

Qualification Pack



Solar Pump Technician

QP Code: AGR/Q6701

Version: 3.0

NSQF Level: 4

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AGR/Q6701: Solar Pump Technician

Brief Job Description

A Solar Pump Technician performs various activities such as conducting site assessment and installing solar panel, battery, pump and plumbing system. The individual also carries out service and maintenance of the solar pump..

Personal Attributes

The individual must be able to think rationally and act independently to find appropriate solutions. The person must be physically fit and have stamina to work for long durations. Ability to solve problems and co-ordinate with others are other important attributes required in this role.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [AGR/N6701: Conduct site assessment and plan the solar pump installation](#)
2. [AGR/N6702: Install solar panel and battery](#)
3. [AGR/N6703: Install plumbing system and pump](#)
4. [AGR/N6705: Carry out maintenance and repair of solar pump](#)
5. [ELE/N9953: Ensure safety at workplace](#)
6. [DGT/VSQ/N0102: Employability Skills \(60 Hours\)](#)

Qualification Pack (QP) Parameters

Sector	Agriculture
Sub-Sector	Forestry, Environment and Renewable Energy Management
Occupation	Renewable Energy Management
Country	India
NSQF Level	4
Credits	13

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Aligned to NCO/ISCO/ISIC Code	NCO-2015/3142
Minimum Educational Qualification & Experience	11th Class (Pass) OR 10th Class (Pass) with 2 Years of experience relevant experience OR 10th Class (Pass and pursuing continuous regular schooling) OR 8th Class with 4 Years of experience relevant experience OR Certificate-NSQF (Level-3 with minimum education as 5th grade pass) with 2 Years of experience relevant experience
Minimum Level of Education for Training in School	10th Class
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	NA
Next Review Date	30/12/2024
NSQC Approval Date	30/12/2021
Version	3.0
Reference code on NQR	2022/AGR/ASCI/06539
NQR Version	1.0

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AGR/N6701: Conduct site assessment and plan the solar pump installation

Description

This OS unit is about conducting a site visit to determine the site conditions and client requirements for the purpose of installing the solar pump.

Scope

The scope covers the following :

- Plan and conduct the site-visit
- Assess the site conditions and client requirements
- Plan the installation
- Arrange the resources required for the installation

Elements and Performance Criteria

Plan and conduct the site-visit

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

- PC1.** co-ordinate with the relevant personnel to get the client's address, contact details and any other relevant information prior to the site-visit
- PC2.** plan the site visit in a way to accommodate other daily assignments
- PC3.** follow the business code of conduct during the site visit and in dealing with the customer

Assess the site conditions and client requirements

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

- PC4.** conduct a site survey to check soil type, land surface and exposure to sunlight
- PC5.** select a spot near the water source, with good sunlight exposure and suitable for the underground battery compartment
- PC6.** evaluate the client's requirements and preferences

Plan the installation

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

- PC7.** select the appropriate mounting structure, foundation design and mounting accessories
- PC8.** explain any construction requirements to the client before solar pump installation
- PC9.** prepare a plan for the installation and share the cost estimates with the client

Arrange the resources required for the installation

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

- PC10.** arrange the necessary funds for procuring material for installation
- PC11.** identify vendors who sell the required material
- PC12.** procure material for the installation of solar pump
- PC13.** arrange for safe handling and storage of the procured material

Knowledge and Understanding (KU)

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The individual on the job needs to know and understand:

- KU1.** the business code of conduct to be followed during the site-visit and in client dealing
- KU2.** the importance of ascertaining the work requirements prior to visiting the client
- KU3.** various parameters to assess an ideal spot for the installation of a solar pump
- KU4.** appropriate mounting structure, foundation design and mounting accessories for a solar pump
- KU5.** planning and cost estimation for solar pump installation
- KU6.** various resources required for the installation of a solar pump along with their safe handling and storage

Generic Skills (GS)

