



# Micro-Irrigation Technician

QP Code: AGR/Q1002

Version: 2.0

NSQF Level: 4

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## AGR/Q1002: Micro-Irrigation Technician

### Brief Job Description

A Micro-Irrigation Technician is responsible for installation, testing and maintenance of a micro-irrigation system in the field to ensure uninterrupted supply of water for farm operations.

### Personal Attributes

The individual must be physically fit to work for long durations. The person must have problem-solving skills with an ability to work collaboratively with others to achieve the work objectives. Ability to read, write and communicate clearly are the other important attributes required in this job role.

### Applicable National Occupational Standards (NOS)

#### Compulsory NOS:

1. [AGR/N1004: Prepare to setup the micro-irrigation system](#)
2. [AGR/N1005: Install the micro-irrigation system](#)
3. [AGR/N1006: Perform repair and maintenance of the micro-irrigation system](#)
4. [AGR/N9918: Communicate effectively at the workplace](#)
5. [AGR/N9903: Maintain health and safety at the workplace](#)

### Qualification Pack (QP) Parameters

<b>Sector</b>	Agriculture
<b>Sub-Sector</b>	Agriculture Crop Production
<b>Occupation</b>	Precision Farming
<b>Country</b>	India
<b>NSQF Level</b>	4
<b>Aligned to NCO/ISCO/ISIC Code</b>	NCO-2015/3142.0101
<b>Minimum Educational Qualification &amp; Experience</b>	8th Class
<b>Minimum Level of Education for Training in School</b>	10th Class

<b>Pre-Requisite License or Training</b>	NA
<b>Minimum Job Entry Age</b>	18 Years
<b>Last Reviewed On</b>	20/04/2021
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<b>NSQC Approval Date</b>	
<b>Version</b>	2.0

## **AGR/N1004: Prepare to setup the micro-irrigation system**

### **Description**

This OS unit is about planning the installation of a micro-irrigation system at a farm for effective irrigation and water management..

### **Scope**

The scope covers the following :

- Plan the micro-irrigation system
- Arrange the necessary resources

### **Elements and Performance Criteria**

#### *Plan the micro-irrigation System*

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

- PC1.** identify the characteristics of soil, water and local climate at the site proposed for the installation of micro-irrigation system
- PC2.** evaluate the land gradient and elevation differences to select a suitable micro-irrigation system
- PC3.** measure the area to be irrigated along with the water needs of the proposed crop at different stages of its growth
- PC4.** select a suitable type of micro-irrigation system such as sprinkler irrigation, drip irrigation, spray irrigation, subsurface irrigation
- PC5.** plan optimum spacing between the drip lines, drip line emitters and the crop plants
- PC6.** prepare a design for the installation of micro-irrigation system
- PC7.** comply with the relevant regulatory requirements in the micro-irrigation plan

#### *Arrange the necessary resources*

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

- PC8.** identify the installation material, tools, equipment and Personal Protective Equipment (PPE) required for the installation of the selected micro-irrigation system
- PC9.** identify the relevant vendors that retail the required resources
- PC10.** procure the required installation material, tools, equipment and PPE based on the quality offered by the vendor
- PC11.** arrange for safe storage of the installation material, tools, equipment and PPE
- PC12.** maintain the record of purchase

### **Knowledge and Understanding (KU)**

The individual on the job needs to know and understand:

- KU1.** regulatory requirements governing the installation of a micro-irrigation system
- KU2.** relevant documentation requirements

- KU3.** different parameters to be assessed to plan the installation of a micro-irrigation system such as soil, climate and water characteristics
- KU4.** different types of micro-irrigation systems such as sprinkler irrigation, drip irrigation, spray irrigation, and subsurface irrigation
- KU5.** various material, tools, equipment and PPE required for the installation of a micro-irrigation system
- KU6.** basics of crop cultivation
- KU7.** water requirement for different types of crop
- KU8.** the process of planning a micro-irrigation system

