



QUALIFICATION FILE

Beekeeper

☒ Short Term Training (STT) ☐ Long Term Training (LTT) ☐ Apprenticeship

☐ Upskilling ☐ Dual/Flexi Qualification ☐ For ToT ☐ For ToA

☒ General ☐ Multi-skill (MS) ☐ Cross Sectoral (CS) ☐ Future Skills ☐ OEM

NCrF/NSQF Level: 3

Submitted By:

Agriculture Skill Council of India

Unit No. 101, First Floor, Greenwoods Plaza, Block 'B', Greenwoods City, Sector 45, Gurugram -122009, Haryana.

Table of Contents

Section 1: Basic Details	3
Section 2: Module Summary	5
NOS/s of Qualifications.....	5
Mandatory NOS/s:	5
Assessment - Minimum Qualifying Percentage.....	5
Section 3: Training Related.....	6
Section 4: Assessment Related.....	7
Section 5: Evidence of the need for the Qualification.....	7
Section 6: Annexure & Supporting Documents Check List.....	8
Annexure 1: Evidence of Level.....	9
Annexure 2: Tools and Equipment (Lab Set-Up)	11
Annexure3: Industry Validations Summary.....	12
Annexure4: Training & Employment Details	13
Annexure 5: Detailed Assessment Criteria	14
Annexure 6: Assessment Strategy	20
Annexure: Acronym and Glossary	24

Section 1: Basic Details

1.	Qualification Name	Beekeeper																			
2.	Sector/s	Agriculture																			
3.	Type of Qualification: <input type="checkbox"/> New <input checked="" type="checkbox"/> Revised <input type="checkbox"/> Has Electives/Options <input type="checkbox"/> OEM	NQR Code & version of existing qualification: 2022/AGR/ASCI/05087 & Version 2.0	Qualification Name of existing/previous version: Beekeeper																		
4.	a. OEM Name b. Qualification Name (Wherever applicable)	NA																			
5.	National Qualification Register (NQR) Code &Version (Will be issued after NSQC approval)	2022/AGR/ASCI/06521 & Version 3.0	6. NCrf/NSQF Level: 3																		
7.	Award (Certificate/Diploma/Advance Diploma/ Any Other (Wherever applicable specify multiple entry/exits also & provide details in annexure)	Certificate																			
8.	Brief Description of the Qualification	A Beekeeper is responsible for carrying out beekeeping operations which include preparing for and setting up beehives; procuring and introducing bees in hives, and maintaining the bees and beehives. The individual is also responsible for harvesting, processing and marketing honey and related produce.																			
9.	Eligibility Criteria for Entry for Student/Trainee/Learner/Employee	<p>a. Entry Qualification & Relevant Experience:</p> <table border="1"> <thead> <tr> <th>S. No.</th> <th>Academic/Skill Qualification (with Specialization - if applicable)</th> <th>Required Experience (with Specialization - if applicable)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>8th Class</td> <td>1 Year of relevant experience</td> </tr> <tr> <td>2</td> <td>8th Class Pass and pursuing continuous regular schooling</td> <td></td> </tr> <tr> <td>3</td> <td>5th Class</td> <td>4 Years of relevant experience</td> </tr> <tr> <td>4</td> <td>Ability to read and write</td> <td>5 Years of relevant experience</td> </tr> <tr> <td>5</td> <td>Certificate-NSQF Level-3 (in Agriculture/Horticulture Sector Job Roles)</td> <td>1 Years of relevant experience</td> </tr> </tbody> </table> <p>b. Age: 16</p>		S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)	1	8th Class	1 Year of relevant experience	2	8th Class Pass and pursuing continuous regular schooling		3	5th Class	4 Years of relevant experience	4	Ability to read and write	5 Years of relevant experience	5	Certificate-NSQF Level-3 (in Agriculture/Horticulture Sector Job Roles)	1 Years of relevant experience
S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)																			
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4	Ability to read and write	5 Years of relevant experience																			
5	Certificate-NSQF Level-3 (in Agriculture/Horticulture Sector Job Roles)	1 Years of relevant experience																			
10.	Credits Assigned to this Qualification, Subject to Assessment (as per National Credit Framework (NCrf))	9	11. Common Cost Norm Category (I/II/III) (wherever applicable): III																		

