



Model Curriculum

QP Name: Micro-Irrigation Technician

QP Code: AGR/Q1002

Version: 3.0

NSQF Level: 4

Model Curriculum Version: 2.0

Agriculture Skill Council of India || Agriculture Skill Council of India (ASCI), 6th Floor, GNG Tower, Plot No. 10, Sector - 44

Table of Contents

| | |
|--|----|
| Training Parameters..... | 3 |
| Program Overview | 4 |
| Training Outcomes..... | 4 |
| Compulsory Modules..... | 4 |
| Module 1: Introduction to the role of a Micro-Irrigation Technician..... | 6 |
| Module 2: Preparation for setting up the micro-irrigation system | 7 |
| Module 3: Installation of the micro-irrigation system..... | 8 |
| Module 4: Repair and maintenance of the micro-irrigation system | 9 |
| Module 5: Hygiene and cleanliness | 10 |
| Module 6: Safety and emergency procedures..... | 11 |
| Module 7: Employability Skills (60 hours)..... | 12 |
| Annexure..... | 14 |
| Trainer Requirements | 14 |
| Assessor Requirements..... | 16 |
| Assessment Strategy..... | 17 |
| References | 22 |
| Glossary..... | 22 |
| Acronyms and Abbreviations..... | 23 |

Training Parameters

| | |
|---|---|
| Sector | Agriculture |
| Sub-Sector | Agriculture Crop Production |
| Occupation | Precision Farming |
| Country | India |
| NSQF Level | 4 |
| Aligned to NCO/ISCO/ISIC Code | NCO-2015/3142.0101 |
| Minimum Educational Qualification and Experience | <p>11th grade pass OR 10th Pass with 2 Years of relevant experience OR 10th Class Pass and pursuing continuous regular schooling OR 8th Class with 3 Years of relevant experience Or Certificate-NSQF Level- 4(Irrigation Service Technician) with 6 months of relevant experience OR Previous relevant qualification of NSQF Level 3 with minimum education as 5th grade pass with 2 Years of relevant experience OR Previous relevant qualification of NSQF Level 3.5 with 1 year relevant experience</p> |
| Pre-Requisite License or Training | NA |
| Minimum Job Entry Age | 18 Years |
| Last Reviewed On | 17/11/2022 |
| Next Review Date | 30/12/2024 |
| NSQC Approval Date | 30/12/2021 |
| QP Version | 3.0 |
| Model Curriculum Creation Date | 30/12/2021 |
| Model Curriculum Valid Up to Date | 30/12/2024 |
| Model Curriculum Version | 2.0 |
| Minimum Duration of the Course | 390 Hours |
| Maximum Duration of the Course | 390 Hours |

Program Overview

This section summarizes the end objectives of the program along with its duration.

Training Outcomes

At the end of the program, the learner should have acquired the listed knowledge and skills to:

- Describe the process of setting up a micro-irrigation system.
- Demonstrate the process of installing the micro-irrigation system.
- Demonstrate the process of carrying out the repair and maintenance of the micro-irrigation system.
- Explain the basic entrepreneurial activities for small enterprise.
- Describe the process of undertaking employability and entrepreneurial practices.
- Explain the importance of following inclusive practices for Persons with Disabilities (PwD) and gender equality at work.
- Demonstrate various practices to maintain personal hygiene, cleanliness, and safety at the workplace.

