



# Model Curriculum

**QP Name: Artificial Insemination Technician**

**QP Code: AGR/Q4803**

**Version: 4.0**

**NSQF Level: 4**

**Model Curriculum Version: 3.0**

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

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## Training Parameters

Sector	Agriculture
Sub-Sector	Animal Husbandry
Occupation	Livestock Health Management
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/6121.0500
Minimum Educational Qualification and Experience	<p>12th Class pass or equivalent</p> <p>OR</p> <p>10th Class with 3 Year of relevant experience in Agriculture and allied sectors or as pashu sakho/ Gopal Mitra/MAITRIs</p> <p>OR</p> <p>Previous relevant qualification of NSQF Level 3.5 and with 1.5 Year relevant experience in Agriculture and allied sectors or as pashu sakho/ Gopal Mitra/MAITRIs</p> <p>OR</p> <p>Previous relevant qualification of NSQF Level 3 and with 3 Year relevant experience in Agriculture and allied sectors or as pashu sakho/ Gopal Mitra/MAITRIs</p>
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	26-11-2024
Next Review Date	26-11-2027
NSQC Approval Date	26-11-2024
QP Version	4.0
Model Curriculum Creation Date	26-11-2024
Model Curriculum Valid Up to Date	26-11-2027
Model Curriculum Version	3.0
Minimum Duration of the Course	390 Hours
Maximum Duration of the Course	420 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 artificial insemination and pregnancy diagnosis-related services to dairy farmers.
- Provide veterinary first aid to dairy animals focusing on reproductive emergencies.
- Provide essential preventive health care advice to breeders, including vaccination service to dairy animals.
- Assist public and private agencies in implementing breed up-gradation and general development programs.
- Assist in animal husbandry extension.
- Assist in marketing livestock farm inputs and products.
- Assist in breeding bull management and semen collection in approved stations.
- Supervise storage, handling and distribution of semen straws
- Assist in routine maintenance of various common equipment in semen stations.

### 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>AGR/N4820: Implement cattle Breeding Services</b> NOS Version-3.0 NSQF Level-4	80:00	100:00	0:00	00:00	180.00
Module 1: Introduction to the role of an Artificial Insemination Technician	05:00	00:00	0:00	0:00	05:00
Module 2 : Implementation of cattle Breeding Services	75:00	100:00	00:00	00:00	175:00
<b>AGR/N4829: Provide Veterinary First Aid (AIT)</b> NOS Version- 1.0 NSQF Level- 4	10:00	20:00	0:00	00:00	30:00
Module 3: Veterinary First Aid (AIT)	5:00	20:00	0:00	00:00	25:00
<b>AGR/N4808: Assist in veterinary extension services</b> NOS Version-3.0 NSQF Level-4	20:00	40:00	0:00	00:00	60:00
Module 4: Assisting in Veterinary extension services	20.00	40.00	0.00	00.00	60.00

<b>DGT/VSQ/N0102</b> <b>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 5: Employability Skills	60:00	00:00	00:00	0:00	60:00
<b>Module 6: On-The-Job Training</b>	<b>00:00</b>	<b>00:00</b>	<b>60:00</b>	<b>00:00</b>	<b>60:00</b>
<b>Total Duration</b>	<b>170:00</b>	<b>160:00</b>	<b>60:00</b>	<b>0:00</b>	<b>390:00</b>

*Option 1: Program implementation and livestock marketing*

<b>NOS and Module Details</b>	<b>Theory Duration</b>	<b>Practical Duration</b>	<b>On-the-Job Training Duration (Mandatory)</b>	<b>On-the-Job Training Duration (Recommended)</b>	<b>Total Duration</b>
<b>AGR/N4810: Facilitate program implementation and marketing in the livestock sector</b> <b>NOS Version-3.0</b> <b>NSQF Level-4</b>	<b>20:00</b>	<b>10:00</b>	<b>0:00</b>	<b>00:00</b>	<b>30:00</b>
Module 7: Facilitate program implementation and marketing in livestock sector	20.00	10.00	0.00	00.00	30.00
<b>Total Duration</b>	<b>20:00</b>	<b>10:00</b>	<b>0:00</b>	<b>00:00</b>	<b>30:00</b>

## Module Details

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

*Bridge Module, Mapped to AGR/N4820v3.0*

#### Terminal Outcomes:

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

Duration: 05:00	Duration: 0:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<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 dairy farming.</li> <li>● Identify village institutions, list and assess resources for effective service delivery</li> <li>● Recognize the importance of scientific method of breeding against superstitious believes.</li> <li>● Recognize the scope and demand of Artificial insemination and animal husbandry extension related services</li> <li>● Explain the likely career path of a Artificial insemination Technician</li> <li>● Explain business prospects of private service delivery as a A I Technician.</li> <li>● Describe and adhere to Laws/rules related supervision and reporting.</li> <li>● Summarise the role and responsibility of a Artificial Insemination Technician</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: Implement cattle breeding services

### Mapped to AGR/N4820 v3.0

#### Terminal Outcomes:

- Perform artificial insemination in cattle and other breeding, preventive healthcare-related services.