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

- GS1.** read the relevant literature to get updated information about the field of work
- GS2.** write work-related notes
- GS3.** communicate politely and professionally
- GS4.** take quick decisions to deal with workplace emergencies/ accidents
- GS5.** identify likely problems in the work processes and take appropriate preventive action
- GS6.** listen attentively to understand the information/ instructions being given
- GS7.** evaluate all possible solutions to a problem to select the best one
- GS8.** identify areas of customer dissatisfaction and take appropriate action to enhance customer satisfaction
- GS9.** co-ordinate with the co-workers to achieve the work objectives

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Plan and conduct the site-visit</i>	7	10	-	10
PC1. co-ordinate with the relevant personnel to get the client's address, contact details and any other relevant information prior to the site-visit	-	-	-	-
PC2. plan the site visit in a way to accommodate other daily assignments	-	-	-	-
PC3. follow the business code of conduct during the site visit and in dealing with the customer	-	-	-	-
<i>Assess the site conditions and client requirements</i>	8	10	-	10
PC4. conduct a site survey to check soil type, land surface and exposure to sunlight	-	-	-	-
PC5. select a spot near the water source, with good sunlight exposure and suitable for the underground battery compartment	-	-	-	-
PC6. evaluate the client's requirements and preferences	-	-	-	-
<i>Plan the installation</i>	5	5	-	5
PC7. select the appropriate mounting structure, foundation design and mounting accessories	-	-	-	-
PC8. explain any construction requirements to the client before solar pump installation	-	-	-	-
PC9. prepare a plan for the installation and share the cost estimates with the client	-	-	-	-
<i>Arrange the resources required for the installation</i>	10	15	-	5
PC10. arrange the necessary funds for procuring material for installation	-	-	-	-
PC11. identify vendors who sell the required material	-	-	-	-
PC12. procure material for the installation of solar pump	-	-	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. arrange for safe handling and storage of the procured material	-	-	-	-
NOS Total	30	40	-	30

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National Occupational Standards (NOS) Parameters

NOS Code	AGR/N6701
NOS Name	Conduct site assessment and plan the solar pump installation
Sector	Agriculture
Sub-Sector	Forestry, Environment and Renewable Energy Management
Occupation	Renewable Energy Management
NSQF Level	4
Credits	2
Version	3.0
Last Reviewed Date	NA
Next Review Date	30/12/2024
NSQC Clearance Date	30/12/2021

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AGR/N6702: Install solar panel and battery

Description

This OS unit is about performing various activities during the installation of a solar pump

Scope

The scope covers the following :

- Prepare for the installation
- Carry out the installation
- Complete after-installation formalities

Elements and Performance Criteria

Prepare for the installation

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

- PC1.** prepare the required installation material, accessories, tools, equipment and Personal Protective Equipment (PPE) for the installation
- PC2.** test the Photo-Voltaic (PV) module for any defects and live current before installation

Carry out the installation

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

- PC3.** assess the degree of inclination and angle of tilt of PV module
- PC4.** select a mounting place/pole that is strong enough to withstand different weather conditions
- PC5.** carry out mounting of PV in a manner that it is able to absorb maximum solar power
- PC6.** apply cover on the module and junction box during installation
- PC7.** install solar cable, plugs and spare fuse and the solar panels firmly
- PC8.** place battery inside the battery compartment safely
- PC9.** connect the system to battery using the recommended grade of cables
- PC10.** check the battery for charging
- PC11.** test the system voltage
- PC12.** apply the necessary adjustments to match output requirement
- PC13.** conduct a test to ensure the solar pump is functioning as expected

Complete after-installation formalities

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

- PC14.** remove any waste material from the installation site after completing installation
- PC15.** brief the client on the basic cleaning and maintenance of solar panels
- PC16.** complete the necessary documentation as per the (SOP)