12.	Any Licensing requirements for Undertaking Training on This Qualification <i>(wherever applicable)</i>	NA																						
13.	Training Duration by Modes of Training Delivery <i>(Specify Total Duration as per selected training delivery modes and as per requirement of the qualification)</i>	<input checked="" type="checkbox"/> Offline <input type="checkbox"/> Online <input type="checkbox"/> Blended <table border="1"> <thead> <tr> <th>Training Delivery Modes</th> <th>Theory (Hours)</th> <th>Practical (Hours)</th> <th>OJT Mandatory (Hours)</th> <th>OJT Recommended (Hours)</th> <th>Total (Hours)</th> </tr> </thead> <tbody> <tr> <td>Classroom (offline)</td> <td>120</td> <td>150</td> <td></td> <td></td> <td>270</td> </tr> <tr> <td>Online</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <i>(Refer Blended Learning Annexure for details)</i>					Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)	Classroom (offline)	120	150			270	Online					
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Classroom (offline)	120	150			270																			
Online																								
14.	Aligned to NCO/ISCO Code/s <i>(if no code is available mention the same)</i>	NCO-2015/6123.0101																						
15.	Progression path after attaining the qualification <i>(Please show Professional and Academic progression)</i>	Beekeeper, Bee Breeder /Pollination Service Provider(F&V)																						
16.	Other Indian languages in which the Qualification & Model Curriculum are being submitted	Hindi																						
17.	Is similar Qualification(s) available on NQR-if yes, justification for this qualification	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No URLs of similar Qualifications:																						
18.	Is the Job Role Amenable to Persons with Disability	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If "Yes", specify applicable type of Disability: SHI																						
19.	How Participation of Women will be Encouraged	Batches specific to women will be formed																						
20.	Are Greening/ Environment Sustainability Aspects Covered <i>(Specify the NOS/Module which covers it)</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No DGT/VSQ/N0101 (v1.0)																						
21.	Is Qualification Suitable to be Offered in Schools/Colleges	Schools <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Colleges <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No																						
22.	Name and Contact Details of Submitting / Awarding Body SPOC <i>(In case of CS or MS, provide details of both Lead AB & Supporting ABs)</i>	Name: Ms Priyanka Prakash Email: priyanka@asci-india.com Website: www.asci-india.com <div style="text-align: right;">Contact No.: 0124-4670029</div>																						
23.	Final Approval Date by NSQC: 30/12/2021	24. Validity Duration: 3 years post NSQC Approval			25. Next Review Date: 30/12/2024																			

Section 2: Module Summary

NOS/s of Qualifications

(In exceptional cases these could be described as components)

Mandatory NOS/s:

Specify the training duration and assessment criteria at NOS/ Module level. For further details refer curriculum document.

Th.-Theory Pr.-Practical OJT-On the Job Man.-Mandatory Training Rec.-Recommended Proj.-Project

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/Non-Core	NCrF/NS QF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) (if applicable)
1	Prepare for and start beekeeping operations	AGR/N5303 (v3.0)	Core	3	3	25	65			90	30	40		30	100	30
2	Inspect and maintain the beehives	AGR/N5304 (v3.0)	Core	3	2	20	40			60	30	40		30	100	30
3	Harvest, process and market honey and related produce	AGR/N5305 (v3.0)	Core	3	2	30	30			60	30	40		30	100	30
4	Maintain health and safety at the workplace	AGR/N9903 (v4.0)	Non-Core	4	1	15	15			30	40	25		35	100	5
5	Employability Skills (30 Hours)	DGT/VSQ/N 0101 (v1.0)	Non-Core	2	1	30				30	20	30			50	5
Duration (in Hours) / Total Marks					9	120	150			270	150	175		125	450	100

Assessment - Minimum Qualifying Percentage

Please specify **any one** of the following:

Minimum Pass Percentage – Aggregate at qualification level: 50 % (Every Trainee should score specified minimum aggregate passing percentage at qualification level to successfully clear the assessment.)

Minimum Pass Percentage – NOS/Module-wise: ____% (Every Trainee should score specified minimum passing percentage in each mandatory and selected elective NOS/Module to successfully clear the assessment.)

Section 3: Training Related

1.	Trainer's Qualification and experience in the relevant sector (in years) <i>(as per NCVET guidelines)</i>	<p>12th Class (Science) with 5 years of relevant industry or training experience in Agriculture/Bee Biology/ Entomology/Apiculture related activities</p> <p>OR</p> <p>Ex-Service-Man including Ex-Paramilitary personnel: Minimum Qualification is 10+2 with an Honorable Discharge/Pension*</p> <p>*SSC would consider a relaxation/waiver of sector specific experience on case to case basis. Class 12th with Science (With any Government Certificate Program in Bee Keeping/ Apiculture)</p> <p>OR</p> <p>Diploma (Agriculture / Bee Keeping) with 3 years of relevant industry or training experience in Agriculture/Bee Biology/ Entomology/Apiculture related activities</p> <p>OR</p> <p>Graduate in any stream except Agriculture / Horticulture / Entomology & Apiculture and related streams with 2 years of relevant industry or training experience in Agriculture/Bee Biology/ Entomology/Apiculture related activities**</p> <p>**For the school Program minimum qualification of the Trainer should be Graduate (Zoology/Agriculture / Horticulture / Entomology & Apiculture and related streams) with minimum 3 years Teaching experience (will be considered industry experience)</p> <p>OR</p> <p>B.Sc. (Agriculture/ Horticulture/ Entomology & Apiculture and related streams) with 1 year of relevant industry or training experience in Agriculture/Bee Biology/ Entomology/Apiculture related activities</p> <p>OR</p> <p>Post Graduate in Agriculture/ Horticulture/ Entomology & Apiculture and related streams</p>
2.	Master Trainer's Qualification and experience in the relevant sector (in years) <i>(as per NCVET guidelines)</i>	<p>5 year of training experience in Agriculture/Bee Biology/Entomology/Apiculture related activities after Graduation in any stream except Agriculture / Horticulture / Entomology & Apiculture and related streams) with 2 years of relevant industry experience</p> <p>OR</p> <p>5 year of training experience in Agriculture/Bee Biology/Entomology/Apiculture related activities after B.Sc. (Agriculture/ Horticulture/ Entomology & Apiculture and related streams) with 1 year of relevant industry</p> <p>OR</p> <p>5 year of training experience in Agriculture/Bee Biology/Entomology/Apiculture related activities after Post Graduation (Agriculture/ Horticulture/ Entomology & Apiculture and related streams).</p>
3.	Tools and Equipment Required for Training	<p><input checked="" type="checkbox"/>Yes <input type="checkbox"/>No <i>(If "Yes", details to be provided in Annexure)</i></p>

