



Model Curriculum

QP Name: Mushroom Grower(Entrepreneur)

QP Code: AGR/Q7803

Version: 3.0

NSQF Level: 4

Model Curriculum Version: 2.0

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

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Training Parameters

Sector	Agriculture
Sub-Sector	Agriculture Crop Production
Occupation	Agri-Entrepreneurship & Rural Enterprises
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/NIL
Minimum Educational Qualification and Experience	<p>Minimum Educational Qualification: 10th Class with 2 years of relevant experience</p> <p>OR</p> <p>10th Class Pass and pursuing continuous regular schooling</p> <p>OR</p> <p>Previous relevant Qualification of NSQF Level- 3 with minimum education as 5th grade pass with 2 Years of relevant experience</p> <p>Minimum Age: 18 Years</p>
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	17/11/2022
Next Review Date	17/11/2025
NSQC Approval Date	17/11/2022
QP Version	3.0
Model Curriculum Creation Date	17/11/2022
Model Curriculum Valid Up to Date	17/11/2025
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:

- Demonstrate the process of preparing and pasteurising mushroom compost.
- Describe the process of establishing a mushroom farm and preparing the site for mushroom cultivation.
- Demonstrate the process of carrying out mushroom cultivation.
- Describe the process of maintaining, harvesting and processing mushroom.
- Explain the basic entrepreneurial activities for small enterprise.
- Describe the process of undertaking employability and entrepreneurial practices.
- Demonstrate various practices to maintain personal hygiene, cleanliness, and safety at the workplace.
- Explain the importance of practising inclusion and gender equality at work.

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	0:00	05:00
Module 1: Introduction to the role of a Mushroom Grower (Entrepreneur)	05:00	0:00	0:00	0:00	05:00
AGR/N7813 Prepare and Pasteurise mushroom compost NOS Version-2.0 NSQF Level-4	20:00	35:00	0:00	0:00	65:00
Module 2: Preparation and pasteurisation of mushroom compost	20:00	35:00	0:00	0:00	65:00
AGR/N7814 Procure mushroom spawn and prepare the site for cultivation NOS Version-2.0	20:00	40:00	0:00	0:00	40:00

NSQF Level-4					
Module 3: Procurement of inputs and preparation of the site for mushroom cultivation	20:00	40:00	0:00	0:00	40:00
AGR/N7815 carry out mushroom cultivation NOS Version-2.0 NSQF Level-4	25:00	65:00	0:00	0:00	90:00
Module 4: Process of mushroom cultivation	25:00	65:00	0:00	0:00	90:00
AGR/N7816 Maintain, harvest and process mushroom NOS Version-2.0 NSQF Level-4	20:00	40:00	0:00	0:00	60:00
Module 5: Process of maintaining, harvesting and processing mushroom	20:00	40:00	0:00	0:00	60:00
AGR/N9908 Undertake basic entrepreneurial activities for small Enterprise NOS Version- 2.0 NSQF Level- 4	15:00	15:00	0:00	0:00	30:00
Module 6: Basic entrepreneurial activities for small enterprise	15:00	15:00	0:00	0:00	30:00
AGR/N9903 Maintain health and safety at the workplace NOS Version-3.0 NSQF Level-4	15:00	15:00	0:00	0:00	30:00
Module 7: Hygiene and cleanliness	03:00	03:00	0:00	0:00	06:00
Module 8: 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	0:00	60:00

Module 9: Employability Skills	60:00	00:00	0:00	0:00	60:00
Total Duration	180:00	210:00	0:00	0:00	390:00

Module Details

Module 1: Introduction to the role of a Mushroom Grower(Entrepreneur)

Bridge Module

Terminal Outcomes:

- State the role and responsibilities of a Mushroom Grower(Entrepreneur)

Duration: 05:00	Duration: 0:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Describe the size and scope of the Agriculture industry and its sub-sectors. • Discuss the role and responsibilities of a Mushroom Grower/ Entrepreneur. • Identify various employment/entrepreneurship opportunities for a Mushroom Grower/ Entrepreneur.. • Discuss economics of mushroom cultivation • Discuss Basic Concepts & Characteristics of Entrepreneurship 	
Classroom Aids	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
NA	

Module 2: Preparation and pasteurisation of mushroom compost

Mapped to AGR/N7813 v2.0

Terminal Outcomes:

- Explain the importance of using mushroom compost in mushroom cultivation.
- Demonstrate the process of preparing and pasteurising mushroom compost.