### **Generic Skills (GS)**

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

- GS1.** prepare work-related notes and records
- GS2.** read the relevant guides, manuals and literature to get updated information about the field of work
- GS3.** perform basic calculations
- GS4.** identify possible disruptions to work and take preventive measures
- GS5.** listen attentively to understand the speaker
- GS6.** co-ordinate with co-workers to achieve the work objectives
- GS7.** take quick decisions to deal with workplace emergencies and accidents
- GS8.** communicate politely and professionally
- GS9.** apply domain knowledge and experience to improve the quality of work

## Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Plan the micro-irrigation System</i>	<b>20</b>	<b>25</b>	-	<b>15</b>
<b>PC1.</b> identify the characteristics of soil, water and local climate at the site proposed for the installation of micro-irrigation system	-	-	-	-
<b>PC2.</b> evaluate the land gradient and elevation differences to select a suitable micro-irrigation system	-	-	-	-
<b>PC3.</b> measure the area to be irrigated along with the water needs of the proposed crop at different stages of its growth	-	-	-	-
<b>PC4.</b> select a suitable type of micro-irrigation system such as sprinkler irrigation, drip irrigation, spray irrigation, subsurface irrigation	-	-	-	-
<b>PC5.</b> plan optimum spacing between the drip lines, drip line emitters and the crop plants	-	-	-	-
<b>PC6.</b> prepare a design for the installation of micro-irrigation system	-	-	-	-
<b>PC7.</b> comply with the relevant regulatory requirements in the micro-irrigation plan	-	-	-	-
<i>Arrange the necessary resources</i>	<b>10</b>	<b>15</b>	-	<b>15</b>
<b>PC8.</b> identify the installation material, tools, equipment and Personal Protective Equipment (PPE) required for the installation of the selected micro-irrigation system	-	-	-	-
<b>PC9.</b> identify the relevant vendors that retail the required resources	-	-	-	-
<b>PC10.</b> procure the required installation material, tools, equipment and PPE based on the quality offered by the vendor	-	-	-	-
<b>PC11.</b> arrange for safe storage of the installation material, tools, equipment and PPE	-	-	-	-
<b>PC12.</b> maintain the record of purchase	-	-	-	-
<b>NOS Total</b>	<b>30</b>	<b>40</b>	-	<b>30</b>

**National Occupational Standards (NOS) Parameters**

<b>NOS Code</b>	AGR/N1004
<b>NOS Name</b>	Prepare to setup the micro-irrigation system
<b>Sector</b>	Agriculture
<b>Sub-Sector</b>	Agriculture Crop Production
<b>Occupation</b>	Precision Farming
<b>NSQF Level</b>	4
<b>Credits</b>	TBD
<b>Version</b>	2.0
<b>Last Reviewed Date</b>	20/04/2021
<b>Next Review Date</b>	20/04/2026
<b>NSQC Clearance Date</b>	

## AGR/N1005: Install the micro-irrigation system

### Description

This OS unit is about installing, testing and starting the operations of a micro-irrigation system.

### Scope

The scope covers the following :

- Install the micro-irrigation system
- Carry out post-installation activities
- Optimise resource utilisation

### Elements and Performance Criteria

#### *Install the micro-irrigation system*

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

- PC1.** create holes in the water tubes as per the requirement
- PC2.** lay the water tubes in the field as per the plan
- PC3.** secure the water tubes on the ground using ground stakes/ conduit brackets
- PC4.** install emitters/ sprayers/ foggers at the identified spots
- PC5.** set up the irrigation timer
- PC6.** apply cap on the other end of the main tube
- PC7.** connect the main water tube to the water outlet at the farm
- PC8.** connect vacuum breaker with the pressure regulator to prevent backflow of water
- PC9.** install the water-pump at the main water supply
- PC10.** install water filter to prevent silt and dirt from getting in the water tubes
- PC11.** fix flush valves at the identified spots to facilitate regular flushing of any deposits in the water tubes
- PC12.** install the fertigation equipment to deliver water mixed with fertilizers to plants
- PC13.** run clean water through the tubes to remove any dirt and debris inside them
- PC14.** test the micro-irrigation system to see if it functions as expected
- PC15.** perform troubleshooting for any issues identified with the micro-irrigation system
- PC16.** cover the water tubes with soil/ mulch as per the plan