Compulsory Modules

The table lists the modules and their duration corresponding to the Compulsory NOS of the QP.

| NOS and Module Details | Theory Duration | Practical Duration | On-the-Job Training Duration (Mandatory) | On-the-Job Training Duration (Recommended) | Total Duration |
|---|-----------------|--------------------|--|--|----------------|
| AGR/N1004 Prepare to set up the micro-irrigation system NOS Version- 3.0 NSQF Level- 4 | 30:00 | 60:00 | 0:00 | 0:00 | 90:00 |
| Module 1: Introduction to the role of a Micro-Irrigation Technician | 05:00 | 00:00 | 0:00 | 0:00 | 05:00 |
| Module 2: Preparation for setting up the micro-irrigation system | 25:00 | 60:00 | 0:00 | 0:00 | 85:00 |
| AGR/N1005 Install the Micro-Irrigation System NOS Version- 3.0 NSQF Level- 4 | 45:00 | 105:00 | 0:00 | 0:00 | 150:00 |
| Module 3: Installation of the micro-irrigation system | 45:00 | 105:00 | 0:00 | 0:00 | 150:00 |

| | | | | | |
|---|---------------|---------------|-------------|-------------|---------------|
| AGR/N1006 Perform Repair and Maintenance of the micro irrigation system NOS Version- 3.0 NSQF Level- 4 | 30:00 | 30:00 | 0:00 | 0:00 | 60:00 |
| Module 4: Repair and maintenance of the micro-irrigation system | 30:00 | 30:00 | 0:00 | 0:00 | 60:00 |
| AGR/N9903 Maintain health and safety at the workplace NOS Version- 4.0 NSQF Level-4 | 15:00 | 15:00 | 0:00 | 0:00 | 30:00 |
| Module 5: Hygiene and cleanliness | 03:00 | 03:00 | 0:00 | 0:00 | 06:00 |
| Module 6: Safety and emergency procedures | 12:00 | 12:00 | 0:00 | 0:00 | 24:00 |
| DGT/VSQ/N0102 Employability Skills NOS Version-1.0 NSQF Level-4 | 60:00 | 00:00 | 0:00 | 0:00 | 60:00 |
| Module 7: Employability Skills | 60:00 | 00:00 | 0:00 | 0:00 | 60:00 |
| Total Duration | 180:00 | 210:00 | 0:00 | 0:00 | 390:00 |

Module Details

Module 1: Introduction to the role of a Micro-Irrigation Technician

Bridge Module, Mapped to AGR/N1004 v3.0

Terminal Outcomes:

- Discuss the job role of a Micro-Irrigation Technician.

| Duration: 05:00 | Duration: 0:00 |
|---|--|
| Theory – Key Learning Outcomes | Practical – Key Learning Outcomes |
| <ul style="list-style-type: none"> • Describe the size and scope of the agriculture industry and its sub-sectors. • Discuss the role and responsibilities of a Micro Irrigation Technician. • Identify various employment opportunities for a Micro Irrigation Technician. | |
| Classroom Aids | |
| Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop | |
| Tools, Equipment and Other Requirements | |
| NA | |

Module 2: Preparation for setting up the micro-irrigation system

Mapped to AGR/N1004 v3.0

Terminal Outcomes:

- Describe the process of planning the micro-irrigation system.
- List various resources required for the installation of the micro-irrigation system.

| Duration: 25:00 | Duration: 60:00 |
|---|--|
| Theory – Key Learning Outcomes | Practical – Key Learning Outcomes |
| <ul style="list-style-type: none"> • List different types of micro-irrigation systems such as sprinkler irrigation, drip irrigation, spray irrigation and subsurface irrigation system. • Explain the difference between different types of irrigation systems. • List various parameters to be assessed while planning the installation of a micro-irrigation system. • Explain how to evaluate the land gradient and elevation differences to select a suitable micro-irrigation system. • Explain how to calculate the water needs of a crop during various stages of its growth. • Explain the relevant regulatory requirements to be adhered to in the planning and installation of an irrigation system. • List various tools, equipment and resources required for the installation of a micro-irrigation system. | <ul style="list-style-type: none"> • Show how to evaluate the land gradient and elevation differences to select a suitable micro-irrigation system. • Demonstrate the process of measuring an area for irrigation. • Demonstrate how to calculate the water requirements for micro irrigation in the selected area. • Prepare a sample design for the installation of a micro-irrigation system. • Prepare a sample record of the purchase of relevant materials. |
| Classroom Aids | |
| Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop | |
| Tools, Equipment and Other Requirements | |
| Drawing Sheet, Chart Paper, Pencil, Eraser, Colour Marker | |

