identified hazards
- GS10.** Select appropriate hand tools and personal protection equipment
- GS11.** Identify first aid needs in case of an injury
- GS12.** Formalize and display evacuation plan at strategic locations
- GS13.** Ensure targeted product delivery by practicing stipulated standards of occupational health safety and environmental measures
- GS14.** Take care of personal and equipment protection
- GS15.** Identify the hazards and suggest possible solutions
- GS16.** Use safety equipment such as fire extinguisher during fire accidents
- GS17.** Store tools in a safe way
- GS18.** Analyse the seriousness of the hazards
- GS19.** Evolve smooth workflow by avoiding hazards at workplace



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GS20. Evaluate and apply the possible solutions for the hazards, as necessary

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Take precautionary measures to avoid work hazards</i>	12	23	-	6
PC1. Assess the various health, safety and environmental hazards in the cold storage	0.5	1	-	-
PC2. Take necessary steps to eliminate or minimize the hazards	1	2	-	1
PC3. Analyze the causes of accidents at the workplace	0.5	1	-	-
PC4. Take preventive measures to avoid risk of cold burns and other injury due to contact with hot surfaces, gas, fire, hot fluids/ liquids, etc.	1	2	-	1
PC5. Ensure the employees have access to first aid kit when needed	1	2	-	-
PC6. Ensure to use personal protective equipment and safety gear such as gloves, jacket, footwear etc. for loading and unloading material in cold rooms to protect themselves from hypothermia, frostbite etc	1	2	-	1
PC7. Ensure to display safety signs at places where necessary for people to be cautious	1	2	-	-
PC8. Use rubber mats in the places where floors are constantly wet	0.5	2	-	1
PC9. Ensure electrical precautions such as insulated clothing, adequate equipment insulation, dry work area, switch off the power supply when not required, etc	2	2	-	-
PC10. Display emergency exit plan at prominent places and have emergency assembly area earmarked as a grid for easy counting of on duty associates and workers.	1	2	-	-
PC11. Unplug the control panel, compressor, condensor etc before performing maintenance	0.5	1	-	-
PC12. Report to the superior on any problems and hazards identified	1	2	-	1

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. Install fire alarms (electrical/manual) in cold store/deep freeze and keep other safety devices like hammer/mallet in the storage area	1	2	-	1
<i>Follow standard health, safety and hygiene procedures</i>	18	37	-	4
PC14. Maintain appropriate ventilation in the cold rooms to avoid unacceptable accumulation of heat, condensation or odours	0.5	1	-	-
PC15. Check and review the cold storage areas frequently	0.5	2	-	-
PC16. Stack items in an organized way and use safe lifting techniques to reduce risk of injuries from handling procedures at the storage areas	1	2	-	-
PC17. Ensure no sign of pest infestation and install rodent traps, fly glues and insectocutors wherever needed	1	2	-	1
PC18. Follow hygiene & sanitation standards of Government bodies like FSSAI, APEDA and /or EIA or importing countries like FAO, EU standards	1	2	-	-
PC19. Use effective loading and unloading systems	1	2	-	-
PC20. Proper stock rotation (First in First out) to be practiced	1	2	-	-
PC21. Segregate damaged/non-conforming products from other products to designate area for appropriate disposition	1	2	-	1
PC22. Fumigate containers depending upon product and contamination or as per customers requirement	1	2	-	-
PC23. Avoid smoking, spitting, eating etc near food storage area	1	2	-	-
PC24. Ensure reefers are covered, clean, free from pest infestation & other contaminants	1	2	-	1
PC25. Dispose cold storage plant waste in the designated areas safely as per companys policies and rules	1	2	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC26. Ensure to be safe while handling machines (generator, compressor, condenser etc.), gas (ammonia) and chemicals (ethylene, refrigerants etc.)	1	2	-	1
PC27. Keep the floors free from oil, water and grease to avoid slippery surface	1	2	-	-
PC28. Cut nails regularly and avoid applying nail paint. Avoid wearing bangles, rings, and chains in cold storage	1	2	-	-
PC29. Wash hands with soap solution and dry under a dryer as they enter for duty or after using wash room	1	2	-	-
PC30. Periodic examination of protective devices, pressure vessels and pipelines, and parts of pipework by a competent person to prevent defect that may give rise to danger	1	2	-	-
PC31. Ensure workers suffering from abscess, boils etc. should be relieved from food handling	1	2	-	-
PC32. Develop personal hygiene habits like brushing teeth, taking shower every day, wearing clean and tidy clothes after ironing etc.	1	2	-	-
NOS Total	30	60	-	10