Duration: 20:00	Duration: 35:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Explain the importance and function of compost in mushroom cultivation. • List different types of compost used in mushroom cultivation. • Describe the long and short methods of preparing mushroom and the difference between them. • List different types of fertilizers used for preparing mushroom compost. • Describe the process of preparing mushroom compost. • List various ingredients to rectify mineral deficiencies and stabilise the effect of ammonium content in the mushroom compost. • Explain the importance of ensuring adequate aeration in mushroom compost. • Describe the process of pasteurising mushroom compost. • Explain how to protect the mushroom compost from pathogens and pests. 	<ul style="list-style-type: none"> • Demonstrate the process of preparing the mixture of molasses, wheat bran and fertilizers while maintaining the recommended ratio. • Demonstrate the process of preparing the mushroom compost by mixing the base material and wet fertilizers. • Demonstrate the process of pasteurising the mushroom compost to kill harmful micro-organisms. • Prepare a sample record of chemicals used in the preparation of mushroom compost.
Classroom Aids	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
Growth Substrate, Sprayer, Duster, Chemicals	

Module 3: Procurement of inputs and preparation of the site for mushroom cultivation

Mapped to ARG/N7814 v2.0

Terminal Outcomes:

- List various inputs required for the cultivation of mushroom.
- Describe the process of preparing the site for mushroom cultivation.

Duration: 20:00	Duration: 40:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • List varieties of mushroom commonly cultivated in different geographical conditions. • Describe the appropriate growing conditions for varieties of mushroom. • Describe the process of negotiating with vendors and procuring the required inputs. • Explain the appropriate conditions for storing the various inputs required for mushroom cultivation. • Describe the process of using mushroom spawns. • List various materials required for setting up a mushroom farm. • Explain the criteria for selecting a site for mushroom cultivation. • Explain the importance of having an effective water drainage system at the site of mushroom cultivation. • Describe the process of preparing the layout and establishing a mushroom farm. 	<ul style="list-style-type: none"> • Show how to assess the moisture and temperature levels to identify favourable conditions for growing mushroom at a site. • Prepare a sample layout for a mushroom farm according to the growing conditions required for the selected variety of mushroom.
Classroom Aids	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
NA	

Module 4: Process of mushroom cultivation

Mapped to AGR/N7815 v2.0

Terminal Outcomes:

- Demonstrate the process of spawning.
- Demonstrate the process of preparing and applying casing soil.
- Demonstrate various practices for effective resource optimisation.
- Describe various practices for the effective disposal of waste.

Duration: 25:00	Duration: 65:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Describe different methods of spawning mushroom seeds such as spot spawning, surface spawning, layer spawning, etc. • List various materials required for spawning and preparing casing soil. • Describe the process of preparing casing soil. • Describe the importance and process of compost turning. • Explain the importance of maintaining the recommended temperature, Potential of Hydrogen (pH) and relative humidity during mushroom cultivation. • Describe the methods of recycling and disposing different types of waste. 	<ul style="list-style-type: none"> • Show how to carry out spawning under different methods of spawning such as spot spawning, surface spawning and layer spawning. • Show how to prepare the mixture of mushroom spawn and compost maintaining the recommended ratio. • Demonstrate the process of preparing the casing soil using the recommended material such as ash of rice husk, calcium carbonate and sterilised soil. • Show how to pasteurise the compost and casing soil using the formalin solution. • Demonstrate various practices to optimise the usage of various resources such as water and electricity. • Demonstrate the process of recycling and disposing different types of waste in compliance with the applicable laws and regulations.
Classroom Aids	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
Sprayer, Duster, Safety Gloves & Boots, Face Mask, Disinfectant, Chemicals	

Module 5: Process of maintaining, harvesting and processing mushroom

Mapped to AGR/N7816 v2.0

Terminal Outcomes:

- Describe the process of maintaining the mushroom's optimum growth.
- Demonstrate the process of harvesting the mushroom.
- Describe the process of storing packing and transporting mushroom.