Module 3: Installation of the micro-irrigation system

Mapped to ARG/N1005 v3.0

Terminal Outcomes:

- Demonstrate the process of installing the micro-irrigation system.
- Describe various practices for effective resource optimisation.

| Duration: 45:00 | Duration: 105:00 |
|---|---|
| Theory – Key Learning Outcomes | Practical – Key Learning Outcomes |
| <ul style="list-style-type: none"> • Describe the process of connecting various components and fittings to prepare a micro-irrigation system. • Explain the advantage of using an irrigation timer. • Describe the process of installing a water pump. • Explain the concept of fertigation system and the advantages of using it. • Explain the process of testing the functioning of a micro-irrigation system after installation and carrying out the necessary troubleshooting. • Explain the importance of following the maintenance schedule for a micro-irrigation system. • Describe the process of retrieving the micro-irrigation system after harvesting and installing it again before planting the next crop. | <ul style="list-style-type: none"> • Demonstrate the process of installing emitters/ sprayers/ foggers and the water pump. • Demonstrate the process of installing the fertigation equipment to deliver water mixed with fertilizers to plants. • Demonstrate the process of testing the micro-irrigation system after the installation is complete. • Demonstrate the process of performing troubleshooting for any issues identified with the micro-irrigation system during testing. • Demonstrate various practices to optimise the usage of various resources such as water, electricity, and relevant materials. |
| Classroom Aids | |
| Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop | |
| Tools, Equipment and Other Requirements | |
| HDPE Pipe, PVC Pipe, Disk Filter, Screen Filter, Sand Filter, Drip Line, Ball Valve, Service Saddle, cutter, Punching Machine, Pressure Gauge, Fertilizer Tank/ Ventury, End Cap, Valve, Sprinkler with Stand and Micro Tube | |

Module 4: Repair and maintenance of the micro-irrigation system

Mapped to AGR/N1006 v3.0

Terminal Outcomes:

- Demonstrate the process of carrying out repair and maintenance of the micro-irrigation system.
- Demonstrate various practices for effective disposal of waste.

| Duration: 30:00 | Duration: 30:00 |
|---|---|
| Theory – Key Learning Outcomes | Practical – Key Learning Outcomes |
| <ul style="list-style-type: none"> • Describe the process of conducting regular checks on a micro-irrigation system to identify the repair and maintenance needs. • Describe the process of carrying out regular repair and maintenance of the micro-irrigation system. • Describe the process of carrying out chlorine/ acid treatment to remove salts such as carbonates, bi-carbonates, iron and calcium from the micro-irrigation system. • Explain the importance of recycling and disposing different types of waste as per the applicable regulatory requirements. | <ul style="list-style-type: none"> • Show how to examine the emitters for the required level of pressure. • Show how to examine the fertigation system and irrigation timer for correct functioning. • Demonstrate the process of carrying out chlorine/ acid treatment to remove salts such as carbonates, bi-carbonates, etc. • Show how to identify malfunctions in various micro-irrigation system components. • Demonstrate the process of replacing the damaged or malfunctioning micro-irrigation system components. • Prepare a sample record of maintenance. • Demonstrate the process of recycling and disposing different types of waste in compliance with the applicable regulatory requirements. |
| Classroom Aids | |
| Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop | |
| Tools, Equipment and Other Requirements | |
| NA | |

Module 5: Hygiene and cleanliness

Mapped to NOS AGR/N9903 v4.0

Terminal Outcomes:

- Discuss how to adhere to personal hygiene practices.
- Demonstrate ways to ensure cleanliness around the workplace.