4.	In Case of Revised Qualification, Details of Any Upskilling Required for Trainer	NA
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Section 4: Assessment Related

1.	Assessor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	B.Sc. (Agriculture/ Environmental Science/ Entomology and related streams) with 5 years of relevant industry experience in Agriculture/ Bee Biology/ Entomology/ Apiculture and related activities OR M.Sc. (Agriculture/ Environmental Science/ Entomology and related streams) with 2 years of relevant industry experience in Agriculture/ Bee Biology/ Entomology/ Apiculture and related activities OR PhD (Agriculture/ Environmental Science/ Entomology and related streams) with 1 year of relevant industry experience in Agriculture/ Bee Biology/ Entomology/ Apiculture and related activities
2.	Proctor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	Diploma/Graduate (It is mandatory for a proctor to have technical knowledge/IT knowledge Once a proctor has been on-boarded by any AA, they are oriented about skill ecosystem along with do's and don'ts .)
3.	Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	M.Sc. (Agriculture/ Environmental Science/ Entomology and related streams) with 10 years of relevant industry experience in Agriculture/ Bee Biology/ Entomology/ Apiculture and related activities OR PhD (Agriculture/ Environmental Science/ Entomology and related streams) with 10 years of relevant industry experience in Agriculture/ Bee Biology/ Entomology/ Apiculture and related activities
4.	Assessment Mode (Specify the assessment mode)	Offline
5.	Tools and Equipment Required for Assessment	<input checked="" type="checkbox"/> Same as for training <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (details to be provided in Annexure-if it is different for Assessment)

Section 5: Evidence of the need for the Qualification

Provide Annexure/Supporting documents name.

1.	Latest Skill Gap Study (not older than 2 years) (Yes/No): Under PMKVY Scheme
2.	Latest Market Research Reports or any other source (not older than 2 years) (Yes/No): Under PMKVY Scheme
3.	Government /Industry initiatives/ requirement (Yes/No): Government Initiative, part of PMKVY 4.0
4.	Number of Industry validation provided: 16

5.	Estimated nos. of persons to be trained and employed: 300
6.	Evidence of Concurrence/Consultation with Line Ministry/State Departments: Yes, received concurrence from Horticulture Division, Ministry of Agriculture & Farmers Welfare, Department. of Agriculture, Coop. and Farmers Welfare

Section 6: Annexure & Supporting Documents Check List

Specify Annexure Name / Supporting document file name

1.	Annexure: NCrf/NSQF level justification based on NCrf level/NSQF descriptors <i>(Mandatory)</i>	<i>Annexure-1</i>
2.	Annexure: List of tools and equipment relevant for qualification <i>(Mandatory, except in case of online course)</i>	<i>Annexure-2</i>
3.	Annexure: Detailed Assessment Criteria <i>(Mandatory)</i>	<i>Annexure-5</i>
4.	Annexure: Assessment Strategy <i>(Mandatory)</i>	<i>Annexure-6</i>
5.	Annexure: Blended Learning <i>(Mandatory, in case selected Mode of delivery is “Blended Learning”)</i>	<i>NA</i>
6.	Annexure: Multiple Entry-Exit Details <i>(Mandatory, in case qualification has multiple Entry-Exit)</i>	<i>NA</i>
7.	Annexure: Acronym and Glossary <i>(Optional)</i>	
8.	Supporting Document: Model Curriculum <i>(Mandatory – Public view)</i>	<i>Annexure-7</i>
9.	Supporting Document: Career Progression <i>(Mandatory - Public view)</i>	Bee Breeder /Pollination Service Provider(F&V) (L5)
10.	Supporting Document: Occupational Map <i>(Mandatory)</i>	<i>Annexure-8</i>
11.	Supporting Document: Assessment SOP <i>(Mandatory)</i>	<i>Annexure-9</i>
12.	Any other document you wish to submit:	

Annexure 1: Evidence of Level

NCrF/NSQF Level Descriptors	Key requirements of the job role/ outcome of the qualification	How the job role/ outcomes relate to the NCrF/NSQF level descriptor	NCrF/NSQF Level
Professional Theoretical Knowledge/Process	<ul style="list-style-type: none"> Select the site and system for beekeeping 	A Beekeeper is responsible for carrying out beekeeping operations which include preparing for and setting up beehives; procuring and introducing bees in hives, and maintaining the bees and beehives. The individual is also responsible for harvesting, processing and marketing honey and related produce.	3
Professional and Technical Skills/ Expertise/ Professional Knowledge	<ul style="list-style-type: none"> Perform pest, disease and nuisance management Optimise resource utilisation Perform waste management Practice inclusion at work Administer appropriate emergency procedures 	The job holder is expected to have knowledge to follow the relevant preventive practices to prevent pests and disease infestation in beehives, identify the signs of relevant pests and diseases that infest beehives, maintain the record of inspection of beehives and treatment applied to them, follow the recommended practices to prevent different types of nuisance to bees, apply the recommended treatment as per the prescription to beehives, optimise the usage of water and other resources in various tasks and processes, plug water leakages to prevent its wastage, segregate waste into appropriate categories, recycle the recyclable waste appropriately and dispose the non-recyclable waste in an environment-friendly manner, adopt gender- neutral behaviour at work, empathise with Persons with Disabilities (PWD), follow procedures for dealing with accidents, fires and emergencies, use emergency equipment in accordance with the manufacturer's specifications and workplace requirements, report details of first aid administered in accordance with workplace procedures.	3
Employment Readiness & Entrepreneurship	<ul style="list-style-type: none"> Prepare and install beehives 	The job holder is expected to select a location for the installation of beehives within the recommended	3

