



Model Curriculum

QP Name: Fish Seed Grower

QP Code: AGR/Q4908

Version: 4.0

NSQF Level: 4

Model Curriculum Version: 3.0

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

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Training Parameters

Sector	Agriculture
Sub-Sector	Fisheries
Occupation	Aquaculture
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/6221
Minimum Educational Qualification and Experience	12 th or Equivalent OR 10th or Equivalent with 3 years of relevant experience in Fisheries and related sector OR Previous NSQF Level 3.5 with 1.5 years of relevant experience in Fisheries and related sector OR Previous NSQF Level 3.0 with 3 Years of relevant experience in Fisheries and related sector
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	22-10-2024
Next Review Date	22-10-2027
NSQC Approval Date	22-10-2024
QP Version	4.0
Model Curriculum Creation Date	22-10-2024
Model Curriculum Valid Up to Date	22-10-2027
Model Curriculum Version	3.0
Minimum Duration of the Course	450 Hours
Maximum Duration of the Course	450 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 maintaining the soil and water quality in the culture pond.
- Describe the process of supervising the culture, harvest and post-harvest activities.
- Demonstrate various practices to ensure health, hygiene and safety during culture operations.
- Describe the process of managing and leading a team.

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/N4966 Ensure the soil and water quality in the culture pond NOS Version-1.0 NSQF Level-4	50:00	70:00	0:00	0:00	120:00
Module 1: Introduction to the role of a Fish Seed Grower	5:00	00:00	0:00	0:00	05:00
Module 2: Maintenance of the soil and water quality in the culture pond	45:00	70:00	0:00	0:00	115:00
AGR/N4969 Feeding and monitoring the Fish seed NOS Version-1.0 NSQF Level-4	10:00	20:00	0:00	0:00	30:00
Module 3: Carryout feeding and monitoring of fish seed	10:00	20:00	0:00	0:00	30:00
AGR/N4931 Supervise the culture, harvest and post-harvest activities NOS Version-2.0 NSQF Level-4	60:00	90:00	0:00	0:00	150:00
Module 4: Supervision of culture, harvest and post-harvest process	60:00	90:00	0:00	0:00	150:00

AGR/N4918 Health Hygiene and safety during culture operations NOS Version-2.0 NSQF Level-4	15:00	15:00	0:00	0:00	30:00
Module 5: Health, hygiene and safety procedures	15:00	15:00	0:00	0:00	30:00
AGR/N9923 Manage and lead a team effectively NOS Version-2.0 NSQF Level-6	15:00	15:00	0:00	0:00	30:00
Module 6: Process of managing and leading a team	15:00	15:00	0:00	0:00	30:00
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	90:00	00:00	0:00	0:00	90:00
Total Duration	210:00	210:00	30:00	0:00	450:00

Module Details

Module 1: Introduction to the role of a Fish Seed Grower

Bridge Module, Mapped to NOS AGR/N4966 v1.0

Terminal Outcomes:

- Discuss the job role a Fish Seed Grower.

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 Fish Seed Grower. • Identify various employment opportunities for a Fish Seed Grower. 	
Classroom Aids	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
NA	

Module 2: Maintenance of the soil and water quality in the culture pond

Mapped to NOS AGR/N4966 v1.0

Terminal Outcomes:

- Describe the process of supervising the soil conditioning process.
- Explain the importance of maintaining the required water quality in the culture pond.
- Demonstrate various practices for effective resource optimisation.