| Duration: 03:00 | Duration: 03:00 |
|---|--|
| Theory – Key Learning Outcomes | Practical – Key Learning Outcomes |
| <ul style="list-style-type: none"> • Explain the requirements of personal health, hygiene and fitness at work. • Describe common health-related guidelines laid down by the organizations/ Government at the workplace. • Explain the importance of good housekeeping at the workplace. • Explain the importance of informing the designated authority on personal health issues related to injuries and infectious diseases. | <ul style="list-style-type: none"> • Demonstrate personal hygiene practices to be followed at the workplace. • Demonstrate the correct way of washing hands using soap and water, and alcohol-based hand rubs. • Demonstrate the steps to follow to put on and take off a mask safely. • Show how to sanitize and disinfect one's work area regularly. • Demonstrate adherence to the workplace sanitization norms. • Show how to ensure cleanliness of the work area. |
| Classroom Aids: | |
| Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook. | |
| Tools, Equipment and Other Requirements | |
| Personal Protective Equipment, Cleaning Equipment and Materials, Sanitizer, Soap, Mask | |

Module 6: Safety and emergency procedures

Mapped to NOS AGR/N9903 v4.0

Terminal Outcomes:

- Describe how to adhere to safety guidelines.
- Show how to administer appropriate emergency procedures.

| Duration: 12:00 | Duration: 12:00 |
|---|--|
| Theory – Key Learning Outcomes | Practical – Key Learning Outcomes |
| <ul style="list-style-type: none"> • List the Personal Protective Equipment (PPE) required at the workplace. • Describe the commonly reported hazards at the workplace. • Describe the hazards caused due to chemicals/pesticides/fumigants. • Describe the basic safety checks to be done before the operation of any equipment/machinery. • Describe the common first aid procedures to be followed in case of emergencies. • State measures that can be taken to prevent accidents and damages at the workplace. • Explain the importance of reporting details of first aid administered, to the reporting officer/doctor, in accordance with workplace procedures. • State common health and safety guidelines to be followed at the workplace. | <ul style="list-style-type: none"> • Check various areas of the workplace for leakages, water-logging, pests, fire, etc. • Demonstrate how to safely use the PPE and implements as applicable to the workplace. • Display the correct way of donning, doffing and discarding PPE such as face masks, hand gloves, face shields, PPE suits, etc. • Sanitize the tools, equipment and machinery properly. • Demonstrate the safe disposal of waste. • Demonstrate procedures for dealing with accidents, fires and emergencies. • Demonstrate emergency procedures to the given workplace requirements. • Demonstrate the use of emergency equipment in accordance with manufacturers' specifications and workplace requirements. • Demonstrate the administration of first aid. • Prepare a list of relevant hotline/emergency numbers. |
| Classroom Aids: | |
| Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook. | |
| Tools, Equipment and Other Requirements | |
| Personal protective equipment, first aid kit, equipment used in medical emergencies. | |

Module 7: Employability Skills (60 hours)

Mapped to NOS DGT/VSQ/N0102 v1.0

Duration: 60:00

Key Learning Outcomes

Introduction to Employability Skills Duration: 1.5 Hours

After completing this programme, participants will be able to:

1. Discuss the Employability Skills required for jobs in various industries
2. List different learning and employability related GOI and private portals and their usage

Constitutional values - Citizenship Duration: 1.5 Hours

3. Explain the constitutional values, including civic rights and duties, citizenship, responsibility towards society and personal values and ethics such as honesty, integrity, caring and respecting others that are required to become a responsible citizen
4. Show how to practice different environmentally sustainable practices.

Becoming a Professional in the 21st Century Duration: 2.5 Hours

5. Discuss importance of relevant 21st century skills.
6. Exhibit 21st century skills like Self-Awareness, Behavior Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn etc. in personal or professional life.
7. Describe the benefits of continuous learning.