Skills & Mind-set/Professional Skill	<ul style="list-style-type: none"> • Harvest honey and other bee produce • Grade and store the produce • Maintain a clean and safe workplace 	<p>distance from the flower field/ forest, assemble the beehives using the recommended type of wood and other relevant materials, install the beehives with rectangular frames inside them, set up the queen excluder as per the requirement, identify the honeycombs containing ripe honey which are sealed, extract honey, propolis, pollen, royal jelly and bee venom from honeycombs, unfreeze honeycombs with hot water, steam or solar heat, and filter the melted honeycombs to obtain yellow beeswax, collect the extracted produce in separate and clean containers, protecting it from contamination, grade honey and other produce</p> <p>based on applicable grading parameters, pack honey and other produce in suitable packaging and label it with the relevant information, store the packed honey at the recommended temperature and humidity, carry out basic safety checks before operation of all tools, implements, and machinery and report identified hazards, follow the instructions mentioned on the labels of chemicals/pesticides/fumigants etc, assess risks prior to performing manual handling jobs, work in a manner that minimises environmental damage, follow government / workplace advisories in case of outbreak of any disease/disaster.</p>	
Broad Learning Outcomes/Core Skill	<ul style="list-style-type: none"> • Arrange the required resources and plan beekeeping operations • Select, procure and introduce bees in beehives • Inspect and manage the beehives • Market the produce 	<p>The job holder is expected to select an approved vendor based on the price and quality of required tools, equipment, Personal Protective Equipment (PPE) and accessories, purchase the required resources according to the requirement and store them appropriately, plan the beekeeping operations according to the flowering season to ensure easy availability of nectar and pollen for the optimum growth of bees, select the appropriate species of bee for apiculture, ensuring it produces the</p>	<p>3</p>

		required quality of honey, select an approved vendor and purchase the package of selected bee species, clean the beehives thoroughly before introducing bees in them, introduce bees in beehives following the recommended procedure, identify the potential buyers and markets for honey and other bee produce, maintain the manual and/ or electronic record of sales and payments.	
Responsibility	<ul style="list-style-type: none"> • Carrying out beekeeping operations • Procuring and introducing bees in hives • Maintaining the bees and beehives 	A Beekeeper is responsible for carrying out beekeeping operations which include preparing for and setting up beehives; procuring and introducing bees in hives, and maintaining the bees and beehives. The individual is also responsible for harvesting, processing and marketing honey and related produce.	3

Annexure 2: Tools and Equipment (Lab Set-Up)

List of Tools and Equipment

Batch Size: 30

S. No.	Tool / Equipment Name	Specification	Quantity for specified Batch size
1	Wax cutter or knife	Nos	4
2	Beekeepers veil	Nos	6
3	Safety Shoes	Pairs	6
4	Beekeepers Suit	Nos	6
5	Sieve	Nos	4
6	Hand Gloves	Nos	30
7	Moisture Indicator	Nos	1
8	Cone/Funnel to pour honey into jar	Nos	4
9	Thermometer	Nos	4
10	Face Masks / Face Cover	Nos	30
11	First aid box	Nos	1
12	Video recording equipment	Nos	1
13	Beekeeping Brush	Nos	4
14	A box bee hive with a complete colony of bees	Nos	4

15	Hive uncapping knife	Nos	4
16	Scraper	Nos	4
17	Bee brush	Nos	4
18	Honey extractor	Nos	2

Classroom Aids

The aids required to conduct sessions in the classroom are:

1. Whiteboard
2. Markers

Annexure3: Industry Validations Summary

Provide the summary information of all the industry validations in table. This is not required for OEM qualifications.

