



# Model Curriculum

**QP Name: Artificial Insemination Technician**

**QP Code: AGR/Q4803**

**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

<b>Sector</b>	Agriculture
<b>Sub-Sector</b>	Animal Husbandry
<b>Occupation</b>	Artificial Insemination Technician
<b>Country</b>	India
<b>NSQF Level</b>	4
<b>Aligned to NCO/ISCO/ISIC Code</b>	NCO-2015/NILL
<b>Minimum Educational Qualification and Experience</b>	<p>Minimum Educational Qualification: 12th Class</p> <p>OR</p> <p>10th Class with 2 Year of relevant experience</p> <p>OR</p> <p>Previous relevant qualification of NSQF Level 3 and with minimum education as 5th grade pass with 2 Year relevant experience</p> <p>Age: 18 Years</p>
<b>Pre-Requisite License or Training</b>	NA
<b>Minimum Job Entry Age</b>	18 Years
<b>Last Reviewed On</b>	17/11/2022
<b>Next Review Date</b>	17/11/2025
<b>NSQC Approval Date</b>	17/11/2022
<b>QP Version</b>	3.0
<b>Model Curriculum Creation Date</b>	17/11/2022
<b>Model Curriculum Valid Up to Date</b>	17/11/2025
<b>Model Curriculum Version</b>	2.0
<b>Minimum Duration of the Course</b>	510 Hours
<b>Maximum Duration of the Course</b>	510 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:

- Provide preventive care to livestock and poultry as per the guideline of the Veterinarian.
- Provide primary first aid / essential curative treatment to livestock and poultry.
- Assist public agencies in animal disease control
- Assist in animal husbandry extension
- Assist in the implementation of guidelines related to animal welfare
- Assist in breed conservation
- Assist in disaster management
- Assist in the implementation of development programs.
- Assist in marketing livestock farm inputs and products
- Assist in the implementation of animal breeding services in small farm animals as per guidelines.

### 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
<b>Bridge Module</b>	<b>05:00</b>	<b>00:00</b>	<b>0:00</b>	<b>0:00</b>	<b>05:00</b>
Module 1: Introduction to the role of an Artificial Insemination Technician	05:00	00:00	0:00	0:00	05:00
<b>AGR/N4805: Veterinary First Aid</b> <b>NOS Version- 2.0</b> <b>NSQF Level- 4</b>	<b>15:00</b>	<b>40:00</b>	<b>0:00</b>	<b>00:00</b>	<b>55:00</b>
Module 2: Veterinary First Aid	15:00	40:00	0:00	00:00	55:00
<b>AGR/N4808: Assisting in veterinary extension services</b> <b>NOS Version-2.0</b> <b>NSQF Level-4</b>	<b>20:00</b>	<b>40:00</b>	<b>0:00</b>	<b>00:00</b>	<b>60:00</b>
Module 3: Assisting in Veterinary extension services	20.00	40.00	0.00	00.00	60.00

<b>AGR/N4810: Development program implementation and marketing in the livestock sector</b> <b>NOS Version-2.0</b> <b>NSQF Level-4</b>	<b>20:00</b>	<b>10:00</b>	<b>0:00</b>	<b>0:00</b>	<b>30:00</b>
Module 4: Development program implementation and marketing in livestock sector	20.00	10.00	0.00	0.00	30.00
<b>AGR/N4820: Implementation of cattle Breeding Services</b>	<b>60:00</b>	<b>90:00</b>	<b>0:00</b>	<b>00:00</b>	<b>150.00</b>
Module 5: Implementation of cattle Breeding Services	60.00	90.00	00.00	00.00	150.00
<b>DGT/VSQ/N0102 Employability Skills</b> <b>NOS Version-1.0</b> <b>NSQF Level-4</b>	<b>60:00</b>	<b>00:00</b>	<b>0:00</b>	<b>0:00</b>	<b>60:00</b>
Module 6: Employability Skills	60:00	00:00	0:00	0:00	60:00
<b>Total Duration with Optional NOS</b>	<b>180:00</b>	<b>180:00</b>	<b>0:00</b>	<b>00:00</b>	<b>360:00</b>
<b>OJT (Recommended): 150 hours</b>					

## Module Details

### Module 1: Introduction to the role of an Artificial Insemination Technician *Bridge Module*

#### Terminal Outcomes:

- Explain the scope, job role, societal and professional responsibility of a Livestock Service Provider