Basic English Skills Duration: 10 Hours

8. Show how to use basic English sentences for everyday conversation in different contexts, in person and over the telephone
9. Read and interpret text written in basic English
10. Write a short note/paragraph / letter/e -mail using basic English

Career Development & Goal Setting Duration: 2 Hours

11. Create a career development plan with well-defined short- and long-term goals

Communication Skills Duration: 5 Hours

12. Demonstrate how to communicate effectively using verbal and nonverbal communication etiquette.
13. Explain the importance of active listening for effective communication
14. Discuss the significance of working collaboratively with others in a team

Diversity & Inclusion Duration: 2.5 Hours

15. Demonstrate how to behave, communicate, and conduct oneself appropriately with all genders and PwD
16. Discuss the significance of escalating sexual harassment issues as per POSH act.

Financial and Legal Literacy Duration: 5 Hours

17. Outline the importance of selecting the right financial institution, product, and service
18. Demonstrate how to carry out offline and online financial transactions, safely and securely
19. List the common components of salary and compute income, expenditure, taxes, investments etc.
20. Discuss the legal rights, laws, and aids

Essential Digital Skills Duration: 10 Hours

21. Describe the role of digital technology in today's life
22. Demonstrate how to operate digital devices and use the associated applications and features, safely and securely
23. Discuss the significance of displaying responsible online behavior while browsing, using various social media platforms, e-mails, etc., safely and securely
24. Create sample word documents, excel sheets and presentations using basic features
25. utilize virtual collaboration tools to work effectively

Entrepreneurship Duration: 7 Hours

26. Explain the types of entrepreneurship and enterprises
27. Discuss how to identify opportunities for potential business, sources of funding and associated financial and legal risks with its mitigation plan
28. Describe the 4Ps of Marketing-Product, Price, Place and Promotion and apply them as per requirement
29. Create a sample business plan, for the selected business opportunity

Customer Service Duration: 5 Hours

30. Describe the significance of analysing different types and needs of customers
31. Explain the significance of identifying customer needs and responding to them in a professional manner.
32. Discuss the significance of maintaining hygiene and dressing appropriately

Getting Ready for apprenticeship & Jobs Duration: 8 Hours

33. Create a professional Curriculum Vitae (CV)
34. Use various offline and online job search sources such as employment exchanges, recruitment agencies, and job portals respectively
35. Discuss the significance of maintaining hygiene and confidence during an interview
36. Perform a mock interview
37. List the steps for searching and registering for apprenticeship opportunities

Annexure

Trainer Requirements

| Trainer Prerequisites | | | | | | |
|-----------------------------------|---|------------------------------|----------------------------|---------------------|----------------|---|
| Minimum Educational Qualification | Specialization | Relevant Industry Experience | | Training Experience | | Remarks |
| | | Years | Specialization | Years | Specialization | |
| 10th Class | | 7 | Agriculture Farm Machinery | 0 | | Micro Irrigation Technician with 7 Years' experience with Government/civic authority/registered nursery/corporates |
| 12th Class | | 5 | Agriculture Farm Machinery | 0 | | Ex-Service-Man including Ex-Paramilitary personnel: Minimum Qualification is 10+2 with an Honourable Discharge/Pension. SSC would consider a relaxation/waiver of sector-specific experience on case-to-case basis. |
| Diploma | Mechanical/ Civil/ Plumbing/ Fitter | 3 | Agriculture Farm Machinery | 0 | | |
| ITI | Mechanical/ Civil/ Plumbing/ Fitter | 3 | Agriculture Farm Machinery | 0 | | |
| Graduate | Graduate in any stream with 10+2 in Science | 3 | Agriculture Farm Machinery | 0 | | For the school Program minimum qualification of the Trainer should be Graduate with 10+2 in Science. Their Teaching experience will be considered industry experience |

| | | | | | | |
|-------------|--|-----|----------------------------|---|--|--|
| Graduate | Agriculture / Horticulture / Botany/Forestry | 1 | Agriculture Farm Machinery | 0 | | |
| Certificate | NCIC-Fitter/Plumber certificate, Relevant CITS-NCIC Course | 1 | Agriculture Farm Machinery | 0 | | |
| B.Tech. | Mechanical/ Civil | 0.5 | Agriculture Farm Machinery | 0 | | |
| B.Tech. | Agriculture engineering | 0 | Agriculture Farm Machinery | 0 | | |

| Trainer Certification | |
|---|---|
| Domain Certification | Platform Certification |
| Certified for Job Role “ Micro-Irrigation Technician ”, mapped to QP: “AGR/Q1002, v3.0”, Minimum accepted score is 80% | Recommended that the Trainer is certified for the Job Role: “Trainer (Vet and Skills)”, mapped to the Qualification Pack: “MEP/Q2601, v2.0”. The minimum accepted score as per MEPSC guidelines is 80%. |