#### *Carry out post-installation activities*

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

- PC17.** guide the farmer regarding the functioning, minor repair and maintenance and maintenance schedule of the micro-irrigation system
- PC18.** guide the farmer regarding the retrieval of micro-irrigation system after harvesting and installation before planting crop
- PC19.** carry out necessary documentation as per the organisational policy

#### *Optimise resource utilisation*

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

**PC20.** optimise the usage of water/ electricity/ relevant materials in various tasks and processes

**PC21.** connect the electrical tools and equipment safely and turn off when not in use

### **Knowledge and Understanding (KU)**

The individual on the job needs to know and understand:

**KU1.** relevant documentation requirements

**KU2.** the process for the installation of a micro-irrigation system

**KU3.** various types of fittings and equipment necessary for the installation of a micro-irrigation system such as pumps and tubes

**KU4.** use of the relevant tools and equipment

**KU5.** how to troubleshoot various issues experienced with a micro-irrigation system

**KU6.** basic hydraulics like pressure, flow etc.

**KU7.** concept of fertigation, its advantages and the process to install a fertigation system

**KU8.** the SOP for testing the functioning of a micro-irrigation system

### **Generic Skills (GS)**

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

**GS1.** prepare work-related notes and documents

**GS2.** listen attentively to understand the client requirements

**GS3.** communicate politely and professionally

**GS4.** read the relevant articles to get latest updates about the field of the work

**GS5.** take quick decision to deal with any emergencies/ accidents

**GS6.** plan and prioritise tasks to ensure timely completion

**GS7.** co-ordinate with co-workers to achieve work objectives

**GS8.** identify possible disruptions to work and take preventive measures

**GS9.** apply domain knowledge and experience to improve the quality of work

## Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Install the micro-irrigation system</i>	<b>15</b>	<b>25</b>	-	<b>15</b>
<b>PC1.</b> create holes in the water tubes as per the requirement	-	-	-	-
<b>PC2.</b> lay the water tubes in the field as per the plan	-	-	-	-
<b>PC3.</b> secure the water tubes on the ground using ground stakes/ conduit brackets	-	-	-	-
<b>PC4.</b> install emitters/ sprayers/ foggers at the identified spots	-	-	-	-
<b>PC5.</b> set up the irrigation timer	-	-	-	-
<b>PC6.</b> apply cap on the other end of the main tube	-	-	-	-
<b>PC7.</b> connect the main water tube to the water outlet at the farm	-	-	-	-
<b>PC8.</b> connect vacuum breaker with the pressure regulator to prevent backflow of water	-	-	-	-
<b>PC9.</b> install the water-pump at the main water supply	-	-	-	-
<b>PC10.</b> install water filter to prevent silt and dirt from getting in the water tubes	-	-	-	-
<b>PC11.</b> fix flush valves at the identified spots to facilitate regular flushing of any deposits in the water tubes	-	-	-	-
<b>PC12.</b> install the fertigation equipment to deliver water mixed with fertilizers to plants	-	-	-	-
<b>PC13.</b> run clean water through the tubes to remove any dirt and debris inside them	-	-	-	-
<b>PC14.</b> test the micro-irrigation system to see if it functions as expected	-	-	-	-
<b>PC15.</b> perform troubleshooting for any issues identified with the micro-irrigation system	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC16.</b> cover the water tubes with soil/ mulch as per the plan	-	-	-	-
<i>Carry out post-installation activities</i>	<b>10</b>	<b>10</b>	-	<b>10</b>
<b>PC17.</b> guide the farmer regarding the functioning, minor repair and maintenance and maintenance schedule of the micro-irrigation system	-	-	-	-
<b>PC18.</b> guide the farmer regarding the retrieval of micro-irrigation system after harvesting and installation before planting crop	-	-	-	-
<b>PC19.</b> carry out necessary documentation as per the organisational policy	-	-	-	-
<i>Optimise resource utilisation</i>	<b>5</b>	<b>5</b>	-	<b>5</b>
<b>PC20.</b> optimise the usage of water/ electricity/ relevant materials in various tasks and processes	-	-	-	-
<b>PC21.</b> connect the electrical tools and equipment safely and turn off when not in use	-	-	-	-
<b>NOS Total</b>	<b>30</b>	<b>40</b>	-	<b>30</b>