Duration: 20:00	Duration: 40:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Describe the process of maintaining varieties of mushroom before harvesting. • List common mushroom pests, insects, fungi, diseases and their remedies. • Explain the importance of using sterilised pots, containers, tools and equipment to control nematodes, mites, insect, pests etc. • Describe various measures to protect the mushroom cultivation area from contamination. • Explain different growth indicators to identify the readiness of mushroom for being harvested. • Describe various techniques for harvesting mushroom. • Explain various parameters for sorting and grading the harvested mushroom. 	<ul style="list-style-type: none"> • Show how to assess the cropping bed for any pests and fungal diseases. • Demonstrate the process of applying the recommended pesticides/ insecticides/ fungicides using sterilised Personal Protective Equipment (PPE) as per the manufacturer's instructions. • Demonstrate the process of harvesting mushroom using different techniques. • Demonstrate the process of sorting and grading the harvested mushroom on the relevant parameters. • Demonstrate the process of applying the relevant treatment in the storage area to remove any pesticides/ insecticides/ rodents. • Show how to pack the mushroom ensuring its hygiene. • Prepare a sample record of harvested, packed, and transported mushroom.
Classroom Aids	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
Polypropylene bag, non-waxed paper bag, tin cans for export, labels, Weighing machine, Bag sealing machine	

Module 6: Basic entrepreneurial activities for small enterprise

Mapped to AGR/N9908 v2.0

- Describe the process of planning the agricultural enterprise/ business.
- Describe the process of managing the agricultural production process.
- Describe the process of managing the post-production and marketing processes.

Duration: 15:00	Duration: 15:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Explain how to analyse the demand and supply of the relevant agricultural produce in the market • Describe the process of identifying the target customers and assess their needs and expectations with respect to the quality and price of the produce. • Explain how to identify various types of agricultural entrepreneurship/ business opportunities. • Explain how to prepare a basic business plan for agricultural entrepreneurship/business activities. • State the appropriate sources of funding for the agricultural entrepreneurship/ businesses • State the relevant government schemes and programs • Explain the importance of ensuring compliance with the government structural reforms and • framework, along with the applicable rules and regulations. • List various resources required for agricultural production • Describe the process of planning agricultural production and the use of relevant technologies to enhance production • Explain the importance of ensuring no cause adverse impact on the environment and produce during production • State the recommended practices to be followed for efficient input 	<ul style="list-style-type: none"> • Demonstrate how to analyse the demand and supply of the relevant agricultural produce in the market. • Prepare a sample basic business plan for agricultural entrepreneurship/business activities. • Demonstrate how to calculate the costs incurred and determine the price of the product for profitability. • Prepare a sample marketing plan considering the 4Ps i.e., product, price, promotion, and place and 4As i.e., acceptability, affordability, accessibility, and awareness. • Demonstrate the process of using the relevant digital services such as e-commerce, e-payments, electronic recordkeeping, etc.

resource management.

- Describe the process of optimising the production processes and output through the amalgamation of existing practices with smart technologies.
- Explain the recommended sustainability practices to be followed during agricultural production to prevent and deal with deforestation, loss of biodiversity, soil degradation, etc.
- Explain how to collect information related to the wholesale and retail price of agricultural produce.
- Explain how to calculate the economics of the produce viz. production cost, price of the produce, B:C Ratio etc.
- Explain the relevant government schemes with the provision of subsidies/funds for the promotion of agricultural produce.
- Describe the process of selecting appropriate marketing channels for marketing agricultural produce, and the applicable requirements and constraints.
- List the relevant buyers of different types of agricultural produce.
- Explain how to identify and manage various risks to production and post-production processes.
- Explain how to undertake outreach programs to promote agricultural products and services, and expand agri-business.
- Explain the 4Ps i.e., product, price, promotion, and place and 4As i.e., acceptability, affordability, accessibility, and awareness considered while preparing and executing a marketing plan.
- Explain the use of the relevant digital services such as e-commerce, e-payments, electronic recordkeeping, etc.

<ul style="list-style-type: none"> • Explain the importance of using efficient post-production logistics. • Explain the importance of maintaining various records accurately. 	
<p>Classroom Aids</p>	
<p>Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop</p>	
<p>Tools, Equipment and Other Requirements</p>	
<p>NA</p>	

Module 7: 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
<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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 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 8: 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: 12:00	Duration: 12:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • 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 damages 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. 	<ul style="list-style-type: none"> • Check various areas of the workplace for leakages, water-logging, pests, fire, etc. • Demonstrate how to safely use the PPE and implements 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 9: Employability Skills (60 hours)

Mapped to NOS DGT/VSQ/N0102 v1.0

Duration: 60:00

Key Learning Outcomes

Introduction to Employability Skills Duration: 1.5 Hours

After completing this programme, participants will be able to:

1. Discuss the Employability Skills required for jobs in various industries
2. List different learning and employability related GOI and private portals and their usage

Constitutional values - Citizenship Duration: 1.5 Hours

3. Explain the constitutional values, including civic rights and duties, citizenship, responsibility towards society and personal values and ethics such as honesty, integrity, caring and respecting others that are required to become a responsible citizen
4. Show how to practice different environmentally sustainable practices.