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	LSC/N9901
NOS Name	Maintain food and personnel safety, health and hygiene in cold storage plant
Sector	Logistics
Sub-Sector	Cold Chain Logistics Solutions
Occupation	Cold Chain Operations
NSQF Level	5
Credits	2
Version	3.0
Last Reviewed Date	06/02/2026
Next Review Date	06/02/2029
NSQC Clearance Date	06/02/2026

Qualification Pack

LSC/N9202: Oversee modified atmosphere requirements for the products

Description

This OS is about preparing, maintaining and monitoring cold room, container and equipment for modified atmosphere requirements of various products.

Scope

The scope covers the following :

- Prepare and monitor cold room or container for modified atmosphere storage
- Prepare and maintain equipment for modified atmosphere conditions
- Monitor and report modified atmosphere conditions

Elements and Performance Criteria

Prepare and monitor cold room or container for modified atmosphere storage

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

- PC1.** maintain temperature ranges ideal for the products stored or transported
- PC2.** maintain concentration of oxygen, carbon dioxide, nitrogen and ethylene as per the commodities stored
- PC3.** consider product heat and set ventilation to control cooling and carbon dioxide level
- PC4.** monitor composition of gases regularly and accurately
- PC5.** monitor for chilling injury symptoms on the products
- PC6.** ensure to keep the room or container sealed
- PC7.** ensure proper sanitation to avoid conditions which favours thriving of pathogenic microorganisms

Prepare and maintain equipment for modified atmosphere conditions

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

- PC8.** assign a resource to maintain records of refrigeration equipment
- PC9.** operate nitrogen generator with its controls and fan blowers
- PC10.** regularly sample air parameters in the cold chamber to check the conditions
- PC11.** monitor when to stop the system and replenish the cold chamber with fresh air when required
- PC12.** ensure to retrofit container with purge port assembly, when they contain perishable products and transported, to make it suitable for modified atmosphere use
- PC13.** prepare absorbers and adsorbers of oxygen, carbon dioxide, ethylene and water

Monitor and report modified atmosphere conditions

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

- PC14.** ensure that legal requirements are followed while collecting, moving or
- PC15.** prepare documentation regarding modified atmospheric conditions maintained for different products

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- PC16.** ensure that maintenance records of relevant equipment and cleaning records in the modified atmosphere storage area are made
- PC17.** report any faults in the readings of required modified atmosphere requirements
- PC18.** quantify extended storability of the products dealt with

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** organizational policies and guidelines
- KU2.** reporting structure
- KU3.** refrigerant usage with its relevant safety and security procedures
- KU4.** procedures to follow during emergency issues
- KU5.** roles and responsibilities of labourers in the cold storage area
- KU6.** accessories and tools required for maintaining modified atmosphere
- KU7.** typical ratios of different gases used in modified atmosphere requirements for different types of products
- KU8.** importance of having modified atmosphere to control shelf life of various products
- KU9.** different types of processes used to attain modified atmosphere requirements
- KU10.** different types of equipments required in modified atmosphere storage and packing
- KU11.** methods to alter atmosphere, like, controlled atmosphere, modified atmosphere, fresh air exchange, and packaging solutions
- KU12.** benefits and detrimental effects of modified atmosphere on products
- KU13.** storage requirements of various types of products
- KU14.** common commodities which require modified atmosphere
- KU15.** key physical and chemical stages in natural ripening of perishable products
- KU16.** how environmental conditions like cold room temperature and humidity affect life cycle of products
- KU17.** timescales of ripening and how to control them, in case of fresh produce ripening
- KU18.** how the condition of one product is affected by the presence of other products handled alongside in the cold chain
- KU19.** exposure of products to ethylene with regards to its respiration rate and ripening
- KU20.** methods for assessing product quality stored in modified atmosphere conditions
- KU21.** relation between product respiration rate and atmospheric composition
- KU22.** effects of modified atmospheric conditions on the skin colour, firmness, texture of the products
- KU23.** relation between metabolism rate and variations in temperature, relative humidity and oxygen levels
- KU24.** parameters of global sustainability
- KU25.** significance of CO₂ emissions and its impact on global warming
- KU26.** knowledge about material footprint per capita and material footprint per GDP
- KU27.** the initiatives taken by the government and various organisations for sustainability