<b>Duration: 05:00</b>	<b>Duration: 0:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Practice general Discipline in the classroom (Do's &amp; Don'ts)</li> <li>• Recognize the importance of rural Livelihood and livestock farming.</li> <li>• Identify village institutions, list and assess resources for effective service delivery</li> <li>• Recognize the scope and demand of veterinary service and animal husbandry extension.</li> <li>• Explain the likely career path of a Livestock Service Provider</li> <li>• Describe and adhere to Laws/rules related to Minor Veterinary Practice / Drug dispensing and appreciate the importance of supervision by Veterinarians.</li> <li>• Summarise the role and responsibility of a Livestock Service Provider</li> <li>• Appreciate the importance of continuous learning, skill acquisition, and use the support system for the referral.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate social awareness and communication skills</li> </ul>
<b>Classroom Aids</b>	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop	
<b>Tools, Equipment and Other Requirements</b>	
NA	

## Module 2: Veterinary First Aid

### Mapped to AGR/N4805 v2.0

#### Terminal Outcomes:

- Perform first aid treatment/emergency care during emergency conditions under the supervision of veterinarians following approved government / organizational guidelines.

<b>Duration: 15:00</b>	<b>Duration: 40:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Define the meaning of emergency conditions and predisposing factors related to the cause of a disease with some suitable examples.</li> <li>• Define a healthy animal from a diseased animal.</li> <li>• Describe various common symptoms of disease and their basic treatments in emergency conditions (As per instruction/manual prepared by a veterinarian)</li> <li>• Describe the importance of record keeping.</li> <li>• Classify the available approved traditional medicinal products and practices to apply in an emergency.</li> <li>• Explain how to prepare a standard first aid kit and its applications.</li> <li>• Describe the safety measures to be taken during an emergency or during giving first aid.</li> <li>• Explain the common approaches in handling poisoning and natural calamities.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate how to prepare an antiseptic solution for cleaning and washing of muzzle, hooves, mouth, etc.</li> <li>• Demonstrate how to prepare a datasheet/ fill up health monitoring proforma.</li> <li>• Demonstrate cardiopulmonary resuscitation (CPR) for small and new born animals.</li> <li>• Practice handling of superficial wounds / Abscess.</li> <li>• Demonstrate ways to approach and handle fractures and horn injuries.</li> <li>• Demonstrate the first aid during animal birth.</li> <li>• Demonstrate ways to approach and handle poisoning cases, sun-stroke, electrocution, burn injuries, etc.</li> <li>• Demonstrate initial ways to handle prolapse of the uterus to clean, prevent bleeding and protect the wound.</li> <li>• Demonstrate ways to calculate body weight of animals.</li> <li>• Demonstrate different routes for the administration of medicine as suggested by veterinarian (Oral/ Subcutaneous / Intramuscular)</li> </ul>
<b>Classroom Aids:</b>	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop, Kit required to demonstrate first aid.	
<b>Tools, Equipment, and Other Requirements</b>	
Syringe, Needle, Antiseptic solutions, Bandage, Cotton, Gauge, Intravenous infusion set, scalp vein set, Normal saline solution/Dextrose saline solution	

## Module 3: Assisting in veterinary extension services

### Mapped to AGR/N4808 v2.0

#### Terminal Outcomes:

- Practice record-keeping, audiovisual aids, prepare program reports, fill out datasheet and survey form following approved government / organizational guidelines.