Becoming a Professional in the 21st Century Duration: 2.5 Hours

5. Discuss importance of relevant 21st century skills.
6. Exhibit 21st century skills like Self-Awareness, Behavior Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn etc. in personal or professional life.
7. Describe the benefits of continuous learning.

Basic English Skills Duration: 10 Hours

8. Show how to use basic English sentences for everyday conversation in different contexts, in person and over the telephone
9. Read and interpret text written in basic English
10. Write a short note/paragraph / letter/e -mail using basic English

Career Development & Goal Setting Duration: 2 Hours

11. Create a career development plan with well-defined short- and long-term goals

Communication Skills Duration: 5 Hours

12. Demonstrate how to communicate effectively using verbal and nonverbal communication etiquette.
13. Explain the importance of active listening for effective communication
14. Discuss the significance of working collaboratively with others in a team

Diversity & Inclusion Duration: 2.5 Hours

15. Demonstrate how to behave, communicate, and conduct oneself appropriately with all genders and PwD
16. Discuss the significance of escalating sexual harassment issues as per POSH act.

Financial and Legal Literacy Duration: 5 Hours

17. Outline the importance of selecting the right financial institution, product, and service
18. Demonstrate how to carry out offline and online financial transactions, safely and securely
19. List the common components of salary and compute income, expenditure, taxes, investments etc.
20. Discuss the legal rights, laws, and aids

Essential Digital Skills Duration: 10 Hours

21. Describe the role of digital technology in today's life
22. Demonstrate how to operate digital devices and use the associated applications and features, safely and securely
23. Discuss the significance of displaying responsible online behavior while browsing, using various social media platforms, e-mails, etc., safely and securely
24. Create sample word documents, excel sheets and presentations using basic features
25. utilize virtual collaboration tools to work effectively

Entrepreneurship Duration: 7 Hours

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

Customer Service Duration: 5 Hours

30. Describe the significance of analysing different types and needs of customers
31. Explain the significance of identifying customer needs and responding to them in a professional manner.
32. Discuss the significance of maintaining hygiene and dressing appropriately

Getting Ready for apprenticeship & Jobs Duration: 8 Hours

33. Create a professional Curriculum Vitae (CV)
34. Use various offline and online job search sources such as employment exchanges, recruitment agencies, and job portals respectively
35. Discuss the significance of maintaining hygiene and confidence during an interview
36. Perform a mock interview
37. List the steps for searching and registering for apprenticeship opportunities

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
10th class		7	Mushroom Cultivation	0		Mushroom Grower with 7 Years' experience with 10th Pass. Experience certificate issued by BDO/ Agriculture Officer/ Head of Gram panchayat/ Loan disbursing bank or financial institution /Government Agriculture Departments on official letter Head
12th class		6	Mushroom Cultivation	0		Ex-Service-Man including Ex-Paramilitary personnel: Minimum Qualification is 10+2 with an Honourable Discharge/Pension. SSC would consider a relaxation/waiver of sector-specific experience on case-to-case basis.
Diploma	Agriculture	3	Mushroom Cultivation	0		
Graduate		3	Mushroom Cultivation	0		For the school Program minimum qualification of the Trainer should be Graduate. Their Teaching experience will be considered industry experience
Graduate	Agriculture / Horticulture/ Forestry	0.5	Mushroom Cultivation			
Post Graduate	Agriculture / Horticulture/ Forestry/ Pathology	0		0		
Trainer Certification						
Domain Certification				Platform Certification		

<p>Certified for Job Role “Mushroom Grower(Entrepreneur)”, mapped to QP: “AGR/Q7803, v2.0”, Minimum accepted score is 80%</p>	<p>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%.</p>
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Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training/Assessment Experience		Remarks
		Years	Specialization	Years	Specialization	
Graduation	Agriculture/ Forestry/ Horticulture and related experiences	5	Agriculture/ Mycology/ Forestry/ Horticulture and related experience and fields	0		Practical skills and knowledge required in Mushroom Cultivation
Post-graduation	Agriculture/ Forestry/ Horticulture/ Pathology/ Mycology and related experiences	2	Agriculture/ Mycology/ Forestry/ Horticulture and related experience and fields	0		Practical skills and knowledge required in Mushroom Cultivation
PhD	Agriculture/ Forestry/ Horticulture/ Pathology/ Mycology and related experiences	1	Agriculture/ Mycology/ Forestry/ Horticulture and related experience and fields	0		Practical skills and knowledge required in Mushroom Cultivation

Assessor Certification	
Domain Certification	Platform Certification
<p>Certified for Job Role “Mushroom Grower(Entrepreneur)”, mapped to QP: “AGR/Q7803, v2.0”, Minimum accepted score is 80%</p>	<p>Certified for the Job Role: “Assessor (Vet and Skills)”, mapped to the Qualification Pack: “MEP/Q2701, v2.0”, with a minimum score of 80%.</p>

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 empanelled 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.