Duration: 45:00	Duration: 100:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Explain how to use a pH meter to check the soil pH level. • List various measures to adjust the soil pH level. • Explain the need of applying recommended fertilisers to the culture pond in the appropriate quantity. • State the appropriate temperature level of the pond required for the fish/crustacean species to be cultured. • Explain the importance and ways of ensuring the optimum level of dissolved oxygen, salinity and alkalinity in the culture pond. • Explain the importance of ensuring optimum depth in the culture pond for the fish and crustacean species to be cultured. • Explain the benefits of resource optimisation. 	<ul style="list-style-type: none"> • Demonstrate the use of a pH meter to check the pH level of the soil. • Demonstrate the process of applying lime or gypsum to the soil to adjust the pH. • Demonstrate how to replace the pond water for the removal of any waste in the pond. • Demonstrate various practices to optimise the usage of various resources such as water and electricity.
Classroom Aids	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
Benchtop pH Meter, Conductivity Meter, Dissolved Carbon Dioxide Meter, Dissolved Oxygen Analyser, Portable Conductivity Meter, Secchi Disc, Portable Turbidity Meter, Spectrophotometer Soluble Reactive Phosphorous Analyzer, Centrifuge, Thermometer, Orbital Shaker, BOD Analyser, Flame Photometer, Hot plate, Double Distillation Unit, Whatman Filter Paper, Volumetric Flask (10ml, 25ml, 100ml, 250ml, 500ml, 1000ml), Flat bottom, Flask, Round bottom Flask, Test tube, Pipette, Dropper, DO Brown Bottles, Measuring Cylinder, Glass Funnel, Burette, Burette Stand	

Module 3: Carryout feeding and monitoring of fish seed

Mapped to NOS AGR/N4969 v1.0

Terminal Outcomes:

- Describe about the high quality balanced feed requirements of the fish seed.
- Explain about the Feed Conversion Ratio and its calculation and importance

Duration: 10:00	Duration: 20:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Explain the importance of ensuring adherence to a strict feed quality control program, including regular inspections and testing • Explain the importance of consistent feeding schedules to avoid overfeeding or underfeeding • Explain Feed Conversion Ratio (FCR) • Discuss the strategies to improve FCR, such as adjusting feeding rates, improving water quality, and preventing disease outbreaks • Describe various standardized growth measurement methods to ensure accurate data collection • Explain about growth rates to industry benchmarks and setting performance targets • Explain the disadvantages of overfeeding the fish seed 	<ul style="list-style-type: none"> • Demonstrate the usage of high-quality, nutritionally balanced feed that meets the specific needs of the fish species and growth stages • Demonstrate proper storage and handling of feed to maintain its nutritional value and prevent spoilage • calculate and distribute feed amounts based on fish size, water temperature, and growth rates • Demonstrate the use of automated feeding systems or manual feeding methods that ensure even distribution of feed throughout the tanks • Monitor and optimization of FCR to minimize feed wastage and maximize fish growth • Demonstrate tracking and monitoring fish growth rates to assess the effectiveness of feeding and management practices • Demonstrate recording and analysing mortality rates to identify potential causes such as excessive feed, disease, poor water quality, or other factors and implement corrective measures
Classroom Aids	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
Fish Seed, quality Fish feed	

Module 4: Supervision of culture, harvest and post-harvest activities

Mapped to NOS AGR/N4931 v2.0

Terminal Outcomes:

- Describe the process of preparing the pond for the selected seed species.
- Describe the process of purchasing the seeds and supervising their stocking.
- Describe the process of supervising the maintenance of the stocked seeds in the pond.
- Describe the process of supervising the harvesting and packing of seeds.
- Demonstrate various waste management practices.

Duration: 70:00	Duration: 110:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • List the varieties of species suitable for seed production. • Describe the process of preparing the pond according to the stages of growth of the seed to be grown. • Describe the process of applying the appropriate treatments to improve soil fertility. • Describe the process of de-mudding, draining and sun-drying the pond. • Explain the importance of purchasing quality seeds. • Describe the process of stocking seeds while maintaining the species ratio and density recommended for the selected species. • State the recommended water level, temperature and Relative Humidity (RH) for the varieties of fish species. • Explain various culture activities for a variety of fish species. • State the feed requirement and feeding schedule for different fish species. • Explain the importance of maintaining the optimum salinity, pH, oxygen levels in the pond. • List different signs of harmful organisms and disease in the stocked seeds and the appropriate treatment to remove them. • List various indicators of the maturity of 	<ul style="list-style-type: none"> • Demonstrate the process of removing aquatic weeds, predatory and weed fish from the pond. • Demonstrate the process of applying appropriate treatment for controlling aquatic insects before seed stocking. • Show how to acclimatise the seeds before being stocked. • Prepare a sample record of the purchase. • Demonstrate the process of periodic sampling of water, soil and seeds to check the occurrence of pathogens, abnormalities and infections. • Demonstrate the process of applying necessary treatment in the pond to remove harmful organisms. • Demonstrate the process of harvesting the seeds using an appropriate method, ensuring no damage to them. • Demonstrate the process of conditioning the seeds before transportation. • Show how to pack the harvested fish seeds in containers at the optimum density. • Demonstrate the process of recycling and disposing different types of waste appropriately.