## National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	AGR/N1005
<b>NOS Name</b>	Install the micro-irrigation system
<b>Sector</b>	Agriculture
<b>Sub-Sector</b>	Agriculture Crop Production
<b>Occupation</b>	Precision Farming
<b>NSQF Level</b>	4
<b>Credits</b>	TBD
<b>Version</b>	2.0
<b>Last Reviewed Date</b>	20/04/2021
<b>Next Review Date</b>	20/04/2026
<b>NSQC Clearance Date</b>	

## **AGR/N1006: Perform repair and maintenance of the micro-irrigation system**

### **Description**

This OS unit is about performing regular repair and maintenance of a micro-irrigation system.

### **Scope**

The scope covers the following :

- Perform repair and maintenance
- Perform waste management

### **Elements and Performance Criteria**

#### *Perform repair and maintenance*

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

- PC1.** examine the emitters for the required level of pressure
- PC2.** check the fertigation system and irrigation timer for correct functioning
- PC3.** remove the flush valves and water tube cap as per the SOP
- PC4.** run clean water through the water tubes to flush any deposits inside them
- PC5.** clean the water filter to remove any blockage inside it
- PC6.** carry out chlorine/ acid treatment to remove salts such carbonates, bi-carbonates, iron, calcium, etc.
- PC7.** set the emitters/ foggers/ sprinklers in the correct position for effective supply of water to the plants
- PC8.** identify damaged or malfunctioning micro-irrigation system components such as emitter, sprayer, fogger, water filter, water-tubes, etc.
- PC9.** replace the damaged or malfunctioning components as per the SOP
- PC10.** maintain the record of maintenance
- PC11.** schedule the next maintenance as per the maintenance schedule

#### *Perform waste management*

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

- PC12.** segregate waste into different categories
- PC13.** dispose the non-recyclable waste appropriately
- PC14.** deposit the recyclable and reusable material at the identified location

### **Knowledge and Understanding (KU)**

The individual on the job needs to know and understand:

- KU1.** relevant record-keeping requirements
- KU2.** the SOP for the repair and maintenance of a micro-irrigation system
- KU3.** the process to detect faults and damages in a micro-irrigation system

- KU4.** common repair and maintenance needs of a micro-irrigation installation
- KU5.** approved cleaning material for use on a micro-irrigation system
- KU6.** correct handling of the relevant repair and maintenance tools and equipment
- KU7.** common faults with a fertigation system
- KU8.** appropriate maintenance schedule for micro-irrigation system
- KU9.** methods of recycling and disposing different types of waste
- KU10.** common sources of pollution and the ways to minimise it

### **Generic Skills (GS)**

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

- GS1.** communicate clearly and politely
- GS2.** evaluate all solutions to a problem before selecting the best one
- GS3.** identify problems that may disrupt work and take preventive action within the limits of authority
- GS4.** maintain work-related records
- GS5.** read the relevant literature to get updated information about the field of work
- GS6.** plan and schedule tasks for effective time-management
- GS7.** listen attentively to understand the information/ instructions being given

**Assessment Criteria**

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform repair and maintenance</i>	<b>20</b>	<b>25</b>	-	<b>20</b>
<b>PC1.</b> examine the emitters for the required level of pressure	-	-	-	-
<b>PC2.</b> check the fertigation system and irrigation timer for correct functioning	-	-	-	-
<b>PC3.</b> remove the flush valves and water tube cap as per the SOP	-	-	-	-
<b>PC4.</b> run clean water through the water tubes to flush any deposits inside them	-	-	-	-
<b>PC5.</b> clean the water filter to remove any blockage inside it	-	-	-	-
<b>PC6.</b> carry out chlorine/ acid treatment to remove salts such carbonates, bi-carbonates, iron, calcium, etc.	-	-	-	-
<b>PC7.</b> set the emitters/ foggers/ sprinklers in the correct position for effective supply of water to the plants	-	-	-	-
<b>PC8.</b> identify damaged or malfunctioning micro-irrigation system components such as emitter, sprayer, fogger, water filter, water-tubes, etc.	-	-	-	-
<b>PC9.</b> replace the damaged or malfunctioning components as per the SOP	-	-	-	-
<b>PC10.</b> maintain the record of maintenance	-	-	-	-
<b>PC11.</b> schedule the next maintenance as per the maintenance schedule	-	-	-	-
<i>Perform waste management</i>	<b>10</b>	<b>15</b>	-	<b>10</b>
<b>PC12.</b> segregate waste into different categories	-	-	-	-
<b>PC13.</b> dispose the non-recyclable waste appropriately	-	-	-	-
<b>PC14.</b> deposit the recyclable and reusable material at the identified location	-	-	-	-