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

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- KU1.** applicable documentation requirements
- KU2.** use of the relevant PPE
- KU3.** various material and accessories required for the installation of a solar pump
- KU4.** correct use of the relevant tools and equipment such as screwdriver, inspection fixtures, wire cutter, pliers, tester, spanner, voltmeter, ammeter, watermeter, compass, etc.
- KU5.** testing of the Photo-Voltaic (PV) module for any defects and live current before installation
- KU6.** how to assess the degree of inclination and angle of tilt of the PV module
- KU7.** correct mounting of PV to allow it absorb maximum solar power
- KU8.** the process of installation of solar cable, plugs, spare fuse, solar panels and battery
- KU9.** testing of battery and system voltage
- KU10.** the importance of leaving a clean site after completing the solar pump installation

Generic Skills (GS)

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

- GS1.** write work-related notes and prepare relevant documents
- GS2.** read relevant guides and policy documents
- GS3.** plan and schedule daily tasks to achieve work-efficiency
- GS4.** listen attentively to understand the information/ instructions being given
- GS5.** communicate politely and professionally
- GS6.** take quick decisions to deal with workplace emergencies/ accidents
- GS7.** detect process disruptions and delays and take preventive measures

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Prepare for the installation</i>	8	10	-	10
PC1. prepare the required installation material, accessories, tools, equipment and Personal Protective Equipment (PPE) for the installation	-	-	-	-
PC2. test the Photo-Voltaic (PV) module for any defects and live current before installation	-	-	-	-
<i>Carry out the installation</i>	15	20	-	10
PC3. assess the degree of inclination and angle of tilt of PV module	-	-	-	-
PC4. select a mounting place/pole that is strong enough to withstand different weather conditions	-	-	-	-
PC5. carry out mounting of PV in a manner that it is able to absorb maximum solar power	-	-	-	-
PC6. apply cover on the module and junction box during installation	-	-	-	-
PC7. install solar cable, plugs and spare fuse and the solar panels firmly	-	-	-	-
PC8. place battery inside the battery compartment safely	-	-	-	-
PC9. connect the system to battery using the recommended grade of cables	-	-	-	-
PC10. check the battery for charging	-	-	-	-
PC11. test the system voltage	-	-	-	-
PC12. apply the necessary adjustments to match output requirement	-	-	-	-
PC13. conduct a test to ensure the solar pump is functioning as expected	-	-	-	-
<i>Complete after-installation formalities</i>	7	10	-	10

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. remove any waste material from the installation site after completing installation	-	-	-	-
PC15. brief the client on the basic cleaning and maintenance of solar panels	-	-	-	-
PC16. complete the necessary documentation as per the (SOP)	-	-	-	-
NOS Total	30	40	-	30

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National Occupational Standards (NOS) Parameters

NOS Code	AGR/N6702
NOS Name	Install solar panel and battery
Sector	Agriculture
Sub-Sector	Forestry, Environment and Renewable Energy Management
Occupation	Renewable Energy Management
NSQF Level	4
Credits	3
Version	3.0
Last Reviewed Date	NA
Next Review Date	30/12/2024
NSQC Clearance Date	30/12/2021

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AGR/N6703: Install plumbing system and pump

Description

This OS unit is about installation of plumbing system and pump.

Scope

The scope covers the following :

- Install the pipes
- Install the pump
- Guide the farmers
- Optimise resource utilisation
- Perform waste management

Elements and Performance Criteria

Install the pipes

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

- PC1.** assemble pipe sections, fittings and tubing
- PC2.** cut, thread and join pipes as per SOP
- PC3.** create openings in the pipes as per the requirement
- PC4.** install plumbing fittings and fixtures such as valves, clamps, elbows, sprinklers, taps, etc.
- PC5.** use the relevant power and hand tools during the installation

Install the pump

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

- PC6.** connect the pump to the battery or inverter according to the type of pump
- PC7.** connect pipes to the pump from the source to the destination of supply
- PC8.** adjust the discharge of water as per the requirement

Guide the farmers

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

- PC9.** guide the farmers on ways to deal with common hazards associated with the use of solar pump and panels
- PC10.** conduct session with the farmers to guide them on minor repair and maintenance of the solar pump and panels

