Model Curriculum

QP Name: Coldwater Aquaculture Farmer

QP Code: AGR/Q4914

Version: 2.0

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 and Allied Industry
Sub-Sector	Fisheries
Occupation	Aquaculture
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/6111.0800
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	11-08-2020
Next Review Date	11-08-2025
NSQC Approval Date	11-08-2020
QP Version	2.0
Model Curriculum Creation Date	11-08-2020
Model Curriculum Valid Up to Date	11-08-2025

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:

- Prepare for Coldwater aquaculture.
- Culture fish.
- Maintain the fish's health.
- Harvest and market the fish.

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**	**0:00**	**0:00**	**00:00**	**5:00**
Module 1: Introduction to the role of Coldwater Aquaculture farmer.	05:00	0:00	0:00	00:00	5:00
AGR/N4946 Prepare for Coldwater aquaculture NOS Version- 2.0 NSQF Level-4	**25:00**	**30:00**	**0:00**	**00:00**	**55:00**
Module 2: Preparation of water body for Coldwater aquaculture	25:00	30:00	0:00	00:00	55:00
AGR/N4947 Carry out Coldwater aquaculture NOS Version- 2.0 NSQF Level-4	**25:00**	**65:00**	**0:00**	**00:00**	**90:00**
Module 3: Carrying out cold water aquaculture	25:00	65:00	0:00	00:00	90:00
AGR/N4948 Harvest and market fish NOS Version- 2.0 NSQF Level-3	**20:00**	**40:00**	**0:00**	**00:00**	**60:00**
Module 4: Process of harvesting & Marketing	20:00	40:00	0:00	00:00	60:00

AGR/N4918 Ensure safety, hygiene, and sanitation practices for culture operations **NOS Version- 3.0** **NSQF Level-4**	**15:00**	**15:00**	**0:00**	**00:00**	**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**	**00:00**	**60:00**
Module 7: Employability Skills	60:00	00:00	0:00	00:00	60:00
Total Duration	**150:00**	**150:00**	**0:00**	**00:00**	**300:00**
OJT: 90 Hours					

Module Details

Module 1: Introduction to the role of Cold Water Aquaculture Farmer.

Bridge Module

Terminal Outcomes:

- Discuss the job role of a temperate fruit grower.

Duration: 05:00	Duration: 0:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the importance, size and scope of coldwater aquaculture. • State various employment and business opportunities in coldwater aquaculture. • State the role and responsibilities of a Coldwater aquaculture farmer.	
Classroom Aids	
Training Kit (Presentations, Trainer Guide).	
Tools, Equipment and Other Requirements	
NA	

Module 2: Preparation of water body for Coldwater aquaculture.

Mapped to AGR//N4946 v3.0

Terminal Outcomes:

- Demonstrate the process of Coldwater aquaculture preparation.

Duration: 25:00	Duration: 30:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- State the advantages and disadvantages of coldwater aquaculture. - Describe the conditions suitable for coldwater aquaculture. - State the licensing requirements for coldwater aquaculture. - Describe the site requirements for coldwater aquaculture. - Describe the soil requirements to support coldwater aquaculture. - Interpret the results of the tests required to assess the soil conditions. - State the criteria to identify the quantity of fish/organism to be reared such as demand, budget and site constraints - Describe the process and requirements for the construction of pond/tank/raceway for coldwater aquaculture. - State the importance of installing dykes and fences - Explain the need for a wire mesh on the inlet and outlet of the pond. - Demonstrate the installation of strong dykes and fences to avoid entry of predatory animals and theft of fish/ organism. - Demonstrate the installation of wire mesh that secures the inlet and outlet of the pond. - Explain the various pond treatment activities to be carried out prior to stocking and their importance. - Demonstrate the various pond treatment activities. - Explain the importance of drying the tank after the treatment.	- List the species and varieties of fish/organism, viz. rainbow trout, etc, suitable for farming in different types of coldwater bodies and conditions. - Identify suitable material for the construction of pond/tank/raceway. - List the materials and tools required for preparation of water body for coldwater aquaculture. - Demonstrate how the total pond area is divided into nursery pond, rearing tank, stocking pond, bio-treatment pond and harvesting pond. - Demonstrate construction of pond/tank/raceway for coldwater aquaculture. - Demonstrate removal of unwanted objects from the site.
Classroom Aids	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	

Water pump, Air or Oxygen diffusers, Aerators, Mechanical filters, Tubers, Power backup, Grinder, Mixer, Pelletiser

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N·S·D·C
National
Skill Development
Corporation
Transforming the skill landscape

Module 3: Carrying out cold water aquaculture.