Duration: 75:00	Duration: 100:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>• Describe the basics of anatomy of the reproductive system in dairy animals. (Male / Female)</li> <li>• Explain the basic reproductive physiology / production cycle of dairy animals.</li> <li>• Describe puberty, Maturity, Breeding, fertilization, implantation, gestation and calving.</li> <li>• Describe service period, dry period and inter calving period. (ideal calving interval)</li> <li>• Describe various known breeds, basic concepts of genetics, breeding plan and performance goal</li> <li>• Explain state / organizational breeding policy.</li> <li>• Describe the parameters related to the selection of breeding animals.</li> <li>• Explain the concept of selective breeding and crossbreeding.</li> <li>• Describe the concept of artificial insemination, the process of semen straw manufacturing and the pre-requisite for semen quality.</li> <li>• Describe the procedure/ protocols in conducting artificial insemination.</li> <li>• Explain the importance of biosecurity, safety, hygiene, and animal welfare while conducting artificial insemination.</li> <li>• Explain how to assess the suitable time for artificial insemination.</li> <li>• Describe common fertility issues in dairy animals and measures to obtain maximum fertility.</li> <li>• Describe common reproductive disorders / repeat breeding, causes of abortion etc.</li> <li>• Explain calculation of conception rates and factors affecting conception rates.</li> <li>• Explain general biosecurity compliance in a dairy farm.</li> <li>• Explain standard preventive health care and vaccination schedule in dairy animals.</li> <li>• Explain workflow in bull station / semen production centers.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate restraining of animals for identification, semen collection and for insemination.</li> <li>• Demonstrate ear tagging of dairy animals.</li> <li>• Identify signs of heat in dairy animals</li> <li>• Demonstrate how to check for appropriate quality semen and blood level before artificial insemination.</li> <li>• Demonstrate how to examine various reproductive organs.</li> <li>• Demonstrate semen withdrawal from container, thawing</li> <li>• Demonstrate how to handle semen straw while conducting artificial insemination.</li> <li>• Demonstrate safety requirement in handling of liquid nitrogen.</li> <li>• Practice artificial insemination (Simulated / real life) following SOP</li> <li>• Demonstrate how to detect pregnancy in dairy animals.</li> <li>• Demonstrate non-surgical castration.</li> <li>• Demonstrate routine maintenance of equipment in semen stations.</li> <li>• Demonstrate storage and distribution of semen straws in station following the protocols.</li> <li>• Demonstrate use and maintenance of Liquid Nitrogen (LN) containers including, refilling schedule, LN conservations measures.</li> <li>• Demonstrate vaccination in dairy cattle as a part of preventive care of breeding animals.</li> <li>• Record field data using mobile-based data collection or electronic reader.</li> </ul>

- Describe semen collection, evaluation, processing, preservation (including packing, structure of straws)
- Explain workflow related to maintenance of various standard equipment, storage and distribution of semen straws.
- Describe the basics of management of breeding bulls.

#### Classroom Aids:

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

#### Tools, Equipment, and Other Requirements

Ear tag applicator, Reproductive organs from the slaughterhouse, AI Kit, Straw, Semen, Animal for demonstration purpose (both male and female)



## Module 3: Veterinary First Aid (AIT)

*Mapped to AGR/N4829 v1.0*

### Terminal Outcomes:

- Perform first aid care during emergency conditions following approved government / organizational guidelines.

Duration: 10:00	Duration: 20:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>• Describe signs of non-infectious conditions like indigestion, anorexia, constipation, tympani and impaction in dairy animals.</li> <li>• Describe signs of accidental situations like poisoning, sunstroke, electrocution, burn injuries etc.in dairy animals.</li> <li>• Discuss pre-disposing factors related to emergencies in dairy animals.</li> <li>• Explain primary / immediate care for common emergency situations in dairy animals.</li> <li>• Explain nature of wounds and procedure for cleaning and protection.</li> <li>• Describe common medication including approved etho-veterinary practices helpful in emergency situations.</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> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate immediate care following calving, including resuscitation to newborn calves.</li> <li>• Practice handling of superficial wounds</li> <li>• Demonstrate the first aid during reproductive emergencies</li> <li>• Demonstrate ways to approach and handle poisoning cases, sun-stroke, electrocution, burn injuries, etc.</li> <li>• Demonstrate application, administration of medications meant for specific common emergencies.</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>	
Antiseptic solutions, Bandage, Cotton, Gauge gloves, restraining device, Clean towels etc.	