S. No	Organization Name	Representative Name	Designation	Contact Address	Contact Phone No	E-mail ID	LinkedIn Profile (if available)
1.	Adventz Centre	Mr. D.J.Ligade	Chief Manager	Maharashtra	9527005290	aaic.solapur@adventz.com	
2.	HITHKARI NURSERY,MUTHAGADAHALL I	Dr.Kariyanna	Managing Director	Karnataka	9980012308	hithkariplants@gmail.com	
3	Sogetsu School	Mrs.Sanjeevani Sawantdesai	Faculty	Maharashtra	9833329391	sawantdesai@rediffmail.com	
4	Kerala Agricultural University	Dr. D Girija	Assistant Professor	Kerala	0487-2438011	cpbmb@rediffmail.com	
5	Boxco Logistics India Pvt. Ltd.	Mr.Vishal Sharma	Vice President	Maharashtra	9873197299	vishals@boxcoworld.com	
6	ANGRAU- Agriculture College- Rajamahendravaram	Dr S Dayakar	Professor and Head	Andhra Pradesh	9440336752	dayakarentomology@gmail.com	
7	National Horticultural Research And Development Foundation (NHRDF),New Delhi	HP Sharma	Join Director States	New Delhi	98238144925	delhi@nhrdf.com	
8	NHRDF Karnal	RB Singh	Assistant Director	Haryana	7827946606	karnal@nhrdf.com	
9	Narsee Monjee Institute of Management Studies (NMIMS)	Dr. Krishna Chaitanya Tirunagaru	Assistant Professor	Maharashtra	9488118249	krishna.tirunagaru@gnmims.edu	

10	ICAR Krishi Vigyan Kendra Kanhirangad	Dr Jeyaraj	Senior Scientist and Head	Kerala	0460-2226087	kvkkannur@kau.in	
11	KVK Golaghat	Dr. Bhoirab Gogi	SMS	Assam	8.64E+09	Bhoirab.aau@gmail.com	
12	CYSD	Niladri Bihari Sahoo	Senior programme Manager	Odisha	90400838867	niladri@cysd.org	
13	Siddha Development Research and Consultancy Private Limited	Ratnakar Panigrahi	Director	Odisha	9810687493	ratnakar@sdrc.co.in	
14	Arya Krishi Vikas O Anusandhan Kendra	Jay Choudhary	Partner	Jharkhand	9334140739	Akvak18@gmail.com	
15	Nalanada College of Horticulture	Dr. Pancham Kumar Singh	Associate Dean cum Principal	Bihar	9431450059	Coh.horticulture06@gmail.com	
16	Krishi Vigyan Kendra, Kannur, Kanhirangad	JAYARAJ	PROGRAMME COORDINATOR	Kerala	9074194179, 0460-2226087	jayaraj.p@kau.in, kvkkannur@kau.in	

Annexure4: Training & Employment Details

Training and Employment Projections:

Year	Total Candidates		Women		People with Disability	
	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities
2022-23	150	50	30	10		
2023-24	150	50	30	10		
2024-25	150	50	30	10		

Data to be provided year-wise for next 3 years

Training, Assessment, Certification, and Placement Data for previous versions of qualifications:

Qualification Version	Year	Total Candidates				Women				People with Disability			
		Trained	Assessed	Certified	Placed	Trained	Assessed	Certified	Placed	Trained	Assessed	Certified	Placed
1.0	2022-23	491	381	379		339	288	283					
1.0	2020-21	456	558	441		119	154	89					

Applicable for revised qualifications only, data to be provided year-wise for past 3 years.

List Schemes in which the previous version of Qualification was implemented:

1. PMKVY

Content availability for previous versions of qualifications:

☒ Participant Handbook ☒ Facilitator Guide ☐ Digital Content ☐ Qualification Handbook ☐ Any Other:

Languages in which Content is available: Hindi and English

Annexure 5: Detailed Assessment Criteria

Detailed assessment criteria for each NOS/Module are as follows:

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
AGR/N5303: Prepare for and start beekeeping operations	<i>Select the site and system for beekeeping</i>	8	10		6
	PC1. select a site for beekeeping ensuring it has the required temperature and Relative Humidity (RH), ensuring no dampness at the site	-	-	-	-
	PC2. ensure the presence of nectar and pollen yielding flowers in the recommended quantity near the site, along with trees for shading and a source of clean water	-	-	-	-
	PC3. ensure the site does not experience waterlogging	-	-	-	-
	PC4. carry out cost-benefit analysis and select an appropriate beekeeping system, after considering the economic aspects of different beekeeping systems	-	-	-	-
	<i>Arrange the required resources and plan beekeeping operations</i>	6	8		8
	PC5. select an approved vendor based on the price and quality of required tools, equipment, Personal Protective Equipment (PPE) and accessories, such as top bar hive/ Langstroth hive, smoker, honey extractor, comb foundation sheet, de-capping knife, bee brush, feeder, etc.	-	-	-	-
	PC6. purchase the required resources according to the requirement and store them appropriately	-	-	-	-
	PC7. plan the beekeeping operations according to the flowering season to ensure easy availability of nectar and pollen for the optimum growth of bees	-	-	-	-
	<i>Prepare and install beehives</i>	8	10		6
	PC8. select a location for the installation of beehives within the recommended distance from the flower field/ forest	-	-	-	-
	PC9. assemble the beehives using the recommended type of wood and other relevant materials	-	-	-	-
	PC10. apply the paint of recommended colour on the beehives according to the temperature of the region, to maintain the temperature in beehives, ensuring not to paint the inside	-	-	-	-
	PC11. set up the queen excluder as per the requirement	-	-	-	-