Assessor Requirements

| Assessor Prerequisites | | | | | | |
|-----------------------------------|--|------------------------------|--|--------------------------------|----------------|---|
| Minimum Educational Qualification | Specialization | Relevant Industry Experience | | Training/Assessment Experience | | Remarks |
| | | Years | Specialization | Years | Specialization | |
| Graduation | Agriculture/ Agriculture Engineering/Mechanical Engineering/Farm Machinery and related streams | 5 | Agriculture/Farm Machinery/irrigation Engineering and related experience | 0 | | Practical skills and knowledge required in the maintenance of irrigation & farm machinery |
| Post-graduation | Agriculture/ Agriculture Engineering/Mechanical Engineering/Farm Machinery and related streams | 2 | Agriculture/Farm Machinery/irrigation Engineering and related experience | 0 | | Practical skills and knowledge required in the maintenance of irrigation & farm machinery |
| PhD | Agriculture/ Agriculture Engineering/Mechanical Engineering/Farm Machinery and related streams | 1 | Agriculture/Farm Machinery/irrigation Engineering and related experience | 0 | | Practical skills and knowledge required in the maintenance of irrigation & farm machinery |

| Assessor Certification | |
|--|---|
| Domain Certification | Platform Certification |
| <p>“Micro-Irrigation Technician”, “AGR/Q1002, v3.0”, Minimum accepted score is 80%</p> | <p>Certified for the Job Role: “Assessor (Vet and Skills)”, mapped to the Qualification Pack: “MEP/Q2701, v2.0”, with a minimum score of 80%.</p> |

Assessment Strategy

Assessment System Overview

In Agriculture Sector it is of ultimate importance that individuals dealing with crop production or livestock have the requisite knowledge and competencies to undertake the task. Based on the Assessment Criteria, SSC in association with empanelled AAs, define the test structure for the given job roles to cover the required skills and competencies. Assessment strategy consists of the following:

1. Multiple Choice Questions: To assess basic knowledge (Objective/Subjective)
2. Viva: To assess awareness on processes (Oral and/or written questioning)
3. Practical: To evaluate skills and identify competencies. (Observation)

Assessments for knowledge and awareness on processes may be conducted through 'real-time' internet-based evaluation or by conducting the same 'offline' through TABs. Skills and competencies are to be assessed by conducting 'practical' on the ground through qualified and ToA certified assessors.

While it is important that an individual has adequate knowledge and skills to perform a specific task, weightage for different aspects of assessment are given as follows:

- Multiple Choice Questions: 20%-30%, depending on the specific QP
- Viva: 20%
- Practical: 50% - 60% (Involves demonstrations of applications and presentations of procedures/tasks and other components)
- Assessment will be carried out by certified assessors through empanelled assessment partners. Based on the results of the assessment; ASCI will certify the learners/candidates

Testing Environment

Assessments are conducted on laptops, Mobiles and android tablets via both offline and online mode depending on the internet connectivity at the assessment location.

In remote locations/villages, assessments get delivered through tablets without the requirement of the Internet.