## Module 4: Assisting in veterinary extension services

### Mapped to AGR/N4808 v3.0

#### Terminal Outcomes:

- Practice dissemination of best practices and technologies in livestock farming and handhold farmers for their adoption.
- Assist farmers in managing livestock business.
- Assist government / private organizations in identifying farmer needs and collecting feedback on technology adoption.

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 sanitation and hygiene within farm premises and waste disposal.</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>● Describe how gender and other social factors impact management of animals.</li> <li>● Explain the concept of quality and various parameters associated with quality farm input</li> <li>● Describe the importance of record-keeping in livestock farming.</li> <li>● Explain handling of infertility with better nutrition</li> <li>● Discuss organic and natural livestock farming.</li> <li>● Explain basic aspects of managing a livestock business or a business of livestock related service provision.</li> <li>● Explain dos and don'ts in the event of disasters (in the context of livestock farming)</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>● Demonstrate use of mineral mixture and feed supplements</li> <li>● Illustrate economic housing models</li> <li>● Illustrate body condition scoring</li> <li>● Demonstrate hygienic milking and dairy 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>● Participate 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 5: 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 6: On-the-Job Training

### Veterinary First Aid

1. Prepare a first aid kit containing locally available approved ethno-veterinary preparation that helps handle non-infectious conditions.
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

1. Collect samples of various feed ingredients and practice organoleptic quality testing.
2. Visit a local Krishi Vigyan Kendra and observe / record demonstrated technologies / best practices related to dairy farming.
3. Present a talk in a village meeting explaining the care of young calves till their pregnancy.
4. Attend livestock expo and collect information on various livestock farm inputs and technologies.
5. Practice mobile applications for breeding record collection and ration balancing.

### Development program implementation and marketing in the livestock sector

1. Work with a suitable agency to participate in animal identification/tagging-related works and register dairy cattle for livestock insurance.
2. Work with a farm input supplier and participate in a field program to promote/market any product or technology for dairy cattle productivity.

### Implementation of cattle Breeding Services

1. Record a minimum of 5 different histories of farmers seeking breeding-related services.
2. Perform a minimum of thirty artificial inseminations in cattle in the field situation and follow up.
3. Perform a minimum of 10 pregnancy diagnosis.
4. Participate in at least three camps and perform vaccination of cattle.
5. Work in an approved semen station and assist in semen collection, breeding bull management and routine maintenance of common equipment.

## Module 7: Facilitate program implementation and marketing in the livestock sector

Mapped to AGR/N4810 v4.0

### Terminal Outcomes:

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

Duration: 20:00	Duration: 10:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<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 function of village level institutions linked to development program implementation.</li> <li>● Explain basic aspect of development project management</li> <li>● Explain aggregation and collective marketing of livestock products.</li> <li>● Describe economics of livestock business.</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>● Handhold formation and functioning of Self Help Groups / producer company or any farmer collectives.</li> <li>● Conduct program to promote development schemes of government / private to potential beneficiaries.</li> <li>● Conduct mock selling of any farm input brand available in the local market.</li> <li>● Practice promotion of a livestock insurance product to farmers.</li> <li>● Illustrate livestock product markets (e.g. Trade basics, prices, trends etc.) within the district / state.</li> <li>● Prepare a basic business plan to set up livestock linked 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	

## 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: “Artificial Insemination Technician” mapped to QP: “AGR/Q4803, v4.0”. Minimum accepted score is 80%			Recommended that the Trainer is certified for the Job Role: “Trainer (Vet and Skills)”, mapped to the Qualification Pack: “MEP/Q2601 V2.0”. Minimum accepted % 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: “Artificial Insemination Technician” mapped to QP: “AGR/Q4803, v4.0”. Minimum accepted score is 80%	Certified for the Job Role: “Assessor (Vet and Skills)”, mapped to the Qualification Pack: “MEP/Q2701, v2.0”, with a minimum score of 80%.



## Assessment Strategy

### Assessment System Overview

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

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

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

An individual must have adequate knowledge and skills to perform a specific task; weightage for different aspects of the assessment is given as follows:

- Multiple Choice Questions: 20%-30%, depending on the specific QP
- Viva: 20%
- Practical: 50% - 60% (Involves demonstrations of applications and presentations of procedures/tasks and other components)
- Assessment will be carried out by certified assessors through 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 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-Stamped 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