Optimise resource utilisation

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

- PC11.** plug water leakages to prevent its wastage
- PC12.** optimise the usage of water, electricity and relevant materials in various tasks and processes
- PC13.** connect the electrical equipment safely and turn them off when not in use

Perform waste management

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

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- PC14.** segregate waste into different categories
- PC15.** dispose the non-recyclable waste appropriately
- PC16.** deposit the recyclable and reusable materials at the identified location

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** pipe sections, fittings and tubings required for installing a plumbing system
- KU2.** installation of plumbing fittings and fixtures such as valves, clamps, elbows, sprinklers, taps, etc.
- KU3.** different methods of cutting, bending and joining fittings and fixtures
- KU4.** relevant hand and power tools such as wrenches, pliers, screwdriver, power drill, pipe cutter,
- KU5.** how to connect the pump to the battery or inverter according to the type of pump
- KU6.** the process of connecting pipes with the pump from the source to the destination of supply
- KU7.** how to adjust the discharge of water
- KU8.** the importance of following environmental and ecological best practices to minimise the impact on the environment
- KU9.** how to guide farmers regarding the hazards associated with the use of solar pumps and panels
- KU10.** along with their minor repair and maintenance
- KU11.** benefits of resource optimisation
- KU12.** ways of efficiently managing material and water in the process
- KU13.** basics of electricity and prevalent energy efficient devices
- KU14.** ways to recognize common electrical problems
- KU15.** common practices of conserving electricity
- KU16.** different methods of recycling and disposing different types of waste
- KU17.** common sources of pollution and ways to minimise it

Generic Skills (GS)

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

- GS1.** write work-related notes
- GS2.** communicate politely and professionally
- GS3.** read the relevant literature to learn about new latest developments in the field of work
- GS4.** listen attentively to understand the information/ instructions being shared by the speaker
- GS5.** plan and prioritise tasks to ensure timely completion
- GS6.** co-ordinate with co-workers to achieve work objectives
- GS7.** evaluate all possible solutions to a problem to select the best one
- GS8.** identify possible disruptions to work and take appropriate preventive measures
- GS9.** take quick decisions to deal with workplace emergencies/ accidents

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Install the pipes</i>	8	10	-	8
PC1. assemble pipe sections, fittings and tubing	-	-	-	-
PC2. cut, thread and join pipes as per SOP	-	-	-	-
PC3. create openings in the pipes as per the requirement	-	-	-	-
PC4. install plumbing fittings and fixtures such as valves, clamps, elbows, sprinklers, taps, etc.	-	-	-	-
PC5. use the relevant power and hand tools during the installation	-	-	-	-
<i>Install the pump</i>	10	10	-	10
PC6. connect the pump to the battery or inverter according to the type of pump	-	-	-	-
PC7. connect pipes to the pump from the source to the destination of supply	-	-	-	-
PC8. adjust the discharge of water as per the requirement	-	-	-	-
<i>Guide the farmers</i>	2	5	-	2
PC9. guide the farmers on ways to deal with common hazards associated with the use of solar pump and panels	-	-	-	-
PC10. conduct session with the farmers to guide them on minor repair and maintenance of the solar pump and panels	-	-	-	-
<i>Optimise resource utilisation</i>	5	10	-	5
PC11. plug water leakages to prevent its wastage	-	-	-	-
PC12. optimise the usage of water, electricity and relevant materials in various tasks and processes	-	-	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. connect the electrical equipment safely and turn them off when not in use	-	-	-	-
<i>Perform waste management</i>	5	5	-	5
PC14. segregate waste into different categories	-	-	-	-
PC15. dispose the non-recyclable waste appropriately	-	-	-	-
PC16. deposit the recyclable and reusable materials at the identified location	-	-	-	-
NOS Total	30	40	-	30

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National Occupational Standards (NOS) Parameters

NOS Code	AGR/N6703
NOS Name	Install plumbing system and pump
Sector	Agriculture
Sub-Sector	Forestry, Environment and Renewable Energy Management
Occupation	Renewable Energy Management
NSQF Level	4
Credits	3
Version	3.0
Last Reviewed Date	NA
Next Review Date	30/12/2024
NSQC Clearance Date	30/12/2021

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AGR/N6705: Carry out maintenance and repair of solar pump

Description

This OS unit is about carrying out maintenance and repair services for a solar pump installation.

