Model Curriculum

QP Name: Aquarium Technician

QP Code: AGR/Q5108

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

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Training Parameters

Sector	Agriculture
Sub-Sector	Fisheries
Occupation	Assistance (Fisheries)
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/NIL
Minimum Educational Qualification and Experience	Minimum Educational Qualification: 12th grade pass OR Completed 2nd year of 3-year diploma (after 10th) and pursuing regular diploma OR 10th grade pass plus 2-year NTC OR 10th grade pass plus 1-year NTC plus 1 year NAC OR 8th pass plus 2-year NTC plus 1-Year NAC plus CITS OR 10th grade pass and pursuing continuous schooling OR 10th Grade Pass with 2-year relevant experience OR Previous relevant Qualification of NSQF Level 3.0 with minimum education as 8th Grade pass with 3- year relevant experience OR Previous relevant Qualification of NSQF Level 3.5 with 1.5- year relevant experience
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	24-02-2022
Next Review Date	24-02-2025
NSQC Approval Date	24-02-2022
QP Version	3.0

Model Curriculum Creation Date	24-02-2025
Model Curriculum Valid Up to Date	24-02-2025
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:

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
Bridge Module	**05:00**	**00:00**	**0:00**	**0:00**	**05:00**
Module 1: Introduction to the role of an Aquarium Technician	05:00	0:00	0:00	0:00	05:00
AGR/N5115: Set up and manage marine aquarium **NOS Version- 2.0** **NSQF Level- 4**	**35:00**	**50:00**	**0:00**	**00:00**	**85:00**
Module 2: Process of setting up and maintaining marine aquariums	35:00	50:00	0:00	00:00	85:00
AGR/N5116: Set up and manage freshwater aquarium (including garden ponds) **NOS Version- 2.0** **NSQF Level- 4**	**35:00**	**55:00**	**0:00**	**00:00**	**90:00**
Module 3: Process of setting up and maintaining freshwater aquariums (including garden ponds)	35:00	55:00	0:00	00:00	90:00

AGR/N5117: Ensure safety, hygiene and sanitation practices in aqua scaping **NOS Version- 2.0** **NSQF Level- 4**	**15:00**	**15:00**	**0:00**	**00:00**	**30:00**
Module 4: Hygiene and cleanliness	03:00	03:00	0:00	0:00	06:00
Module 5: Safety and emergency procedures	12:00	12:00	0:00	0:00	24:00
DGT/VSQ/N0103 **Employability Skills** **NOS Version-1.0** **NSQF Level-5**	**90:00**	**00:00**	**0:00**	**0:00**	**90:00**
Module 6: Employability Skills	90:00	00:00	0:00	0:00	90:00
Total Duration	**180:00**	**120:00**	**0:00**	**00:00**	**300:00**
OJT: 90 hours					

Module Details

Module 1: Introduction to the role of an Aquarium Technician
Bridge Module

Terminal Outcomes:

- Identify the roles and responsibilities of 'Aquarium Technician'.

Duration: 05:00	Duration: 0:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- Discuss the general discipline in the class room (Do's & Don'ts) - Explain the scope & importance of freshwater ornamental fishes of India - Describe the role of Aquarium Technician and the progression pathways - Explain the between freshwater aquarium, marine aquarium, and garden ponds.	- Identify different freshwater/marine ornamental finfish/shellfish. - Identify the equipment required for setting up of the aquarium.
Classroom Aids	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films	
Tools, Equipment and Other Requirements	
NA	

Module 2: Process of setting up and maintaining marine aquariums
Mapped to AGR/N5115 v2.0

Terminal Outcomes:

- Set up and maintain marine aquarium

Duration: 35:00	Duration: 50:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- Discuss about routine maintenance and care required for the running of a marine aquarium - Explain the diseases and other harmful growth within the system - Describe various parameters of the water – pH, ammonia, nitrites and salinity with optimum levels - Describe the various components of marine aquarium and its importance - Explain about various species of marine ornamental fishes and invertebrates - Explain the nutritional requirements and feed frequency of various marine species and invertebrates - Explain about the national laws on keeping of marine organisms in captivity - Explain the industry standards, process standards and procedures followed by the ornamental fishing industry - Explain the process of acclimatising the fish and reef before being placed in the aquarium - Explain safety and hygiene precautions to be taken during all stages - Explain the role of various organisms of the reef system that balance the ecosystem of a marine aquarium - Explain various gadget employed in marine aquarium - Explain the importance of synthetic salts and artificial sea water for marine aquariums - Explain various types of marine aquarium - Explain the concept of fish compatibility and list few compatible species - Explain the benefits and process of stocking organisms in the aquarium that consume ectoparasites and feed residues	- Identify the freshwater and marine ornamental fishes both indigenous and exotic. - Identify other organisms in an aquarium other than fishes like corals, crustaceans, molluscs and their maintenance in an aquarium. - Identify the other components of the aquarium like aerators, filters, protein skimmers, live and artificial ornamental plants etc. - Identify the equipment and protocols of aquarium keeping. - Source all the components of the marine aquarium required - Set up the complete aquarium structure with air inlets, lighting, filtration - Demonstrate the procedure to maintain the aquarium in a sustainable condition with proper water quality and functioning of the filters - Diagnose the problem/disease and treat to fishes if any. - Demonstrate how to monitor the condition of fish in the hospital tank and use appropriate medicines for improvement. - Demonstrate how to maintain reef system - Demonstrate the procedure to operate filtration pumps, heating and lighting - Demonstrate the procedure to sanitize and acclimatise the relevant items to avoid contamination - Demonstrate the disposal of waste and dead fish - Demonstrate the measures to be taken to prevent the growth of parasites and undesirable growth in the aquarium - Demonstrate the preparation of artificial sea water using synthetic salts

• Explain the process of sampling aquarium water to check the pH, ammonia, nitrite and salinity levels • Explain the importance of using protein skimmers and filtration equipment to ensure the removal of waste matter and optimum water quality in the aquarium • Explain various health and disease management practices for fish such as identification of the symptoms of stress and common diseases, quarantining and treating the diseased or dying fish, monitoring the quarantined fish for signs of improvement, etc.	•

Classroom Aids

Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop

Tools, Equipment and Other Requirements

Audio Visual Aids, Water Pump, Air Or Oxygen Diffusers, Aerators, Mechanical Filters - Like Leaf Filters, Chemical And Biological Filters, Protein Skimmer, UV Steriliser, Water Analysis Meters, Ph Meter, Salinometer, Tubes, Power Backup, PVC Pipes. Glass Tanks, Silicon Glue, Sea Water, Fishes, Live Coral, Scissors, Water Testing Kit, Buckets, Forceps, Dropper, Tissue Paper, Syringes, Simple Microscope, , Power Backup, Medicines, Hospital Tanks, Additional Glass Tanks, Medicines. Siphoning Pipes, Aeration Pipes, Simple Microscope.

Module 3: Process of setting up and maintaining freshwater aquariums (including garden ponds)

Mapped to ARG/N5116 v2.0

Terminal Outcomes:

- Set up and maintain freshwater aquarium or garden pond

Duration: 35:00	Duration: 55:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- Explain the process of cleaning prior to introducing various aquascaping artefacts, natural and synthetic, of the proposed aquarium - Explain various resources required to set up a freshwater aquarium as per finalized specification and their use - Explain the benefit of sanitization of aquarium and their relevant components before assembling - Describe the process of routine maintenance and care required for the running of a fresh water aquarium - Discuss the diseases and other harmful growth within the system - Explain the nutritional requirements and feeding schedule for various freshwater ornamental fishes - Explain the compatibility of fish species and list few compatible species - Explain industry standards, process standards and procedures followed by the ornamental fishing industry - Describe the process of acclimatization of the fish and reef before placing in the aquarium - Describe the process of setting up a freshwater aquarium - Explain recommended stocking density to be maintained for varieties of aquarium fish - Explain the benefits and process of stocking organisms in the aquarium that consume ectoparasites and feed residues - Explain safety and hygiene precautions to be taken during setup and maintenance of aquarium - Explain different types of aquatic plants used in a planted aquarium	- Set up the complete aquarium structure with air inlets, lighting, plants and filtration system - Identify different types of commercially important freshwater ornamental fishes. - Identify different types of aquatic plants used in a planted aquarium - identify and quarantine the diseased or dying fish - Identify the prohibited varieties of freshwater ornamental fishes that cannot be traded - Show how to maintain proper working of filters for removing waste matter - Demonstrate the procedure to maintain water quality of the aquarium - Show how to monitor for any undesirable growth, parasites or anything that may threaten the balance of the aquarium - Demonstrate the set up and operation of various timers for operating lighting and heating systems, if any. - Demonstrate the use water conditioners to remove traces of chlorine etc. from the water to be used in the aquariums - Demonstrate how to maintain proper health and biosecurity of the system - Diagnose the problem/disease and treat appropriately - Identify and separate the diseased fish from the healthy fish and put them in a hospital tank , in case of disease outbreak - Assess the condition of fish in the hospital tank for signs of improvement - Design a garden pond as per requirements

• Explain about the suitable type of water quality monitoring, life support systems and decorative items in aquarium.	• Demonstrate the procedure to construct a garden pond • Demonstrate the introduction of suitable varieties of plants, fish and other animals for decorating and keeping in garden pond • Show how to maintain a garden pond • Demonstrate the procedure to clean and sanitize the aquarium • Demonstrate the disposal of waste and dead fish

Classroom Aids

Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop

Tools, Equipment and Other Requirements

Audio Visual Aids, Water Pump, Air Or Oxygen Diffusers, Aerators, Mechanical Filters - Like Leaf Filters, Chemical And Biological Filters, Protein Skimmer, UV Steriliser, Water Analysis Meters, Ph Meter, Salinometer, Tubes, Power Backup, PVC Pipes. Glass Tanks, Silicon Glue, Sea Water, Fishes, Live Coral Etc, Scissors, Water Testing Kit, Buckets, Forceps, Dropper, Tissue Paper, Syringes,   Simple Microscope, , Power Backup, Medicines, Hospital Tanks, Additional Glass Tanks, Medicines. Siphoning Pipes, Aeration Pipes.

Module 4: Hygiene and cleanliness

Mapped to NOS AGR/N5117 v2.0

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**
- 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.	- 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 the 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 5: Safety and emergency procedures
Mapped to NOS AGR/N5117 v2.0

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**
- 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 damage s 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.	- Check various areas of the workplace for leakages, waterlogging, pests, fire, etc. - Demonstrate how to safely use the PPE and implements it 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 6: Employability Skills (90 hours)
Mapped to NOS DGT/VSQ/N0103 v1.0

Duration: 90:00
Key Learning Outcomes

 Introduction to Employability Skills Duration: 3 Hours
After completing this programme, participants will be able to:
1. Outline the importance of Employability Skills for the current job market and future of work
2. List different learning and employability related GOI and private portals and their usage
3. Research and prepare a note on different industries, trends, required skills and the available opportunities

Constitutional values - Citizenship Duration: 1.5 Hours
4. 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
5. Demonstrate how to practice different environmentally sustainable practices

Becoming a Professional in the 21st Century Duration: 5 Hours
6. Discuss relevant 21st century skills required for employment
7. Highlight the importance of practicing 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
8. Create a pathway for adopting a continuous learning mindset for personal and professional development

Basic English Skills Duration: 10 Hours
9. Show how to use basic English sentences for everyday conversation in different contexts, in person and over the telephone
10. Read and understand text written in basic English
11. Write a short note/paragraph / letter/e -mail using correct basic English