<p>the seeds to identify their readiness for being harvested.</p> <ul style="list-style-type: none"> ● Explain the importance of using the nets with appropriate mesh size and method for harvesting the seeds. ● State the appropriate containers and density for packing the seeds. ● Explain the criteria for segregating waste into appropriate categories. 	
Classroom Aids	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
Lime, Chemical Fertilizers Rice Bran, Ground Nut Oil Cake, Diesel Liquid Soap, Oxygen Cylinder Polythene Bags, Thick Thread, Conditioning Hapa, Breeding Hapa, Hatching Hapa, Bamboos, Canvas Bags, Hand Net, Synthetic Hormones like WOVA-FH, Ovatide, Pituitary Gland, Homogenized, Balance for Weighing in Milligrams Beaker, Distilled Water, Syringes, Needles balance for weighing big fishes, Sponge small hatchery Dragnet, Fry net, Watch Glass	

Module 5: Health, hygiene and safety procedures

Mapped to AGR/N4918 v2.0

Terminal Outcomes:

- Demonstrate various practices to maintain the upkeep of water body, tools and equipment.
- Describe how to adhere to personal hygiene and safety practices.
- Demonstrate ways to maintain the health of cultured organisms.

Duration: 15:00	Duration: 15:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Explain various practices to protect the aquaculture farm and dykes from erosion and natural calamities. • Describe the process of protecting the cultured organisms from water/ air/ fomite borne diseases and contamination from handling. • Describe the process of identifying and eliminating common predators and preying organisms in the water body. • Explain the importance of fencing to protect the water body from external threats. • State measures that can be taken to prevent the escape of cultured organisms from the culture pond/ tank. • Explain the importance and process of conducting regular tests to maintain the recommended soil and water quality parameters in the water body. • Explain the importance of cleaning and decontaminating the nets, vessels, tools and equipment. • List basic safety checks to be undertaken before operating any tools and equipment. • Describe the common first aid procedures to be followed in case of emergencies. • Describe standard procedures to deal with accidents and emergencies. • State various recommended prophylactic measures to prevent disease among cultured organisms. 	<ul style="list-style-type: none"> • Show how to eliminate common predators and preying organisms from the water body. • Demonstrate the process of erecting fences to protect the water body from external threats. • Demonstrate the process of cleaning and decontaminating the nets, vessels, tools and equipment. • Demonstrate personal hygiene practices to be followed. • Demonstrate the correct way of washing hands using soap and water, and alcohol-based hand rubs. • Demonstrate the administration of first aid. • Show how to apply the necessary medicines/ chemicals as per prescription, maintaining the toxicity levels within the prescribed limits. • Demonstrate the process of using therapeutic practices for the speedy recovery of diseased organisms. • Demonstrate the process of disposing dead and diseased organisms.

- Describe the process of examining the cultured organisms to detect the symptoms of parasites, pathogenic infections, phenotypic disorders, etc.
- Describe the process of applying medicines/ chemicals while maintaining the toxicity levels within the prescribed limits.
- Describe the process of identifying diseased organisms, quarantining and treating them.
- Explain the importance and process of removing and disposing the dead and moribund organisms from the water body.

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: Process of managing and leading a team

Mapped to NOS AGR/N9923 v2.0

Terminal Outcomes:

- Explain different ways to manage team performance and maintain a fair and professional work environment.
- Explain different ways to promote diversity and inclusion at work.