While it is important that an individual has adequate knowledge and skills to perform a specific task, weightage for different aspects of assessment are 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 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 practical 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 question, 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 more 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 testing objectives of each question and other quality measures.

Type – Questions based on Knowledge Required, Case-based practical scenario questions and automated simulation-based questions.

Practical Skills - The practical assessments are developed taking into consideration two aspects: what practical tasks is the candidate expected to perform on the job and what aspects of the job cannot be judged through theoretical assessments. The candidates shall be asked to perform either an entire task or a set of subtasks depending on the nature of the job role

Type – Standardized rubrics for evaluation against a set of tasks in a demo/practical task

Viva Voce - Those practical tasks which cannot be performed due to time or resource constraints are evaluated through the viva mode. Practical tasks are backed up with Viva for thorough assessment and complete evaluation

Type – Procedural questions, dos and don'ts, subjective questions to check the understanding of practical tasks.

The assessor has to go through an orientation program organized by the Assessment Agency. The training would give an overview to the assessors on the overall framework of QP evaluation. The assessor shall be given a NOS and PC level overview of each QP as applicable. The overall structure of assessment and objectivity of the marking scheme will be explained to them. The giving of marks will be driven by an objective framework that will maintain the standardization of the marking scheme.

Type of Evidence and Evidence Gathering Protocol:

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

- Geo Tagging to track ongoing assessment
- AA's coordinator emails the list of documents and evidence (photos and videos) to the assessor one day before the assessment. The list is mentioned below:
 - Signed Attendance sheet
 - Assessor feedback sheet
 - Candidate feedback sheet
 - 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 popularly known as Proctor also ensures the proper documentation and they verify each other's tasks.
- To validate their work on the day of the assessment, regular calls and video calls are done.
- On-boarding and training of assessor and proctor is done on a timely basis to ensure that the quality of the assessment should be maintained.
- Training covers the understanding of QP, NSQF level, NOS and assessment structure

Methods of Validation

- Morning Check (Pre-Assessment): Backend team of AA calls and confirms assessor/technical SPOC event status. Assessor/Technical SPOC are instructed to reach the centre on time by 9:30 AM / as decided with TC and delay should be highlighted to the Training Partner in advance.
- Video Calls: Random video calls are made to the technical SPOC/assessor so as to keep a check on assessment quality and ensure assessment is carried out in a fair and transparent manner
- Aadhar verification of candidates
- Evening Check (Post Assessment): Calls are made to the ground team to ensure the event is over by what time and the documentation is done properly or not.

- **TP Calling:** To keep a check on malpractices, an independent audit team calls the TP on a recorded line to take confirmation if there was any malpractice activity observed in the assessment on part of the AA/SSC team. If calls are not connected, an email is sent to TP SPOC for taking their confirmation
- **Video and Picture Evidence:** Backend team collects video and pictures for assessment on a real-time basis and highlights any issue such as students sitting idle/ trainer helping the candidates during the assessment.
- **Surprise Visit:** Time to time SSC/AA Audit team can visit the assessment location and conduct a surprise audit for the assessment carried out by the ground team.
- **Geo Tagging:** On the day of the assessment, each technical SPOC is required to login into our internal app which is Geotagged. Any deviation with the centre address needs to be highlighted to the assessment team on a real-time basis.

Method for assessment documentation, archiving, and Access:

- ASCI has 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 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 are downloaded by our internal backend team and saved in Repository. The repository consists of scheme-wise folders. These scheme-wise folders have 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
Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests
Key Learning	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
Training Outcome	Training outcome is a statement of what a learner will know, understand and be able to do upon the completion of the training.
Terminal Outcome	Terminal outcome is a statement of what a learner will know, understand and be able to do upon the completion of a module. A set of terminal outcomes help to achieve the training outcome.

Acronyms and Abbreviations

Term	Description
AGR	Agriculture
NOS	National Occupational Standard (s)
NSQF	National Skills Qualifications Framework
OJT	On-the-job Training
QP	Qualifications Pack
PwD	People with Disability
PPE	Personal Protective Equipment