Mapped to ARG/N4947 v2.0

Terminal Outcomes:

- Demonstrate the process of Coldwater aquaculture.

Duration: 25:00	Duration: 65:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- Explain inbreeding depression and the need to extract fresh fish seed from natural sources to avoid inbreeding depression. - State the indigenous and exotic ornamental fish for which seeds will have to be procured. - Explain the indicators for identifying healthy and fast-growing fish/organism. - Explain the measures adopted to maintain correct stocking density. - Describe the criteria for selecting the correct method for stocking and maintaining optimum stock density. - Describe the growth cycle of the various coldwater aquaculture fish/organisms. - Describe various rearing activities to be performed in coldwater aquaculture at various life stages of the fish/organism. - Explain the need and composition of manure for soil in the water body. - State the nutritional requirements and feeding practices of the common cage culture fish species at various stages of growth. - Describe the methods of preparing and storing the feed. **Describe the indicators of growth and health at various stages of growth** - Describe common diseases and their treatments for common coldwater aquaculture fish/organism. - State the common sources of bacterial and other contamination to the fish. - Describe the signs of stress and disease amongst fish/ organism. - Explain the need and process of monitoring the water body for signs of stress and disease amongst the fish/ organism. - Describe the labelling and storage procedures for medicines and chemicals.	- List authorised agencies for procurement of healthy seeds. - Define stocking density. - Demonstrate various methods of stocking spawn in the nursery pond while maintaining optimum stock density. - Demonstrate the safe transfer of fry from the nursery pond into the rearing pond. - Demonstrate the safe transfer of fingerlings from the rearing pond into the stocking pond. - Demonstrate the application of manure in the water body as per requirement. - Prepare fish feed maintaining the required levels of nutrition, for the common cage culture fish species at various stages of growth. - Demonstrate the process of feeding fish. - Identify health indicators for effective monitoring of fish health. - Demonstrate the process of sampling fish to check their length, weight, health indicators and identify growth stage. - Demonstrate how to apply treatment to fish/organism in the water body. - List the necessary medicines and their appropriate dose for use during coldwater aquaculture. - Demonstrate the application of necessary treatment to cure diseases identified in culture. - Demonstrate the actions to be taken in case of disease outbreak in the water body. - Demonstrate the raking of the water body bottom remove dead fish/ organism and other sources of contamination.

- Describe the growth enhancement practices that can be adopted for fish in coldwater aquaculture.

Classroom Aids
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop
Tools, Equipment and Other Requirements
Training Kit (Presentations, Trainer Guide), Polypropylene tanks, Ropes, Threads, autoclave, Water testing kit, siphoning pipes, Portable DC chargeable battery-operated aerators, Aeration pipes, Ph meter, Siphoning pipes, Portable DC chargeable battery-operated aerators, Aeration pipes, pH meter.

Module 4: Process of harvesting & Marketing

Mapped to NOS AGR/N4948 v2.0

Terminal Outcomes:

- Discuss how harvest fishes.
- Demonstrate different ways of Marketing.

Duration: 06:00	Duration: 16:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- Describe the factors impacting fish growth and indicators of their readiness for harvesting. - Describe the do's and don'ts to be followed during fish harvesting. - Describe the quality parameters for sorting of harvested fish. - Describe the methods for sorting and grading. - Describe the various hazards to fish produce during storage and transportation. - Describe the various procedures adopted to protect the harvested fish during storage and transportation. - State the considerations for safe and timely transportation of fish to the buyers/aggregators. - Describe the key principles and groundwork for effective negotiation of the price of harvested fish. - Describe the procedure and precautions while taking various modes of payment from buyers/aggregators.	- Demonstrate harvesting of fish in a safe manner. - Demonstrate the process of sorting harvested fish based on the specified quality parameters. - Demonstrate different ways of grading the sorted fish. - Demonstrate the procedure of discarding the damaged and infected fish in compliance with the local legislations. - Demonstrate maintenance of records of the harvested fish. - List the equipment and facilities required for storage and transportation of fish. - Demonstrate the storage and transportation procedures for the harvested fish. - Identify the demand and market rate for the harvested fish. - Identify fish buyers and aggregators for domestic and international sales. - Demonstrate the negotiation techniques to arrive at an appropriate price with the buyer. - Discuss the ways to maintain sale records. - Prepare sale records using a set of sample data. - Calculate the benefit-cost ratio (BCR) ratio for the cage culture operations
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and Software, Facilitator's Guide, Participant's Handbook.	
Tools, Equipment and Other Requirements	
PPE, bags, hand nets, cast nets, dip nets, hand gloves, boots, head gear, autoclave, transport vehicle with water storage capacity, oxygen cylinders, ropes, siphoning pipes etc.	