- Multilingual assessments (ASCI is conducting assessments in 13 + languages pan India)
- Rubric driven assessments in Practical/Viva sections and responses recorded accordingly
- All responses, data, records and feedback stored digitally on the cloud
- Advanced auto-proctoring features – photographs, time-stamp, geographic-tagging, toggle- screen/copy-paste disabled, etc.
- Android-based monitoring system

- End to end process from allocation of a batch to final result upload, there is no manual intervention
- Assessment will normally be fixed for a day after the end date of the training / within 7 days of completion of training.
- Assessment will be conducted at the training venue
- The room where assessment is conducted will be set with proper seating arrangements with enough space to curb copying or other unethical activities
- Question bank of theory and practical will be prepared by ASCI /assessment agency and approved ASCI. Only from approved Question Bank assessment agency will prepare the question paper. Theory testing will include multiple-choice questions, pictorial question, etc. which will test the trainee on his theoretical knowledge of the subject.
- The theory, practical and viva assessments will be carried out on the same day. In case of more number of candidates, the number of assessors and venue facilitation be increased and facilitated

| Assessment | | | |
|-----------------|------------------------|--------------------------------|--|
| Assessment Type | Formative or Summative | Strategies | Examples |
| Theory | Summative | MCQ/Written exam | Knowledge of facts related to the job role and functions. Understanding of principles and concepts related to the job role and functions |
| Practical | Summative | Structured tasks/Demonstration | Practical application /Demonstration /Application tasks |
| Viva | Summative | Questioning and Probing | Mock interviews on the usability of job roles/advantages /importance of adherence to procedures. Viva will be used to gauge trainee's confidence and correct knowledge in handling the job situation |

The question paper pre-loaded in the computer /Tablet and it will be in the language as requested by the training partner.

Assessment Quality Assurance framework

Assessment Framework and Design:

Based on the Assessment Criteria, SSC in association with AAs will define the test structure for the given roles to cover the required skills and competencies. ASCI offer a bouquet of tools for multi-dimensional evaluation of candidates covering language, cognitive skills, behavioural traits and domain knowledge.

Theoretical Knowledge - Item constructs and types are determined by a theoretical understanding of the testing objectives and published research about the item-types and constructs that have shown statistical validity towards measuring the construct. Test item types that have been reported to be coachable are not included. Based on these, items are developed by domain experts. They are provided with comprehensive guidelines of testing objectives of each question and other quality measures.

Type – Questions based on Knowledge Required, Case-based practical scenario questions and automated simulation-based questions.

Practical Skills - The practical assessments are developed taking into consideration two aspects: what practical tasks is the candidate expected to perform on the job and what aspects of the job cannot be judged through theoretical assessments. The candidates shall be asked to perform either an entire task or a set of subtasks depending on the nature of the job role

Type – Standardized rubrics for evaluation against a set of tasks in a demo/practical task

Viva Voce - Those practical tasks which cannot be performed due to time or resource constraints are evaluated through the viva mode. Practical tasks are backed up with Viva for thorough assessment and complete evaluation

Type – Procedural questions, dos and don'ts, subjective questions to check the understanding of practical tasks.

The assessor has to go through an orientation program organized by the Assessment Agency. The training would give an overview to the assessors on the overall framework of QP evaluation. The assessor shall be given a NOS and PC level overview of each QP as applicable. The overall structure of assessment and objectivity of the marking scheme will be explained to them. The giving of marks will be driven by an objective framework that will maintain the standardization of the marking scheme.

Type of Evidence and Evidence Gathering Protocol:

During the assessment the evidence collected by AAs and ASCI are:

- Geo Tagging to track ongoing assessment
- AA's coordinator emails the list of documents and evidence (photos and videos) to the assessor one day before the assessment. The list is mentioned below:
 - Signed Attendance sheet
 - Assessor feedback sheet
 - Candidate feedback sheet
 - Assessment checklist for assessor
 - Candidate Aadhar/ID card verification
 - Pictures of the classroom, labs to check the availability of adequate equipment's and tool to conduct the training and assessment
 - Pictures and videos of Assessment, training feedback and infrastructure.
- Apart from the Assessor, a Technical assistant popularly known as Proctor also ensures the proper documentation and they verify each other's tasks.
- To validate their work on the day of the assessment, regular calls and video calls are done.
- On-boarding and training of assessor and proctor is done on a timely basis to ensure that the quality of the assessment should be maintained.
- Training covers the understanding of QP, NSQF level, NOS and assessment structure