Qualification Pack

KU28. legislative requirements and organisational procedures for waste management and disposal

KU29. parameters and data required for material and energy audit

Generic Skills (GS)

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

- GS1.** process required for different types of products
- GS2.** read equipment manual to handle its operation
- GS3.** read documents regarding modified atmosphere concepts
- GS4.** read safety instructions
- GS5.** write down process parameters in modified atmospheric conditions
- GS6.** write observations related to the process
- GS7.** communicate all the activities required to be done to the subordinates
- GS8.** listen to the queries and clarify doubts
- GS9.** communicate any issue that may arise in the modified atmosphere process to the concerned technical solver
- GS10.** interact frequently with other employees to work efficiently
- GS11.** decide on the priority of tasks
- GS12.** plan routine checks to ensure modified atmosphere conditions are maintained
- GS13.** organize tasks and allocate labour resources for the process to maintain modified atmosphere
- GS14.** organize activities based on budgeting constraints
- GS15.** enforce exact modified atmosphere storage and hygiene conditions as per the products handled for the organization or for its customers
- GS16.** solve any work related problems that workers may face
- GS17.** handle allotment of tasks to workers in case of staff shortage or delays in activities
- GS18.** interpret process flowcharts for modified atmosphere required for different products
- GS19.** analyze critical recurring issues and identify measures to solve the same
- GS20.** identify ways to minimize chilling symptoms seen on the products
- GS21.** use acquired knowledge to trace issues in the process
- GS22.** understand mathematical models relating respiration of various commodities and atmospheric composition

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Prepare and monitor cold room or container for modified atmosphere storage</i>	14	22	-	3
PC1. maintain temperature ranges ideal for the products stored or transported	2	3	-	-
PC2. maintain concentration of oxygen, carbon dioxide, nitrogen and ethylene as per the commodities stored	2	3	-	-
PC3. consider product heat and set ventilation to control cooling and carbon dioxide level	2	3	-	-
PC4. monitor composition of gases regularly and accurately	2	3	-	-
PC5. monitor for chilling injury symptoms on the products	2	3	-	1
PC6. ensure to keep the room or container sealed	2	3	-	1
PC7. ensure proper sanitation to avoid conditions which favours thriving of pathogenic microorganisms	2	4	-	1
<i>Prepare and maintain equipment for modified atmosphere conditions</i>	11	20	-	4
PC8. assign a resource to maintain records of refrigeration equipment	2	3	-	-
PC9. operate nitrogen generator with its controls and fan blowers	2	3	-	1
PC10. regularly sample air parameters in the cold chamber to check the conditions	2	3	-	-
PC11. monitor when to stop the system and replenish the cold chamber with fresh air when required	2	3	-	1
PC12. ensure to retrofit container with purge port assembly, when they contain perishable products and transported, to make it suitable for modified atmosphere use	2	4	-	1

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. prepare absorbers and adsorbers of oxygen, carbon dioxide, ethylene and water	1	4	-	1
<i>Monitor and report modified atmosphere conditions</i>	5	18	-	3
PC14. ensure that legal requirements are followed while collecting, moving or	1	4	-	1
PC15. prepare documentation regarding modified atmospheric conditions maintained for different products	1	4	-	1
PC16. ensure that maintenance records of relevant equipment and cleaning records in the modified atmosphere storage area are made	1	4	-	-
PC17. report any faults in the readings of required modified atmosphere requirements	1	3	-	1
PC18. quantify extended storability of the products dealt with	1	3	-	-
NOS Total	30	60	-	10

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	LSC/N9202
NOS Name	Oversee modified atmosphere requirements for the products
Sector	Logistics
Sub-Sector	Cold Chain Logistics Solutions
Occupation	Engineering, Sustainability
NSQF Level	6
Credits	3
Version	2.0
Last Reviewed Date	06/02/2026
Next Review Date	06/02/2029
NSQF Clearance Date	06/02/2026

Qualification Pack

DGT/VSQ/N0102: Employability Skills (60 Hours)

Description

This unit is about employability skills, Constitutional values, becoming a professional in the 21st Century, digital, financial, and legal literacy, diversity and Inclusion, English and communication skills, customer service, entrepreneurship, and apprenticeship, getting ready for jobs and career development.