Module 5: Hygiene and cleanliness
Mapped to NOS AGR/N9903 v3.0

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 6: Safety and emergency procedures

Mapped to NOS AGR/N9903 v3.0

Terminal Outcomes:

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

Duration: 17:00	Duration: 07:00
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, water-logging, 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 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

<table>
<tr><th colspan="6">Trainer Prerequisites</th></tr>
<tr><th rowspan="2">Minimum Educational Qualification</th><th rowspan="2">Specialization</th><th colspan="2">Relevant Industry Experience</th><th colspan="2">Training Experience</th><th rowspan="2">Remarks</th></tr>
<tr><th>Years</th><th>Specialization</th><th>Years</th><th>Specialization</th></tr>
<tr><td>10th Class</td><td></td><td>5</td><td>Fishery Production and management</td><td>0</td><td></td><td>Fresh Water Aquaculture farmer/Brackish Water Aqua Culture farmer with 5 Years of experience after 10th pass. Experience certificate issued by BDO/ Agriculture Officer/ Head of Gram panchayat/ Loan disbursing bank or financial institution/ registered fisheries society/ State department of fisheries on official letter Head</td></tr>
<tr><td>Diploma</td><td>Regular Diploma more than 15 months in fisheries</td><td>3</td><td>Fishery Production and management</td><td>0</td><td></td><td></td></tr>
<tr><td>B. Sc.</td><td>Zoology</td><td>3</td><td>Fishery Production and management</td><td>0</td><td></td><td>For the school Program minimum qualification of the Trainer should be Graduate (Fisheries Science/Industrial Fish & Fisheries/Zoology). Their Teaching experience will be considered industry experience</td></tr>
<tr><td>B. Sc.</td><td>Agriculture / Fisheries</td><td>2</td><td>Fishery Production and management</td><td>0</td><td></td><td></td></tr>
<tr><th colspan="6">Trainer Certification</th></tr>
<tr><th colspan="3">Domain Certification</th><th colspan="3">Platform Certification</th></tr>
<tr><td colspan="3">Certified for Job Role " Coldwater Aquaculture Farmer " mapped to QP: "AGR/Q4914, v2.0", Minimum accepted score is 80%</td><td colspan="3">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%.</td></tr>
</table>

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training/Assessment Experience**		**Remarks**
		Years	*Specialization*	*Years*	*Specialization*	
Graduation	B.F. Sc	4	In Fisheries Science/ Aquaculture/ Applied aquaculture/ or related experience	0		Practical skills and knowledge required in Cold water Aquaculture practices
Graduation	B. Sc (Fisheries and related streams	5	In Fisheries Science/ Aquaculture/ Applied aquaculture/ or related experience	0		Practical skills and knowledge required in Cold water Aquaculture practices
Post-Graduation	M. F. Sc	2	In Fisheries Science/ Aquaculture/ Applied aquaculture/ or related experience	0		Practical skills and knowledge required in Cold water Aquaculture practices
Post-Graduation	M.Sc (Fisheries/ Applied Aquaculture and related streams)	2	In Fisheries Science/ Aquaculture/ Applied aquaculture/ or related experience	0		Practical skills and knowledge required in Cold water Aquaculture practices
PhD	PhD (Fisheries Science/ Aquaculture and related streams)	1	In Fisheries Science/ Aquaculture/ Applied aquaculture/ or related experience	0		Practical skills and knowledge required in Cold water Aquaculture practices

Assessor Certification	
Domain Certification	**Platform Certification**
Certified for Job Role " Coldwater Aquaculture Farmer " mapped to QP "AGR/Q4914, v2.0", Minimum accepted score is 80%	Certified for the Job Role: "Assessor (Vet and Skills)", mapped to the Qualification Pack: "MEP/Q2601, 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 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 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

- 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

- 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 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	The 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
AIS	Automatic Identification System
GPS	Global Positioning System
NOS	National Occupational Standard (s)
NSQF	National Skills Qualifications Framework
OJT	On-the-job Training
OEM	Original Equipment Manufacturer
PwD	People with Disability
PPE	Personal Protective Equipment
QP	Qualifications Pack
VHF	Very High Frequency