Scope

The scope covers the following :

- Carry out maintenance and repair
- Maintain records and schedule the maintenance

Elements and Performance Criteria

Carry out maintenance and repair

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

- PC1.** inspect the installation visually and using diagnostic tools
- PC2.** identify any malfunctions and repair requirements basis the diagnosis
- PC3.** clean the relevant components of the solar pump
- PC4.** check the electrical joints and pipes for any loose connections
- PC5.** examine the insulations of wires for any short circuits
- PC6.** check the plumbing system for any blockages, water level and pump issues
- PC7.** ensure the voltage being generated is correct as per the installation requirements
- PC8.** replace any faulty components as per the Standard Operating Procedure (SOP)
- PC9.** integrate all the components as per the original design after maintenance

Maintain records and schedule the maintenance

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

- PC10.** maintain the record of maintenance and repair services carried out
- PC11.** schedule the next maintenance as per the maintenance schedule

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** applicable record-keeping requirements
- KU2.** inspection of a solar pump installation
- KU3.** use of relevant diagnostic/ maintenance/ repair tools and equipment
- KU4.** safe method of cleaning various components of a solar pump
- KU5.** the process of examining the insulation of wires to prevent any short circuits and electricity hazards
- KU6.** common faults with the plumbing system such as blockages and pump-related issues and how to fix them

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- KU7.** how to test the voltage being generated by the solar pump
- KU8.** approved spare parts to be used with a solar pump
- KU9.** recommended maintenance schedule for a solar pump

Generic Skills (GS)

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

- GS1.** maintain work-related records
- GS2.** read and follow the health and safety instructions
- GS3.** listen attentively to understand the information/ instructions being shared by the speaker
- GS4.** communicate clearly and politely with co-workers and clients
- GS5.** plan and prioritise tasks to ensure timely completion
- GS6.** identify possible disruptions to work and take appropriate preventive measures
- GS7.** take quick decisions to deal with workplace emergencies/ accidents
- GS8.** evaluate all possible solutions to a problem to select the best one
- GS9.** co-ordinate with the co-workers to achieve the work objectives

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Carry out maintenance and repair</i>	20	25	-	20
PC1. inspect the installation visually and using diagnostic tools	-	-	-	-
PC2. identify any malfunctions and repair requirements basis the diagnosis	-	-	-	-
PC3. clean the relevant components of the solar pump	-	-	-	-
PC4. check the electrical joints and pipes for any loose connections	-	-	-	-
PC5. examine the insulations of wires for any short circuits	-	-	-	-
PC6. check the plumbing system for any blockages, water level and pump issues	-	-	-	-
PC7. ensure the voltage being generated is correct as per the installation requirements	-	-	-	-
PC8. replace any faulty components as per the Standard Operating Procedure (SOP)	-	-	-	-
PC9. integrate all the components as per the original design after maintenance	-	-	-	-
<i>Maintain records and schedule the maintenance</i>	10	15	-	10
PC10. maintain the record of maintenance and repair services carried out	-	-	-	-
PC11. schedule the next maintenance as per the maintenance schedule	-	-	-	-
NOS Total	30	40	-	30

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National Occupational Standards (NOS) Parameters

NOS Code	AGR/N6705
NOS Name	Carry out maintenance and repair of solar pump
Sector	Agriculture
Sub-Sector	Forestry, Environment and Renewable Energy Management
Occupation	Renewable Energy Management
NSQF Level	4
Credits	2
Version	3.0
Last Reviewed Date	NA
Next Review Date	30/12/2024
NSQC Clearance Date	30/12/2021

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ELE/N9953: Ensure safety at workplace

Description

This OS unit is about maintaining safety in the workplace and avoid any work related hazards.