Career Development & Goal Setting Duration: 4 Hours
12. Create a career development plan
13. Identify well-defined short- and long-term goals

Communication Skills Duration: 10 Hours
14. Demonstrate how to communicate effectively using verbal and nonverbal communication etiquette
15. Write a brief note/paragraph on a familiar topic
16. Explain the importance of communication etiquette including active listening for effective communication
17. Role play a situation on how to work collaboratively with others in a team

Diversity and Inclusion Duration: 2.5 Hours
18. Demonstrate how to behave, communicate, and conduct appropriately with all genders and PwD
19. Discuss the significance of escalating sexual harassment issues as per POSH act

Financial and Legal Literacy Duration: 10 Hours

20. Discuss various financial institutions, products, and services
21. Demonstrate how to conduct offline and online financial transactions, safely and securely and check passbook/statement
22. Explain the common components of salary such as Basic, PF, Allowances (HRA, TA, DA, etc.), tax deductions
23. Calculate income and expenditure for budgeting
24. Discuss the legal rights, laws, and aids

Essential Digital Skills Duration: 20 Hours

25. Describe the role of digital technology in day-to-day life and the workplace
26. Demonstrate how to operate digital devices and use the associated applications and features, safely and securely
27. Demonstrate how to connect devices securely to internet using different means
28. Follow the dos and don'ts of cyber security to protect against cyber crimes
29. Discuss the significance of displaying responsible online behavior while using various social media platforms
30. Create an e-mail id and follow e- mail etiquette to exchange e -mails
31. Show how to create documents, spreadsheets and presentations using appropriate applications
32. utilize virtual collaboration tools to work effectively

Entrepreneurship Duration: 7 Hours

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

Customer Service Duration: 9 Hours

37. Classify different types of customers
38. Demonstrate how to identify customer needs and respond to them in a professional manner
39. Discuss various tools used to collect customer feedback
40. Discuss the significance of maintaining hygiene and dressing appropriately

Getting ready for apprenticeship & Jobs Duration: 8 Hours

41. Draft a professional Curriculum Vitae (CV)
42. Use various offline and online job search sources to find and apply for jobs
43. Discuss the significance of maintaining hygiene and dressing appropriately for an interview
44. Role play a mock interview
45. List the steps for searching and registering for apprenticeship opportunities

Module 7: On-the-Job Training
Mapped to Aquarium Technician

Mandatory Duration: 90:00	Recommended Duration: 00:00
Location: On Site	

Terminal Outcomes

1. Demonstrate the set up and maintenance of marine aquarium

2. Demonstrate the measures for proper health management of fish in marine aquarium

3. Demonstrate the set up and maintenance of freshwater aquarium, planted aquarium and garden ponds

4. Demonstrate the measures for proper health management of fish in freshwater aquarium, planted aquarium and garden ponds

5. Design the agricultural enterprise/business plan

6. Show how to manage agricultural production process

7. Demonstrate the post-production and marketing processes

8. Demonstrate the employability practices

9. Demonstrate the entrepreneurial practices

10. Show how to communicate effectively at the workplace

11. Show how to mentor apprentice

12. Demonstrate inclusive practices at workplace

13. Demonstrate personal hygiene and safety practices

14. Demonstrate biosecurity protocols e in marine and freshwater aquariums (including garden ponds)

Annexure

Trainer Requirements

Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
10th class		5	Ornamental Fishery Rearing and Aquarium management			Aquarium Technician with 5 Years' experience of working with registered Corporates or Not for Profit Organizations after 10th Pass
Diploma	Fisheries	3	Ornamental Fishery Rearing and Aquarium management			Regular Diploma more than 15 months in fishries
Graduate	Zoology	3	Ornamental Fishery Rearing and Aquarium management			For school Program minimum qualification of Trainer should be Graduate (Fisheries Science/Industrial Fish & Fisheries/Zoology). Their Teaching experience will be considered industry experience
Graduate	Agriculture	2	Ornamental Fishery Rearing and Aquarium management			
Graduate	Fisheries and related stream	0	Ornamental Fishery Rearing and Aquarium management			