Duration: 15:00	Duration: 15:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Describe the process of preparing a work plan and allocating tasks according to the roles and skills of team members. • Explain the importance of arranging necessary support and resources to help the team members perform their duties. • Explain the importance of conducting regular team meetings to communicate with the team members regarding their work objectives, projects, work progress, etc. • Explain the importance and process of monitoring the team performance. • Explain various practices to manage and improve team performance. • Explain the importance of maintaining professional relationships with the team members. • Explain the importance and process of resolving conflicts among the team members. • Define the need for appropriate verbal and non-verbal communications while interacting with all genders and PwD. 	<ul style="list-style-type: none"> • Prepare a sample work plan according to allocate tasks to the team members. • Roleplay to conduct counselling sessions with team members. • Prepare sample work performance and review reports. • Demonstrate various practices required to maintain a conducive environment for Persons with Disabilities (PwD) and all genders at work.
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and Software, Facilitator's Guide, Participant's Handbook.	
Tools, Equipment and Other Requirements	
NA	

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	
B.F. Sc		4	In Fisheries Science / Aquaculture / Applied aquaculture or related EXPERIENCE and fields	0		Practical skills and knowledge required in seed production of aquatic organisms
Graduation	Fisheries and related streams	5	In Fisheries Science / Aquaculture / Applied aquaculture or related EXPERIENCE and fields	0		Practical skills and knowledge required in seed production of aquatic organisms
M.F. Sc		2	In Fisheries Science / Aquaculture / Applied aquaculture or related EXPERIENCE and fields	0		Practical skills and knowledge required in seed production of aquatic organisms
Post-Graduation	Fisheries/ Applied Aquaculture and related streams	2	In Fisheries Science / Aquaculture / Applied aquaculture or related EXPERIENCE and fields	0		Practical skills and knowledge required in seed production of aquatic organisms
Trainer Certification						
Domain Certification				Platform Certification		
Certified for Job Role “Fish Seed Grower”, mapped to QP: “AGR/Q4908, v4.0”, 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”. 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	
B.F. Sc		4	In Fisheries Science / Aquaculture / Applied aquaculture or related EXPERIENCE and fields	0		Practical skills and knowledge required in seed production of aquatic organisms
Graduation	Fisheries and related streams	5	In Fisheries Science / Aquaculture / Applied aquaculture or related EXPERIENCE and fields	0		Practical skills and knowledge required in seed production of aquatic organisms
M.F. Sc		2	In Fisheries Science / Aquaculture / Applied aquaculture or related EXPERIENCE and fields	0		Practical skills and knowledge required in seed production of aquatic organisms
Post-Graduation	Fisheries/ Applied Aquaculture and related streams	2	In Fisheries Science / Aquaculture / Applied aquaculture or related EXPERIENCE and fields	0		Practical skills and knowledge required in seed production of aquatic organisms
PhD	Fisheries Science/ Aquaculture and related streams	1	In Fisheries Science / Aquaculture / Applied aquaculture or related EXPERIENCE and fields	0		Practical skills and knowledge required in seed production of aquatic organisms

Assessor Certification	
Domain Certification	Platform Certification
“Fish Seed Grower”, “AGR/Q4908, v4.0”, Minimum accepted score is 80%	Certified for the Job Role: “Assessor (Vet and Skills)”, mapped to the Qualification Pack: “MEP/Q2701, v2.0”, with a minimum score of 80%.

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 empaneled 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.

An individual must have adequate knowledge and skills to perform a specific task, weightage for different aspects of the assessment is 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 empaneled 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 the 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 practice 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 questions, 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 a greater 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 the 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:

- GeoTagging 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 is 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 have 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 were 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 is downloaded by our internal backend team and saved in Repository. The repository consists of scheme-wise folders. These scheme-wise folders have two 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
Declarative Knowledge	Declarative knowledge refers to facts, concepts and principles that need to be known and/or understood in order to accomplish a task or to solve a problem.
Key Learning Outcome	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 task. It is the ability to work, or produce a tangible work output by applying cognitive, affective or psychomotor skills.
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