Methods of Validation

- Morning Check (Pre-Assessment): Backend team of AA calls and confirms assessor/technical SPOC event status. Assessor/Technical SPOC are instructed to reach the centre on time by 9:30 AM / as decided with TC and delay should be highlighted to the Training Partner in advance.
- Video Calls: Random video calls are made to the technical SPOC/assessor so as to keep a check on assessment quality and ensure assessment is carried out in a fair and transparent manner
- Aadhar verification of candidates
- Evening Check (Post Assessment): Calls are made to the ground team to ensure the event is over by what time and the documentation is done properly or not.
- TP Calling: To keep a check on malpractices, an independent audit team calls the TP on a recorded line to take confirmation if there was any malpractice activity observed in the assessment on part of the AA/SSC team. If calls are not connected, an email is sent to TP SPOC for taking their confirmation
- Video and Picture Evidence: Backend team collects video and pictures for assessment on a real-time basis and highlights any issue such as students sitting idle/ trainer helping the candidates during the assessment.
- Surprise Visit: Time to time SSC/AA Audit team can visit the assessment location and conduct a surprise audit for the assessment carried out by the ground team.
- Geo Tagging: On the day of the assessment, each technical SPOC is required to login into

our internal app which is Geotagged. Any deviation with the centre address needs to be highlighted to the assessment team on a real-time basis.

Method for assessment documentation, archiving, and Access:

- ASCI has a fully automated result generation process in association with multiple AAs
- Theory, Practical and Viva marks form the basis of the results and encrypted files generated to avoid data manipulation. All responses captured and stored in the System with Time-Stamps at the end of AAs and SSC. NOS-wise and PC-wise scores can be generated.
- Maker Checker concept: One person prepares the results and another audit result which is internally approved by AA at first and then gets vetted at the end of SSC
- All softcopies of documents are received from the on-ground tech team over email. The same are downloaded by our internal backend team and saved in Repository. The repository consists of scheme-wise folders. These scheme-wise folders have job role specific folders. These specific folders have Year wise and Month wise folders where all documents are saved in Batch specific folders. All Hard copies are filed and stored in the storeroom.

Result Review & Recheck Mechanism –

- Time-stamped assessment logs
- Answer/Endorsement sheets for each candidate
- Attendance Sheet
- Feedback Forms: Assessor feedback form, Candidate feedback form, TP feedback form
- The results for each of the candidate shall be stored and available for review (retained for 5 years/ till the conclusion of the project or scheme)

References

Glossary

| Term | Description |
|-----------------------------|---|
| 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 |
| Key Learning | Key learning outcome is the statement of what a learner needs to know, understand and be able to do in order to achieve the terminal outcomes. A set of key learning outcomes will make up the training outcomes. Training outcome is specified in terms of knowledge, understanding (theory) and skills (practical application). |
| OJT (M) | On-the-job training (Mandatory); trainees are mandated to complete specified hours of training on site |
| OJT (R) | On-the-job training (Recommended); trainees are recommended the specified hours of training on site |
| Procedural Knowledge | Procedural knowledge addresses how to do something, or how to perform a |
| Training Outcome | Training outcome is a statement of what a learner will know, understand and be able to do upon the completion of the training. |
| Terminal Outcome | Terminal outcome is a statement of what a learner will know, understand and be able to do upon the completion of a module. A set of terminal outcomes help to achieve the training outcome. |

Acronyms and Abbreviations

| Term | Description |
|------|--|
| AGR | Agriculture |
| NOS | National Occupational Standard (s) |
| NSQF | National Skills Qualifications Framework |
| OJT | On-the-job Training |
| QP | Qualifications Pack |
| PwD | People with Disability |
| PPE | Personal Protective Equipment |