Scope

The scope covers the following :

- Introduction to Employability Skills
- Constitutional values - Citizenship
- Becoming a Professional in the 21st Century
- Basic English Skills
- Career Development & Goal Setting
- Communication Skills
- Diversity & Inclusion
- Financial and Legal Literacy
- Essential Digital Skills
- Entrepreneurship
- Customer Service
- Getting ready for Apprenticeship & Jobs

Elements and Performance Criteria

Introduction to Employability Skills

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

- PC1.** identify employability skills required for jobs in various industries
- PC2.** identify and explore learning and employability portals

Constitutional values - Citizenship

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

- PC3.** recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.
- PC4.** follow environmentally sustainable practices

Becoming a Professional in the 21st Century

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

- PC5.** recognize the significance of 21st Century Skills for employment
- PC6.** practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life

Basic English Skills

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

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- PC7.** use basic English for everyday conversation in different contexts, in person and over the telephone
- PC8.** read and understand routine information, notes, instructions, mails, letters etc. written in English
- PC9.** write short messages, notes, letters, e-mails etc. in English

Career Development & Goal Setting

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

- PC10.** understand the difference between job and career
- PC11.** prepare a career development plan with short- and long-term goals, based on aptitude

Communication Skills

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

- PC12.** follow verbal and non-verbal communication etiquette and active listening techniques in various settings
- PC13.** work collaboratively with others in a team

Diversity & Inclusion

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

- PC14.** communicate and behave appropriately with all genders and PwD
- PC15.** escalate any issues related to sexual harassment at workplace according to POSH Act

Financial and Legal Literacy

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

- PC16.** select financial institutions, products and services as per requirement
- PC17.** carry out offline and online financial transactions, safely and securely
- PC18.** identify common components of salary and compute income, expenses, taxes, investments etc
- PC19.** identify relevant rights and laws and use legal aids to fight against legal exploitation

Essential Digital Skills

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

- PC20.** operate digital devices and carry out basic internet operations securely and safely
- PC21.** use e- mail and social media platforms and virtual collaboration tools to work effectively
- PC22.** use basic features of word processor, spreadsheets, and presentations

Entrepreneurship

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

- PC23.** identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research
- PC24.** develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion
- PC25.** identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity

Customer Service

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

- PC26.** identify different types of customers
- PC27.** identify and respond to customer requests and needs in a professional manner.

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PC28. follow appropriate hygiene and grooming standards

Getting ready for apprenticeship & Jobs

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

PC29. create a professional Curriculum vitae (Résumé)

PC30. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively

PC31. apply to identified job openings using offline /online methods as per requirement

PC32. answer questions politely, with clarity and confidence, during recruitment and selection

PC33. identify apprenticeship opportunities and register for it as per guidelines and requirements

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. need for employability skills and different learning and employability related portals

KU2. various constitutional and personal values

KU3. different environmentally sustainable practices and their importance

KU4. Twenty first (21st) century skills and their importance

KU5. how to use English language for effective verbal (face to face and telephonic) and written communication in formal and informal set up

KU6. importance of career development and setting long- and short-term goals

KU7. about effective communication

KU8. POSH Act

KU9. Gender sensitivity and inclusivity

KU10. different types of financial institutes, products, and services

KU11. how to compute income and expenditure

KU12. importance of maintaining safety and security in offline and online financial transactions

KU13. different legal rights and laws

KU14. different types of digital devices and the procedure to operate them safely and securely

KU15. how to create and operate an e- mail account and use applications such as word processors, spreadsheets etc.

KU16. how to identify business opportunities

KU17. types and needs of customers

KU18. how to apply for a job and prepare for an interview

KU19. apprenticeship scheme and the process of registering on apprenticeship portal

Generic Skills (GS)

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

GS1. read and write different types of documents/instructions/correspondence

GS2. communicate effectively using appropriate language in formal and informal settings



Qualification Pack

- GS3.** behave politely and appropriately with all
- GS4.** how to work in a virtual mode
- GS5.** perform calculations efficiently
- GS6.** solve problems effectively
- GS7.** pay attention to details
- GS8.** manage time efficiently
- GS9.** maintain hygiene and sanitization to avoid infection