<b>Assessment Criteria for Outcomes</b>	<b>Theory Marks</b>	<b>Practical Marks</b>	<b>Project Marks</b>	<b>Viva Marks</b>
<b>NOS Total</b>	<b>30</b>	<b>40</b>	<b>-</b>	<b>30</b>

## National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	AGR/N1006
<b>NOS Name</b>	Perform repair and maintenance of the micro-irrigation system
<b>Sector</b>	Agriculture
<b>Sub-Sector</b>	Agriculture Crop Production
<b>Occupation</b>	Precision Farming
<b>NSQF Level</b>	4
<b>Credits</b>	TBD
<b>Version</b>	2.0
<b>Last Reviewed Date</b>	20/04/2021
<b>Next Review Date</b>	20/04/2026
<b>NSQC Clearance Date</b>	

## **AGR/N9918: Communicate effectively at the workplace**

### **Description**

This OS is about communicating effectively with stakeholders at the workplace.

### **Scope**

The scope covers the following :

- Effective communication at the workplace
- Mentor apprentice
- Promote inclusion at the workplace

### **Elements and Performance Criteria**

#### *Effective communication at the workplace*

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

- PC1.** interpret verbal and written instructions
- PC2.** note down instructions received from the seniors
- PC3.** seek clarifications on instructions, if any
- PC4.** seek requisite information from a source or person
- PC5.** provide information in the desired format and frequency
- PC6.** carry out work-related documentation
- PC7.** report accidents and incidents as per procedure

#### *Mentor apprentice*

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

- PC8.** explain scope of work to the apprentice
- PC9.** demonstrate the work to the apprentice
- PC10.** assign work to the apprentice
- PC11.** monitor progress made by the apprentice
- PC12.** report performance of the apprentice to the senior
- PC13.** explain safety procedure and use of PPE to the apprentice

#### *Practice inclusion at the workplace*

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

- PC14.** maintain a conducive environment for all the genders at the workplace
- PC15.** encourage appropriate behavior and conduct with people across gender
- PC16.** practice appropriate verbal and non-verbal communication while interacting with Persons with Disabilities (PwD)
- PC17.** ensure equal participation of the people across genders in discussions

### **Knowledge and Understanding (KU)**

The individual on the job needs to know and understand:

- KU1.** applicable legislation, standards, policies and procedures for work
- KU2.** applicable health and safety requirements
- KU3.** own job role & responsibilities pertaining to work
- KU4.** procedure for seeking guidance and work-related information and clarification
- KU5.** work-related documentation and procedures
- KU6.** available means of communication at the workplace
- KU7.** importance of information sharing
- KU8.** methods of information storage
- KU9.** mode of training of apprentice
- KU10.** gender concepts, issues and legislations
- KU11.** actions and consequences of gendered behavior
- KU12.** need for gender sensitization
- KU13.** different types of disabilities
- KU14.** PwD related Laws/Schemes/Acts/Provisions
- KU15.** challenges faced by PwD and the ways to help them overcome the same
- KU16.** importance of displaying empathy towards PwD
- KU17.** inclusive practices at the workplace