	PC12. install the beehives with rectangular frames inside them, and stack them on wooden stands appropriately to ensure stability and easy access for their management	-	-	-	-
	PC13. hang beehives as planned using strong and greased galvanised wires	-	-	-	-
	<i>Select, procure and introduce bees in beehives</i>	8	12		10
	PC14. select the appropriate species of bee for apiculture, ensuring it produces the required quality of honey and has the recommended life span	-	-	-	-
	PC15. select an approved vendor and purchase the package of selected bee species, ensuring the presence of queen bee, worker bees and male bees in the required number or coordinate with an expert to catch bees from the wild, ensuring the bees are healthy	-	-	-	-
	PC16. clean the beehives thoroughly before introducing bees in them	-	-	-	-
	PC17. introduce bees in beehives following the recommended procedure, maintaining the recommended number of bees in each beehive	-	-	-	-
	Total Marks	30	40	-	30
AGR/N5304: Inspect and maintain the beehives	<i>Inspect and manage the beehives</i>	18	22		20
	PC1. inspect the beehives during the conducive weather, using the relevant PPE and ensuring not to disturb the bee colonies	-	-	-	-
	PC2. identify the signs of swarming and absconding and take appropriate measures to prevent that	-	-	-	-
	PC3. identify the need and install additional frames and honeycomb foundation in beehives	-	-	-	-
	PC4. clean the beehives following the recommended procedure and using the appropriate tools and equipment	-	-	-	-
	PC5. ensure the availability of bee pasturage or bee forage in an adequate quantity for the survival and healthy growth of bees	-	-	-	-
	PC6. remove unnecessary and deformed honeycombs, ensuring no damage to other honeycombs	-	-	-	-
	PC7. ensure easy movement of bees and pollen carrying foragers into beehives	-	-	-	-
	PC8. follow the recommended practices to preserve honeycombs during the dearth period	-	-	-	-
	PC9. ensure appropriate shading from trees or through artificial means to protect bees from intense heat	-	-	-	-
	PC10. cover the beehives with gunny bags or rice straw and sprinkle them with the recommended quantity of water to regulate the temperature in beehives during summer	-	-	-	-

PC11. carry out winter packaging with the recommended material such as tar paper during periods of below normal temperatures, ensuring the bees in hives do not suffocate	-	-	-	-
PC12. prepare sugar solution and pollen to feed bees during the dearth period	-	-	-	-
PC13. feed the bee colonies with sugar syrup, pollen supplement, water and other recommended feed during the dearth period	-	-	-	-
PC14. unite the smaller colonies to enlarge colonies or divide large colonies to populate new beehives, using the relevant tools and equipment	-	-	-	-
PC15. follow the recommended practices to prevent dampness during the rainy season and ensure no waterlogging at the beekeeping site	-	-	-	-
PC16. inspect the colonies regularly during the swarming season to ensure no empty space is left in the combs, and add frames and dummy boards as per the requirement	-	-	-	-
PC17. prepare the bee colonies for the production of royal jelly	-	-	-	-
PC18. use a queen excluder to keep the queen out of the super chamber to ensure the quality of honey	-	-	-	-
PC19. identify the signs of colony collapse disorder and take appropriate remedial measures	-	-	-	-
PC20. follow the recommended practices to ensure the bee colonies are healthy and strong	-	-	-	-
<i>Perform pest, disease and nuisance management</i>	4	6		4
PC21. follow the relevant preventive practices to prevent pests and disease infestation in beehives	-	-	-	-
PC22. identify the signs of relevant pests and diseases that infest beehives such as wax moth, varroa mite, ant, termites, European foul brood, American foul brood, sac brood, etc.	-	-	-	-
PC23. apply the recommended treatment as per the prescription to beehives to remove the identified pests and disease	-	-	-	-
PC24. maintain the record of inspection of beehives and treatment applied to them	-	-	-	-
PC25. follow the recommended practices to prevent different types of nuisance to bees such as domestic animals, honey badgers, birds, vandals, etc.	-	-	-	-
<i>Optimise resource utilisation</i>	2	4		2
PC26. optimise the usage of water and other resources in various tasks and processes	-	-	-	-
PC27. plug water leakages to prevent its wastage	-	-	-	-
<i>Perform waste management</i>	6	8		4
PC28. segregate waste into appropriate categories	-	-	-	-
PC29. recycle the recyclable waste appropriately and dispose the non-recyclable waste in an environment-friendly manner	-	-	-	-