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Introduction to Employability Skills</i>	1	1	-	-
PC1. identify employability skills required for jobs in various industries	-	-	-	-
PC2. identify and explore learning and employability portals	-	-	-	-
<i>Constitutional values - Citizenship</i>	1	1	-	-
PC3. recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.	-	-	-	-
PC4. follow environmentally sustainable practices	-	-	-	-
<i>Becoming a Professional in the 21st Century</i>	2	4	-	-
PC5. recognize the significance of 21st Century Skills for employment	-	-	-	-
PC6. practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life	-	-	-	-
<i>Basic English Skills</i>	2	3	-	-
PC7. use basic English for everyday conversation in different contexts, in person and over the telephone	-	-	-	-
PC8. read and understand routine information, notes, instructions, mails, letters etc. written in English	-	-	-	-
PC9. write short messages, notes, letters, e-mails etc. in English	-	-	-	-
<i>Career Development & Goal Setting</i>	1	2	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. understand the difference between job and career	-	-	-	-
PC11. prepare a career development plan with short- and long-term goals, based on aptitude	-	-	-	-
<i>Communication Skills</i>	2	2	-	-
PC12. follow verbal and non-verbal communication etiquette and active listening techniques in various settings	-	-	-	-
PC13. work collaboratively with others in a team	-	-	-	-
<i>Diversity & Inclusion</i>	1	2	-	-
PC14. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC15. escalate any issues related to sexual harassment at workplace according to POSH Act	-	-	-	-
<i>Financial and Legal Literacy</i>	2	3	-	-
PC16. select financial institutions, products and services as per requirement	-	-	-	-
PC17. carry out offline and online financial transactions, safely and securely	-	-	-	-
PC18. identify common components of salary and compute income, expenses, taxes, investments etc	-	-	-	-
PC19. identify relevant rights and laws and use legal aids to fight against legal exploitation	-	-	-	-
<i>Essential Digital Skills</i>	3	4	-	-
PC20. operate digital devices and carry out basic internet operations securely and safely	-	-	-	-
PC21. use e- mail and social media platforms and virtual collaboration tools to work effectively	-	-	-	-
PC22. use basic features of word processor, spreadsheets, and presentations	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Entrepreneurship</i>	2	3	-	-
PC23. identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research	-	-	-	-
PC24. develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion	-	-	-	-
PC25. identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity	-	-	-	-
<i>Customer Service</i>	1	2	-	-
PC26. identify different types of customers	-	-	-	-
PC27. identify and respond to customer requests and needs in a professional manner.	-	-	-	-
PC28. follow appropriate hygiene and grooming standards	-	-	-	-
<i>Getting ready for apprenticeship & Jobs</i>	2	3	-	-
PC29. create a professional Curriculum vitae (Résumé)	-	-	-	-
PC30. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively	-	-	-	-
PC31. apply to identified job openings using offline /online methods as per requirement	-	-	-	-
PC32. answer questions politely, with clarity and confidence, during recruitment and selection	-	-	-	-
PC33. identify apprenticeship opportunities and register for it as per guidelines and requirements	-	-	-	-
NOS Total	20	30	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	DGT/VSQ/N0102
NOS Name	Employability Skills (60 Hours)
Sector	Cross Sectoral
Sub-Sector	Professional Skills
Occupation	Employability
NSQF Level	4
Credits	2
Version	1.0
Last Reviewed Date	12/03/2026
Next Review Date	12/03/2031
NSQC Clearance Date	12/03/2026

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC
3. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below)
4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criterion
5. To pass the Qualification Pack, every trainee should score a minimum of 70% for NSQF level 4 & above job roles and 50% for NSQF level 1 to 3 job roles
6. In case of unsuccessful completion, the trainee may seek re-assessment 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.)

Minimum Passing % at NOS Level: 50

(Please note: A Trainee must score the minimum percentage for each NOS separately as well as on the QP as a whole.)

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
LSC/N9101.Plan preventive maintenance of refrigeration equipment	30	60	0	10	100	20
LSC/N9102.Supervise maintenance activities	30	60	0	10	100	20
LSC/N9105.Administer Installation or Replacement of Refrigeration Equipment Components	30	60	0	10	100	20
LSC/N9103.Monitor overall performance and continuous improvement	30	60	0	10	100	10
LSC/N9901.Maintain food and personnel safety, health and hygiene in cold storage plant	30	60	-	10	100	10
LSC/N9202.Oversee modified atmosphere requirements for the products	30	60	-	10	100	10
DGT/VSQ/N0102.Employability Skills (60 Hours)	20	30	-	-	50	10
Total	200	390	-	60	650	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.

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Knowledge and Understanding (KU)	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.
Organisational Context	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills/ Generic Skills (GS)	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.
Electives	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.