Elements and Performance Criteria

Following safety measures

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

- PC1.** comply with safety procedures followed in the company
- PC2.** take adequate safety measures while handling hazardous materials or tools
- PC3.** take necessary measures while handling electrical equipment
- PC4.** escalate matters about hazardous materials or things found in the premises
- PC5.** follow appropriate material handling procedures to avoid any damages and injuries
- PC6.** use safety materials such as gloves, goggles, masks, helmets, etc.
- PC7.** adequate safety measures while on work to prevent accidents
- PC8.** ensure zero accidents in work
- PC9.** avoid damage of components due to negligence in ESD procedures
- PC10.** ensure no loss for company due to safety negligence

Participating in drills and workshops

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

- PC11.** participate in regular safety drills for being prepared in the event of a fire or natural calamity
- PC12.** help others during the drill or calamity
- PC13.** administer basic first aid
- PC14.** participate in company organised games and fitness sessions such as yoga, etc.
- PC15.** develop good posture for working so that long term health problems do not arise

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** companys policies on: incentives, delivery standards, and personnel management
- KU2.** company occupational safety and health policy followed
- KU3.** company emergency evacuation procedure
- KU4.** companys medical policy
- KU5.** how to maintain the work area safe and secure
- KU6.** how to handle hazardous material
- KU7.** how to operate hazardous tools and equipment
- KU8.** emergency procedures to be followed such as fire accidents, etc.

Generic Skills (GS)

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

- GS1.** the purpose of using safety materials such as gloves, etc.
- GS2.** how to use safety equipment such as fire extinguisher during fire accidents

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Following safety measures</i>	20	30	-	-
PC1. comply with safety procedures followed in the company	2	3	-	-
PC2. take adequate safety measures while handling hazardous materials or tools	2	3	-	-
PC3. take necessary measures while handling electrical equipment	2	3	-	-
PC4. escalate matters about hazardous materials or things found in the premises	2	3	-	-
PC5. follow appropriate material handling procedures to avoid any damages and injuries	2	3	-	-
PC6. use safety materials such as gloves, goggles, masks, helmets, etc.	2	3	-	-
PC7. adequate safety measures while on work to prevent accidents	2	3	-	-
PC8. ensure zero accidents in work	2	3	-	-
PC9. avoid damage of components due to negligence in ESD procedures	2	3	-	-
PC10. ensure no loss for company due to safety negligence	2	3	-	-
<i>Participating in drills and workshops</i>	20	30	-	-
PC11. participate in regular safety drills for being prepared in the event of a fire or natural calamity	4	6	-	-
PC12. help others during the drill or calamity	4	6	-	-
PC13. administer basic first aid	4	6	-	-
PC14. participate in company organised games and fitness sessions such as yoga, etc.	4	6	-	-
PC15. develop good posture for working so that long term health problems do not arise	4	6	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
NOS Total	40	60	-	-

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National Occupational Standards (NOS) Parameters

NOS Code	ELE/N9953
NOS Name	Ensure safety at workplace
Sector	Electronics
Sub-Sector	Generic
Occupation	Generic
NSQF Level	4
Credits	1
Version	1.0
Last Reviewed Date	30/12/2021
Next Review Date	30/12/2024
NSQC Clearance Date	30/12/2021

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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

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- 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	-	-

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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	NA
Next Review Date	28/02/2026
NSQC Clearance Date	28/02/2023

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

Qualification Pack

(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/N6701. Conduct site assessment and plan the solar pump installation	30	40	-	30	100	25
AGR/N6702. Install solar panel and battery	30	40	-	30	100	25
AGR/N6703. Install plumbing system and pump	30	40	-	30	100	25
AGR/N6705. Carry out maintenance and repair of solar pump	30	40	-	30	100	15
ELE/N9953. Ensure safety at workplace	40	60	-	-	100	5
DGT/VSQ/N0102. Employability Skills (60 Hours)	20	30	0	0	50	5
Total	180	250	0	0	550	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.