### **Generic Skills (GS)**

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

- GS1.** write plan of work
- GS2.** write incident report
- GS3.** read instructions received from the seniors
- GS4.** read workplace procedures and equipment manuals
- GS5.** read and follow health and safety instructions
- GS6.** communicate clearly and effectively with the stakeholders
- GS7.** explain plan of work to co-workers, juniors and apprentice
- GS8.** make decisions pertaining to the concerned area of work
- GS9.** take preventative action against the problems that may arise during task implementation
- GS10.** take decision in the best interest of the organization
- GS11.** plan and organize tasks with the help of a co-worker or an apprentice
- GS12.** maintain effective working relationships with stakeholders
- GS13.** think through the problem, evaluate the possible solution(s) and adopt an optimum /best possible solution(s)
- GS14.** report to the senior
- GS15.** analyze, evaluate and apply the information gathered from observation, experience, reasoning or communication, as a guide to thought and action

**Assessment Criteria**

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Effective communication at the workplace</i>	<b>22</b>	<b>20</b>	-	<b>13</b>
<b>PC1.</b> interpret verbal and written instructions	-	-	-	-
<b>PC2.</b> note down instructions received from the seniors	-	-	-	-
<b>PC3.</b> seek clarifications on instructions, if any	-	-	-	-
<b>PC4.</b> seek requisite information from a source or person	-	-	-	-
<b>PC5.</b> provide information in the desired format and frequency	-	-	-	-
<b>PC6.</b> carry out work-related documentation	-	-	-	-
<b>PC7.</b> report accidents and incidents as per procedure	-	-	-	-
<i>Mentor apprentice</i>	<b>24</b>	<b>16</b>	-	<b>20</b>
<b>PC8.</b> explain scope of work to the apprentice	-	-	-	-
<b>PC9.</b> demonstrate the work to the apprentice	-	-	-	-
<b>PC10.</b> assign work to the apprentice	-	-	-	-
<b>PC11.</b> monitor progress made by the apprentice	-	-	-	-
<b>PC12.</b> report performance of the apprentice to the senior	-	-	-	-
<b>PC13.</b> explain safety procedure and use of PPE to the apprentice	-	-	-	-
<i>Practice inclusion at the workplace</i>	<b>14</b>	<b>10</b>	-	<b>11</b>
<b>PC14.</b> maintain a conducive environment for all the genders at the workplace	-	-	-	-
<b>PC15.</b> encourage appropriate behavior and conduct with people across gender	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC16.</b> practice appropriate verbal and non-verbal communication while interacting with Persons with Disabilities (PwD)	-	-	-	-
<b>PC17.</b> ensure equal participation of the people across genders in discussions	-	-	-	-
<b>NOS Total</b>	<b>60</b>	<b>46</b>	<b>-</b>	<b>44</b>

## National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	AGR/N9918
<b>NOS Name</b>	Communicate effectively at the workplace
<b>Sector</b>	Agriculture
<b>Sub-Sector</b>	Generic
<b>Occupation</b>	Generic
<b>NSQF Level</b>	4
<b>Credits</b>	TBD
<b>Version</b>	2.0
<b>Last Reviewed Date</b>	14/04/2020
<b>Next Review Date</b>	20/11/2025
<b>NSQF Clearance Date</b>	20/11/2020

## **AGR/N9903: Maintain health and safety at the workplace**

### **Description**

This OS is about maintaining health and safety of self and other co-workers at the workplace

### **Scope**

The scope covers the following :

- Maintain personal hygiene
- Maintain clean and safe workplace
- Administer appropriate emergency procedures

### **Elements and Performance Criteria**

#### *Maintain personal hygiene*

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

- PC1.** wash hands, legs and face with soap/alcohol based sanitizer at reasonable intervals
- PC2.** wash the worn clothes with soap and sun dry before use next time
- PC3.** ensure the face is covered with mask or three layers of cloth-piece
- PC4.** follow the workplace sanitization norms including distancing from sick people

#### *Maintain clean and safe workplace*

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

- PC5.** carry out basic safety checks before operation of all tools, implements, and machinery and report identified hazards to the supervisor
- PC6.** wear appropriate Personal Protective Equipment (PPE) while performing work in accordance with the workplace policy
- PC7.** follow the instructions mentioned on the labels of chemicals/pesticides/fumigants etc to avoid hazards
- PC8.** assess risks prior to performing manual handling jobs, and work according to currently recommended safe practices
- PC9.** sanitize equipment, tools and machinery before and after use
- PC10.** use equipment and materials safely and correctly and return the same to designated storage after use
- PC11.** dispose waste safely and correctly in the designated area
- PC12.** recognize risks to bystanders and take required action to reduce the risks
- PC13.** work in a manner which minimizes environmental damage, ensuring all procedures and instructions for controlling risks are followed
- PC14.** report any accidents, incidents or problems without delay to an appropriate person and take necessary immediate action to reduce further danger
- PC15.** follow government / workplace advisories incase of outbreak of any disease/disaster