Duration: 20:00	Duration: 40:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>Explain the meaning of KASA (Knowledge, Attitude, Skills, and Action)</li> <li>Explain leadership qualities.</li> <li>Define the meaning of extension and what it involves.</li> <li>Explain extension related schemes and institutions within the district / state.</li> <li>Explain the production cycle in farm animals.</li> <li>Explain the basics of livestock housing, feeding, breeding and general farm management.</li> <li>Explain points to be considered for selection of breeding animals to farm with.</li> <li>Describe the applications and benefits of commonly approved technologies in feeding, breeding, and other best practices (including organic practices (s) in various situations/opportunities/constraints</li> <li>Explain the concept of quality and various parameters/components associated with quality farm input</li> <li>Describe the importance of record-keeping Or Why should one maintain records of different farmer meeting/school activities?</li> <li>Describe the different components of record-keeping (e.g., targeted and need-based)</li> </ul>	<ul style="list-style-type: none"> <li>Demonstrate the applications of mobile and other technologies (e.g., modern communication devices or audiovisual aids)</li> <li>Demonstrate how to prepare a brief field program report, fill datasheet and survey form.</li> <li>Identify various fodder species and livestock feed ingredients.</li> <li>Conduct organoleptic testing of feed</li> <li>Use mobile application for ration balancing</li> <li>Demonstrate fodder preservation, enrichment and silage making.</li> <li>Illustrate economic housing models prescribed for various species within the region / state.</li> <li>Illustrate body condition scoring</li> <li>Demonstrate hygienic milking and livestock product handling.</li> <li>Illustrate different modes (e.g., mobile application, websites, brochures, pamphlets, information sheet, etc.) to transfer knowledge Or educate farmers/clients to avail different technology</li> <li>Assist in conducting a participatory rural appraisal.</li> </ul>
<b>Classroom Aids:</b>	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
<b>Tools, Equipment, and Other Requirements</b>	
Paper, pen, datasheet, manual, brochures/pamphlets, mobile, audiovisual aids	

## Module 4: Development program implementation and marketing in the livestock sector

*Mapped to AGR/N4810 v2.0*

### Terminal Outcomes:

- Assist in implementation of development program.
- Participate in sales / marketing of livestock farm inputs
- Support producers on marketing of livestock products

<b>Duration: 20:00</b>	<b>Duration: 10:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• State expectation from a development worker</li> <li>• State the purpose of development program implementation and Sustainable development goal.</li> <li>• Explain basic aspect of development project management</li> <li>• Describe business planning</li> <li>• Describe guidelines for setting price of products</li> <li>• Explain how to promote demand of livestock products in the market.</li> <li>• Describe various marketing task</li> <li>• Describe the basics of project development and management.</li> </ul>	<ul style="list-style-type: none"> <li>• Observe and record implementation of various livestock and rural development programs at village level.</li> <li>• Observe and record functioning of a Self Help Group</li> <li>• Conduct program to promote development schemes of government to potential beneficiaries.</li> <li>• Conduct mock selling of any compound feed brand available in the local market.</li> <li>• Practice promotion of a livestock insurance product to farmers.</li> <li>• Illustrate livestock product markets within the district / state.</li> <li>• Prepare a basic business plan to set up livestock link enterprise.</li> </ul>
<b>Classroom Aids:</b>	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
<b>Tools, Equipment and Other Requirements</b>	
Mobile/Electronic gadgets, Paper, Pen, Datasheet, Manual	

## Module 5: Implementation of cattle breeding services

### Mapped to AGR/N4820 v2.0

#### Terminal Outcomes:

- Perform small animal breeding, including pre-breeding-related activities such as breeder database maintenance, quality animal selection for breeding, and performance monitoring.

<b>Duration: 60:00</b>	<b>Duration: 90:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Describe the basics of the reproductive system in small farm animals.</li> <li>• Describe basic concepts of genetics.</li> <li>• Describe the parameters related to the selection of breeding animals and explain how one can assist the farmers/clients in selective breeding of small farm animals</li> <li>• Explain how to assess the right artificial insemination (AI) time in small farm animals.</li> <li>• Describe the procedures/protocols in conducting artificial insemination (AI) in goats and pigs, including biosecurity, safety, hygiene, and animal welfare.</li> <li>• Describe parturition in goat, sheep and farrowing in pigs</li> <li>• Describe the common infertility issues in small farm animals</li> <li>• Explain how one can guide the farmers regarding the management of infertility in small farm animals.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate how to examine various reproductive organs in small farm animals</li> <li>• Identify signs of heat in sheep, goat, pigs</li> <li>• Practice analysis of appropriate quality of semen for artificial insemination (AI).</li> <li>• Demonstrate how to handle semen straw while conducting artificial insemination (AI).</li> <li>• Practice artificial insemination (AI).</li> <li>• Record field data using mobile-based data collection or electronic reader.</li> <li>• Demonstrate ways of approach or handle the difficulties related to animal birth in small farm animals.</li> </ul>
<b>Classroom Aids:</b>	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
<b>Tools, Equipment, and Other Requirements</b>	
AI Kit, Straw, Semen, Animal for demonstration purpose (both male and female)	

## Module 6: 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

## Module 7: OTJ

### On-the-Job Training (Recommended) Suggested activities:

#### **Veterinary First Aid ( 30 hrs )**

1. Work in hospital or animal rescue units and practice basic first aid and suggested drug administration activities under the guidance of veterinarians.
2. Perform at least two superficial wound dressings.
3. Attend at least three cases of animal birth and provide care to newborn
4. Work with a practicing veterinarian and assist him/her in correcting at least three uterine prolapse cases.