	Total Marks	30	40		30
AGR/N5305: Harvest, process and market honey and related produce	<i>Harvest honey and other bee produce</i>	12	16		14
	PC1. identify the honeycombs containing ripe honey which are sealed, with a fine layer of beeswax	-	-	-	-
	PC2. arrange the relevant tools and equipment for extracting honey such as hive tool, smoker, honey extractor, etc.	-	-	-	-
	PC3. select an appropriate time for harvesting honey and other raw produce	-	-	-	-
	PC4. follow the recommended practices to extract honey, propolis, pollen, royal jelly and bee venom from honeycombs, using the recommended PPE and equipment	-	-	-	-
	PC5. ensure no harm to bees during the raw produce extraction process	-	-	-	-
	PC6. unfreeze honeycombs with hot water, steam or solar heat, and filter the melted honeycombs to obtain yellow beeswax	-	-	-	-
	PC7. bleach the yellow beeswax with the recommended oxidizing agent such as hydrogen peroxide, sulfuric acid, or sunlight to obtain white beeswax	-	-	-	-
	PC8. collect the extracted produce in separate and clean containers, protecting it from contamination, ensuring minimum loss	-	-	-	-
	<i>Grade and store the produce</i>	8	12		8
	PC9. grade honey and other produce based on applicable grading parameters such as ripeness, colour, taste, purity, etc.	-	-	-	-
	PC10. sort out the produce based on their shelf-life	-	-	-	-
	PC11. pack honey and other produce in suitable packaging and label it with the relevant information in compliance with the applicable regulatory guidelines	-	-	-	-
	PC12. store the packed honey at the recommended temperature and humidity, ensuring the storage area is hygienic, dry and protected from direct sunlight	-	-	-	-
	<i>Market the produce</i>	10	12		8
	PC13. identify the potential buyers and markets for honey and other bee produce such as e- Mandi, local traders, exporters, etc.	-	-	-	-
	PC14. negotiate with the buyers to secure a profitable price for the produce	-	-	-	-
	PC15. arrange an appropriate mode of transport to ensure safe and hygienic delivery of produce to the buyer	-	-	-	-
	PC16. process the payment using the buyer-preferred e-payment method	-	-	-	-
	PC17. maintain the manual and/ or electronic record of sales and payments using the physical registers and/ or the relevant computer application	-	-	-	-
	Total Marks	30	40	-	30
AGR/N9903: Maintain health and safety at the workplace	<i>Maintain personal hygiene</i>	10	5	-	10
	PC1. wash hands, legs and face with soap/alcohol- based sanitizer at reasonable intervals	-	-	-	-

	PC2. wash the worn clothes with soap and sun-dry before use next time	-	-	-	-
	PC3. ensure the face is covered with mask or three layers of cloth-piece	-	-	-	-
	PC4. follow the workplace sanitisation norms including distancing from sick people	-	-	-	-
	<i>Maintain clean and safe workplace</i>	<i>15</i>	<i>15</i>		<i>15</i>
	PC5. carry out basic safety checks before operation of all tools, implements, and machinery and report identified hazards to the supervisor	-	-	-	-
	PC6. wear appropriate Personal Protective Equipment (PPE) while performing work in accordance with the workplace policy	-	-	-	-
	PC7. follow the instructions mentioned on the labels of chemicals/pesticides/fumigants etc. to avoid hazards	-	-	-	-
	PC8. assess risks prior to performing manual handling jobs, and work according to currently recommended safe practices	-	-	-	-
	PC9. sanitize equipment, tools and machinery before and after use	-	-	-	-
	PC10. use equipment and materials safely and correctly and return the same to designated storage after use	-	-	-	-
	PC11. dispose waste safely and correctly in the designated area	-	-	-	-
	PC12. recognize risks to bystanders and take required action to reduce the risks	-	-	-	-
	PC13. work in a manner which minimizes environmental damage, ensuring all procedures and instructions for controlling risks are followed	-	-	-	-
	PC14. report any accidents, incidents or problems without delay to an appropriate person and take necessary immediate action to reduce further danger	-	-	-	-
	PC15. follow government / workplace advisories in case of outbreak of any disease/disaster	-	-	-	-
	<i>Administer appropriate emergency procedures</i>	<i>15</i>	<i>5</i>		<i>10</i>
	PC16. follow procedures for dealing with accidents, fires and emergencies, including communicating location and directions to the location of emergency, as per the workplace requirements	-	-	-	-
	PC17. use emergency equipment in accordance with manufacturer's specifications and workplace requirements	-	-	-	-
	PC18. report provide treatment appropriate to the patient's injuries in accordance with recognized first aid techniques	-	-	-	-
	PC19. recover (if practical), clean, inspect/test, refurbish, replace and store the first aid equipment as appropriate	-	-	-	-
	PC20. report details of first aid administered in accordance with workplace procedures	-	-	-	-
	Total Marks	40	25	-	35
	<i>Introduction to Employability Skills</i>	<i>1</i>	<i>1</i>	-	-

DGT/VSQ/N0101: Employability Skills (30 Hours)	PC1. understand the significance of employability skills in meeting the job requirements	-	-	-	-
	<i>Constitutional values – Citizenship</i>	1	1	-	-
	PC2. identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices	-	-	-	-
	<i>Becoming a Professional in the 21st Century</i>	1	3	-	-
	PC3. explain 21st Century Skills such as Self- Awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset etc.	-	-	-	-
	<i>Basic English Skills</i>	2	3	-	-
	PC4. speak with others using some basic English phrases or sentences	-	-	-	-
	<i>Communication Skills</i>	1	1	-	-
	PC5. follow good manners while communicating with others	-	-	-	-
	PC6. work with others in a team	-	-	-	-
	<i>Diversity & Inclusion</i>	1	1	-	-
	PC7. communicate and behave appropriately with all genders and PwD	-	-	-	-
	PC8. report any issues related to sexual harassment	-	-	-	-
	<i>Financial and Legal Literacy</i>	3	4	-	-
	PC9. use various financial products and services safely and securely	-	-	-	-
	PC10. calculate income, expenses, savings etc.	-	-	-	-
	PC11. approach the concerned authorities for any exploitation as per legal rights and laws	-	-	-	-
	<i>Essential Digital Skills</i>	4	6	-	-
	PC12. operate digital devices and use its features and applications securely and safely	-	-	-	-
	PC13. use internet and social media platforms securely and safely	-	-	-	-
	<i>Entrepreneurship</i>	3	5	-	-
	PC14. identify and assess opportunities for potential business	-	-	-	-
	PC15. identify sources for arranging money and associated financial and legal challenges	-	-	-	-
	<i>Customer Service</i>	2	2	-	-
	PC16. identify different types of customers	-	-	-	-
	PC17. identify customer needs and address them appropriately	-	-	-	-
	PC18. follow appropriate hygiene and grooming standards	-	-	-	-
	<i>Getting ready for apprenticeship & Jobs</i>	1	3	-	-
	PC19. create a basic biodata	-	-	-	-
	PC20. search for suitable jobs and apply	-	-	-	-