#### *Administer appropriate emergency procedures*

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

- PC16.** follow procedures for dealing with accidents, fires and emergencies, including communicating location and directions to the location of emergency, as per the workplace requirements
- PC17.** use emergency equipment in accordance with manufacturer's specifications and workplace requirements
- PC18.** provide treatment appropriate to the patient's injuries in accordance with recognized first aid techniques
- PC19.** recover (if practical), clean, inspect/test, refurbish, replace and store the first aid equipment as appropriate
- PC20.** report details of first aid administered in accordance with workplace procedures

### **Knowledge and Understanding (KU)**

The individual on the job needs to know and understand:

- KU1.** relevant legislation, standards, policies, and procedures at work
- KU2.** relevant health and safety requirements applicable to the work environment
- KU3.** own job role and responsibilities and sources of information pertaining to work
- KU4.** who to approach for support in order to obtain work related information, clarifications and support
- KU5.** importance of following health, hygiene, safety and quality standards and the impact of not following the standards on consumers and the business
- KU6.** personal hygiene and fitness requirement
- KU7.** importance of sanitization of the workplace
- KU8.** types of Personal Protective Equipment (PPE) required at the workplace and their importance
- KU9.** the correct and safe way to use materials and equipment required for the work
- KU10.** the importance of good housekeeping at the workplace
- KU11.** safe waste disposal methods
- KU12.** methods for minimizing environmental damage during work
- KU13.** the risks to health and safety including contagious diseases and the measures to be taken to control those risks in the area of work
- KU14.** workplace procedures and requirements for the prevention and treatment of workplace injuries/illnesses.
- KU15.** basic emergency first aid procedure
- KU16.** local emergency services
- KU17.** why accidents, incidents and problems should be reported and the appropriate actions to be taken

### **Generic Skills (GS)**

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

- GS1.** record the data as per the requirement
- GS2.** report problems to the appropriate personnel in a timely manner
- GS3.** read instruction manual for hand tool and equipments

- GS4.** communicate clearly and effectively with co-workers, and other stakeholders
- GS5.** comprehend information shared by senior people and experts
- GS6.** make decisions pertaining to personal hygiene and safety
- GS7.** schedule daily activities and draw up priorities
- GS8.** manage relationships with co-workers, manager and other stakeholders
- GS9.** assess situation and identify appropriate control measures

## Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Maintain personal hygiene</i>	<b>10</b>	<b>5</b>	-	<b>10</b>
<b>PC1.</b> wash hands, legs and face with soap/alcohol based sanitizer at reasonable intervals	-	-	-	-
<b>PC2.</b> wash the worn clothes with soap and sun dry before use next time	-	-	-	-
<b>PC3.</b> ensure the face is covered with mask or three layers of cloth-piece	-	-	-	-
<b>PC4.</b> follow the workplace sanitization norms including distancing from sick people	-	-	-	-
<i>Maintain clean and safe workplace</i>	<b>15</b>	<b>15</b>	-	<b>15</b>
<b>PC5.</b> carry out basic safety checks before operation of all tools, implements, and machinery and report identified hazards to the supervisor	-	-	-	-
<b>PC6.</b> wear appropriate Personal Protective Equipment (PPE) while performing work in accordance with the workplace policy	-	-	-	-
<b>PC7.</b> follow the instructions mentioned on the labels of chemicals/pesticides/fumigants etc to avoid hazards	-	-	-	-
<b>PC8.</b> assess risks prior to performing manual handling jobs, and work according to currently recommended safe practices	-	-	-	-
<b>PC9.</b> sanitize equipment, tools and machinery before and after use	-	-	-	-
<b>PC10.</b> use equipment and materials safely and correctly and return the same to designated storage after use	-	-	-	-
<b>PC11.</b> dispose waste safely and correctly in the designated area	-	-	-	-
<b>PC12.</b> recognize risks to bystanders and take required action to reduce the risks	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC13.</b> work in a manner which minimizes environmental damage, ensuring all procedures and instructions for controlling risks are followed	-	-	-	-
<b>PC14.</b> report any accidents, incidents or problems without delay to an appropriate person and take necessary immediate action to reduce further danger	-	-	-	-
<b>PC15.</b> follow government / workplace advisories incase of outbreak of any disease/disaster	-	-	-	-
<i>Administer appropriate emergency procedures</i>	<b>15</b>	<b>5</b>	-	<b>10</b>
<b>PC16.</b> follow procedures for dealing with accidents, fires and emergencies, including communicating location and directions to the location of emergency, as per the workplace requirements	-	-	-	-
<b>PC17.</b> use emergency equipment in accordance with manufacturer's specifications and workplace requirements	-	-	-	-
<b>PC18.</b> provide treatment appropriate to the patient's injuries in accordance with recognized first aid techniques	-	-	-	-
<b>PC19.</b> recover (if practical), clean, inspect/test, refurbish, replace and store the first aid equipment as appropriate	-	-	-	-
<b>PC20.</b> report details of first aid administered in accordance with workplace procedures	-	-	-	-
<b>NOS Total</b>	<b>40</b>	<b>25</b>	-	<b>35</b>

## National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	AGR/N9903
<b>NOS Name</b>	Maintain health and safety at the workplace
<b>Sector</b>	Agriculture
<b>Sub-Sector</b>	Generic
<b>Occupation</b>	Generic
<b>NSQF Level</b>	4
<b>Credits</b>	TBD
<b>Version</b>	3.0
<b>Last Reviewed Date</b>	19/11/2020
<b>Next Review Date</b>	19/11/2025
<b>NSQC Clearance Date</b>	

## 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) (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 these criteria.
5. In case of successfully passing only certain number of NOSs, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack.
6. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

### Minimum Aggregate Passing % at QP Level : 70

**(Please note:** Every Trainee should score a minimum aggregate passing percentage as specified above, to

successfully clear the Qualification Pack assessment.)

## Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
AGR/N1004.Prepare to setup the micro-irrigation system	30	40	0	30	100	25
AGR/N1005.Install the micro-irrigation system	30	40	0	30	100	25
AGR/N1006.Perform repair and maintenance of the micro-irrigation system	30	40	-	30	100	30
AGR/N9918.Communicate effectively at the workplace	60	46	-	44	150	5
AGR/N9903.Maintain health and safety at the workplace	40	25	-	35	100	15
<b>Total</b>	<b>190</b>	<b>191</b>	<b>-</b>	<b>169</b>	<b>550</b>	<b>100</b>

## Acronyms

<b>NOS</b>	National Occupational Standard(s)
<b>NSQF</b>	National Skills Qualifications Framework
<b>QP</b>	Qualifications Pack
<b>TVET</b>	Technical and Vocational Education and Training
<b>PwD</b>	Persons with Disabilities
<b>PPE</b>	Personal Protective Equipment
<b>PPE</b>	Personal Protective Equipment

## Glossary

<b>Sector</b>	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.
<b>Sub-sector</b>	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
<b>Occupation</b>	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
<b>Job role</b>	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
<b>Occupational Standards (OS)</b>	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.
<b>Performance Criteria (PC)</b>	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
<b>National Occupational Standards (NOS)</b>	NOS are occupational standards which apply uniquely in the Indian context.
<b>Qualifications Pack (QP)</b>	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.
<b>Unit Code</b>	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
<b>Unit Title</b>	Unit title gives a clear overall statement about what the incumbent should be able to do.
<b>Description</b>	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.
<b>Scope</b>	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.
<b>Knowledge and Understanding (KU)</b>	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.

<b>Organisational Context</b>	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.
<b>Technical Knowledge</b>	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
<b>Core Skills/ Generic Skills (GS)</b>	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.
<b>Electives</b>	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.
<b>Options</b>	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.