#### **Assisting in Veterinary extension services ( 20 hrs )**

1. Collect samples of various feed ingredients and practice organoleptic quality testing
2. Visit fodder plots and record practices.
3. Attend livestock expo and collect information related to various livestock farm inputs
4. Practice mobile applications for ration balancing

#### **Implementation of cattle Breeding Services ( 100 hrs )**

1. Perform a minimum of thirty artificial inseminations in cattle in the field situation and follow up.
2. Collect details of various feed supplements / other related products and their uses/benefits in improving cattle productivity.
3. Work with a suitable agency and participate in animal identification/tagging related works
4. Participate in at least three camps and perform vaccination of cattle.
5. Work with an appropriate agency implementing projects involving the use of mobile devices for animal data collection.

## Annexure

### Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
<b>Diploma</b>	Veterinary /Animal Husbandary / Dairying	5	Cattle Breeding and Animal Welfare	0		Regular Diploma more than 15 months in veterinary /Animal Husbandary / Dairying
<b>B. V. Sc.</b>		1	Cattle Breeding and Animal Welfare	0		
<b>Post Graduate</b>	Animal science	0		0		

Trainer Certification	
Domain Certification	Platform Certification
Certified for Job Role: “ <b>Artificial Insemination Technician</b> ” mapped to QP: “ <b>AGR/Q4803, v2.0</b> ”. Minimum accepted score is 80%	Recommended that the Trainer is certified for the Job Role: “Trainer (Vet and Skills)”, mapped to the Qualification Pack: “ <b>MEP/Q2601 V2.0</b> ”. Minimum accepted % as per respective SSC guidelines is 80%.

## Assessor Requirements

Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training/Assessment Experience		Remarks
		Years	Specialization	Years	Specialization	
B. V. Sc.		4	In Animal Science/Veterinary Science /related experience	0		Practical skills and knowledge required in providing artificial insemination services and reproductive consultation
M. V. Sc		2	In Animal Science/Veterinary Science /related experience	0		Practical skills and knowledge required in providing artificial insemination services and reproductive consultation
Ph. D	Veterinary Science/Animal Husbandry/ Veterinary Clinical Medicine/Veterinary Clinical Sciences	1	In Animal Science/Veterinary Science /related experience	0		Practical skills and knowledge required in providing artificial insemination services and reproductive consultation

### Assessor Certification

Domain Certification	Platform Certification
Certified for Job Role: “ <b>Artificial Insemination Technician</b> ” mapped to QP: “ <b>AGR/Q4803, v2.0</b> ”. Minimum accepted score is 80%	Certified for the Job Role: “Assessor (Vet and Skills)”, mapped to the Qualification Pack: “ <b>MEP/Q2701, v2.0</b> ”, 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 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

<b>Assessment</b>			
<b>Assessment Type</b>	<b>Formative or Summative</b>	<b>Strategies</b>	<b>Examples</b>
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 standardisation of the marking scheme.

### Type of Evidence and Evidence Gathering Protocol:

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

- Geo Tagging to track ongoing assessment
- AA's coordinator emails the list of documents and evidence (photos and videos) to the assessor one day before the assessment. The list is mentioned below:
  - Signed Attendance sheet
  - Assessor feedback sheet

- Candidate feedback sheet
  - Assessment checklist for assessor
  - Candidate Aadhar/ID card verification
  - Pictures of the classroom, labs to check the availability of adequate equipment's and tool to conduct the training and assessment
  - Pictures and videos of Assessment, training feedback and infrastructure.
- Apart from the Assessor, a Technical assistant 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 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
<b>Declarative Knowledge</b>	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.
<b>Key Learning Outcome</b>	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).
<b>OJT (M)</b>	On-the-job training (Mandatory); trainees are mandated to complete specified hours of training on site
<b>OJT (R)</b>	On-the-job training (Recommended); trainees are recommended the specified hours of training on site
<b>Procedural Knowledge</b>	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.
<b>Training Outcome</b>	Training outcome is a statement of what a learner will know, understand and be able to do upon the completion of the training.
<b>Terminal Outcome</b>	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