Trainer Certification	
Domain Certification	**Platform Certification**
Certified for Job Role " **Aquarium Technician**", mapped to QP: "AGR/Q5108, v2.0", 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

Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training/Assessment Experience		Remarks
		Years	Specialization	Years	Specialization	
B.F. Sc		4	In Fisheries Science/Zoology/Aquaculture/Applied aquaculture/Marine Biology or related streams	0		Practical skills and knowledge required in raising fish and marine plants for food and recreational purposes
B. Tech	Fisheries Engineering and related streams	4	In Fisheries Science/Zoology/Aquaculture/Applied aquaculture/Marine Biology or related streams	0		Practical skills and knowledge required in raising fish and marine plants for food and recreational purposes
B. Sc	Fisheries and related streams	5	In Fisheries Science/Zoology/Aquaculture/Applied aquaculture/Marine Biology or related streams	0		Practical skills and knowledge required in raising fish and marine plants for food and recreational purposes
M. Tech	Aqua cultural Engineering/ Fisheries engineering and related streams	2	In Fisheries Science/Zoology/Aquaculture/Applied aquaculture/Marine Biology or related streams	0		Practical skills and knowledge required in raising fish and marine plants for food and recreational purposes
M. F. Sc		2	In Fisheries Science/Zoology/Aquaculture/Applied aquaculture/Marine Biology or related streams	0		Practical skills and knowledge required in raising fish and marine plants for food and recreational purposes
M Sc	Fisheries and related streams	2	In Fisheries Science/Zoology/Aquaculture/Applied aquaculture/Marine Biology or related streams	0		Practical skills and knowledge required in raising fish and marine plants for food and recreational purposes
PhD	Fisheries Science and related streams	1	In Fisheries Science/Zoology/Aquaculture/Applied aquaculture/Marine Biology or related streams	0		Practical skills and knowledge required in raising fish and marine plants for food and recreational purposes

(The above table spans under the header "Assessor Prerequisites")

Assessor Certification	
Domain Certification	**Platform Certification**
Certified for Job Role " **Aquarium Technician**", mapped to QP: "AGR/Q5108, v1.0", 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. <u>Multiple Choice Questions</u>: To assess basic knowledge (Objective/Subjective)
2. <u>Viva:</u> To assess awareness on processes (Oral and/or written questioning)
3. <u>Practical:</u> 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 are 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 is 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:

- 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

- o Assessment checklist for assessor
- o Candidate Aadhar/ID card verification
- o Pictures of the classroom, labs to check the availability of adequate equipment's and tools to conduct the training and assessment
- o 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 the assessor and proctor are 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

- <u>Morning Check (Pre-Assessment)</u>: 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.

- <u>Video Calls</u>: 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

- <u>Aadhar verification</u> of candidates

- <u>Evening Check (Post Assessment)</u>: Calls are made to the ground team to ensure the event is over by what time and the documentation is done properly or not.

- <u>TP Calling</u>: 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

- <u>Video and Picture Evidence</u>: 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.

- <u>Surprise Visit</u>: 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.

- <u>Geo Tagging</u>: 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

- • 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 candidates 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	The 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	The 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
DSR	Direct Seeded Rice
ETL	Economic Threshold Levels
HDPE	High-Density Polyethylene
IPM	Integrated Pest Management
NOS	National Occupational Standard (s)
NSQF	National Skills Qualifications Framework
OJT	On-the-job Training
PP	Polypropylene
PHI	Protected Health Information
PwD	People with Disability
PPE	Personal Protective Equipment
QP	Qualifications Pack
SRI	System of Rice Intensification