	PC21. identify and register apprenticeship opportunities as per requirement	-	-	-	-
	Total Marks	20	30	-	
Grand Total		150	175		125

Annexure 6: Assessment Strategy

This section includes the processes involved in identifying, gathering, and interpreting information to evaluate the Candidate on the required competencies of the program.

1. 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 ground through qualified and ToA certified assessors.

While it is important that an individual has adequate knowledge and skills to perform a specific task, weight age for different aspects for 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 assessment; ASCI will certify the learners/candidates

2. Testing Environment

Assessments are conducted on laptops, Mobiles and android tablets via both offline and online mode depending on the internet connectivity at assessment location.

In remote locations/villages, assessments get delivered through tablets without the requirement of 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 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 training / within 7 days of completion of training.
- Assessment will be conducted at the training venue
- 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 same day. In case of more number of candidates, 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 usability of job roles/advantages /importance of adherence to procedures. Viva will be used to gauge trainee's confidence and correct knowledge in handling job situation

The question paper pre-loaded in the computer /Tablet and it will be in the language as requested by the training partner.

3. 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, behavioral traits and domain knowledge.

Theoretical Knowledge - Item constructs and types are determined by 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 which 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 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, do's and don'ts, subjective questions to check understanding of practical tasks.

Assessor has to go through orientation program organized by Assessment Agency. The training would give an overview to the assessors on the overall framework of QP evaluation. Assessor shall be given a NOS and PC level overview of each QP as applicable. 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 which will maintain standardization of marking scheme.

4. Type of Evidence and Evidence Gathering Protocol:

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

- Geo Tagging to track ongoing assessment
- AA's coordinator emails the list of documents and evidences (photos and videos) to the assessor one day prior to the assessment. List is mentioned below:
 - Signed Attendance sheet
 - Assessor feedback sheet
 - Candidate feedback sheet
 - Assessment checklist for assessor

- Candidate Aadhar/ID card verification
- Pictures of 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, 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 assessment, regular calls and video calls are done.
- On-boarding and training of assessor and proctor is done on timely basis to ensure that quality of the assessment should be maintained.
- Training covers the understanding of QP, NSQF level, NOS and assessment structure

5. *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 check on assessment quality and ensure assessment is carried out in fair and transparent manner
- Aadhar verification of candidates
- Evening Check (Post Assessment): Calls are made to the ground team to ensure event is over by what time and the documentation is done in proper manner or not.
- TP Calling: To keep check on malpractice activity, independent audit team calls to TP on recorded line to take confirmation if there was any malpractice activity observed in assessment on part of AA/SSC team. If calls are not connected, email is send to TP Spoc for taking their confirmation
- Video and Picture Evidence: Backend team collects video and pictures for assessment on real time basis and highlights any issue like, Students sitting idle/trainer allowed for helping out candidates during assessment.
- Surprise Visit: Time to time SSC/AA Audit team can visit the assessment location and do surprise audit for assessment process carried out by ground team.
- Geo Tagging: On day of assessment, each technical spoc is required to login in our internal app which is Geo tagged. Any deviation with centre address needs to be highlighted to assessment team on real-time basis.

Method for assessment documentation, archiving, and Access:

- ASCI has fully automated result generation process in association with multiple AAs
- Theory, Practical and Viva marks forms the basis of the results and encrypted files generated to avoid data manipulation. All responses captured and stored in System with Time-Stamps at the end of AAs and SSC. NOS-wise and PC-wise scores can be generated.
- Maker Checker concept: 1 person prepares results and other audit result which is internally approved by AA at first and then gets vetted at the end of SSC
- All soft copy of documents is received from the on-ground tech team over mail. 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 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 conclusion of project or scheme)

Annexure: Acronym and Glossary

Acronym

Acronym	Description
AA	Assessment Agency
AB	Awarding Body
ISCO	International Standard Classification of Occupations
NCO	National Classification of Occupations
NCrF	National Credit Framework
NOS	National Occupational Standard(s)
NQR	National Qualification Register
NSQF	National Skills Qualifications Framework
OJT	On the Job Training

Glossary

Term	Description
National Occupational Standards (NOS)	NOS define the measurable performance outcomes required from an individual engaged in a particular task. They list down what an individual performing that task should know and also do.
Qualification	A formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards
Qualification File	A Qualification File is a template designed to capture necessary information of a Qualification from the perspective of NSQF compliance. The Qualification File will be normally submitted by the awarding body for the qualification.
Sector	A grouping of professional activities on the basis of their main economic function, product, service or technology.
Long Term Training	Long-term skilling means any vocational training program undertaken for a year and above. https://ncvet.gov.in/sites/default/files/NCVET.pdf