



QUALIFICATION FILE

Professional Gardening and Nursery Management

- 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: 4.5

Submitted By:

Agriculture Skill Council of India

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

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Section 1: Basic Details

1.	Qualification Name	Professional Gardening and Nursery Management							
2.	Sector/s	Agriculture							
3.	Type of Qualification: <input checked="" type="checkbox"/> New <input type="checkbox"/> Revised <input type="checkbox"/> Has Electives/Options <input type="checkbox"/> OEM	NQR Code & version of existing/previous qualification: <i>(change to previous, once approved)</i> NA	Qualification Name of existing/previous version: NA						
4.	a. OEM Name b. Qualification Name <i>(Wherever applicable)</i>	NA							
5.	National Qualification Register (NQR) Code &Version <i>(Will be issued after NSQC approval)</i>	QG-4.5-AG-00777-2023-V1-ASCI	6. NCrF/NSQF Level: 4.5						
7.	Award (Certificate/Diploma/Advance Diploma/ Any Other <i>(Wherever applicable specify multiple entry/exits also & provide details in annexure)</i>	LTT Certificate							
8.	Brief Description of the Qualification	This is a specialized education, designed to develop or strengthen specific career skills in gardening, nursery and horticulture trades. This course is designed to provide participants/students with the skills and knowledge they need to work in a variety of gardening-related occupations, such as Gardener, Landscaper, Nursery manager/worker, Green/Poly house manager, etc.							
9.	Eligibility Criteria for Entry for Student/Trainee/Learner/Employee	a. Entry Qualification & Relevant Experience: <table border="1" style="margin-left: 40px;"> <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>12th Grade Pass or Equivalent</td> <td></td> </tr> </tbody> </table> b. Age: 18 Years		S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)	1	12 th Grade Pass or Equivalent	
S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)							
1	12 th Grade Pass or Equivalent								
10.	Credits Assigned to this Qualification, Subject to Assessment <i>(as per National Credit Framework (NCrF))</i>	40	11. Common Cost Norm Category (I/II/III) <i>(wherever applicable):</i> II						
12.	Any Licensing requirements for Undertaking Training on This Qualification <i>(wherever applicable)</i>	NA							

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.	Raise saplings in the nursery for transplanting in the garden	AGR/N0801 (v2.0)	Core	3	1	15	15			30	30	40		30	100	5
2.	Raise, maintain, transplant and harvest seedlings	AGR/N0820 (v2.0)	Core	3	1	10	20			30	30	40		30	100	5
3.	Assist in managing plant health and nursery operations	AGR/N0821 (v3.0)	Core	3	3	40	50			90	30	40		30	100	5
4.	Prepare to set up the garden	AGR/N0802 (v2.0)	Core	4	1	15	15			30	30	40		30	100	5
5.	Set up the garden as per the plan	AGR/N0803 (v2.0)	Core	4	1	10	20			30	30	40		30	100	5
6.	Design, set up and maintain a rooftop garden	AGR/N0843 (v1.0)	Core	4	1	15	15			30	30	40		30	100	5
7.	Carry out vertical gardening	AGR/N0847 (v1.0)	Core	4.5	1	15	15			30	30	40		30	100	5
8.	Grow a bonsai tree	AGR/N0848 (v1.0)	Core	4.5	1	10	20			30	30	45		25	100	5
9.	Carry out greenhouse operations and maintain the greenhouse	AGR/N1008 (v3.0)	Core	3	3	30	60			90	30	40		30	100	5

S. No	NOS/Module Name	NOS/Module Code & Version <i>(if applicable)</i>	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 (%) <i>(if applicable)</i>	
10.	Set up and maintain the hydroponic system and plants/ crop	AGR/N0822 (v2.0)	Core	4	2	25	35			60	30	40		30	100	5	
11.	Set up and maintain the aeroponic farm	AGR/N0846 (v2.0)	Core	4	1	10	20			30	30	40		30	100	5	
12.	Carry out harvesting, post-harvest management and marketing activities	AGR/N0823 (v2.0)	Core	4	1	15	15			30	30	40		30	100	5	
13.	Prepare for plant tissue culture	AGR/N8102 (v2.0)	Core	4	1	15	15			30	30	40		30	100	5	
14.	Carry out plant tissue culture	AGR/N8103 (v2.0)	Core	4	2	20	40			60	30	40		30	100	5	
15.	Transplant the tissue cultured plants and maintain records	AGR/N8115 (v1.0)	Core	4	1	10	20			30	30	40		30	100	5	
16.	Set up and maintain nursery under protected condition	AGR/N1011 (v1.0)	Core	5	3	30	60			90	30	50		20	100	5	
17.	Carry out protected cultivation of flower crops	AGR/N1013 (v1.0)	Core	5	3	30	60			90	30	45		25	100	5	
18.	Undertake basic entrepreneurial activities for small enterprise	AGR/N9908 (v3.0)	Non-Core	4	1	20	10			30	30	40		30	100	5	
19.	Maintain health and safety at the workplace	AGR/N9903 (v4.0)	Non-Core	4	1	05	25			30	40	25		35	100	5	
20.	Employability Skills (60 Hours)	DGT/VSQ/N0102 (v1.0)	Non-Core	4	2	60				60	20	30			50	5	
21.	OJT				9			270		270							
TOTAL						40	400	530	270		1200	600	795		555	1950	100

Assessment - Minimum Qualifying Percentage

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

Minimum Pass Percentage – Aggregate at qualification level: 70% (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) (as per NCVET guidelines)	Diploma in Agriculture/Horticulture with 3 years of Experience in Horticultureand related field* * 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. OR Graduate with 2 years of Experience in Horticultureand related field OR Graduate in Agriculture/Horticulture with 1 year of Experience in Horticultureand related field OR Post Graduate in Agronomy /Horticulture/Floriculture/ Soil science/ Botany/Plant Breeding/ Biotechnology with 0.5 year of experience in Horticultureand related field
2.	Master Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)	Graduate (Agriculture / Horticulture / Forestry and related field) with 5 years of experience (3 years of Sector Specific Experience and 5 years of training experience) OR Post- Graduate (Agronomy / Horticulture / Forestry and related field) with 5 years of experience (2 years of Sector Specific Experience and 5 years of training experience) OR PhD- Graduate (Agronomy / Horticulture / Forestry and related field) with 5 years of experience (2 years of Sector Specific Experience and 2 years of training experience)
3.	Tools and Equipment Required for Training	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (If "Yes", details to be provided in Annexure)
4.	In Case of Revised Qualification, Details of Any Upskilling Required for Trainer	NA

Section 4: Assessment Related

1.	Assessor’s Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	B.Sc (Agriculture/ Botany/ Forestry/ Horticulture/ Floriculture and related streams) with 5 years of experience in Agriculture/ Forestry/ Horticulture and related experience OR M.Sc (Agronomy/ Botany/ Forestry/ Horticulture/ Floriculture and related streams) with 2 years of experience in Agriculture/ Forestry/ Horticulture and related experience OR PhD in Agronomy/ Botany/ Forestry/ Horticulture/ Floriculture and related streams with 1 year of experience in Agriculture/ Forestry/ Horticulture and related experience
2.	Proctor’s Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	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 (Agronomy/ Botany/ Forestry/ Horticulture/ Floriculture and related streams) with 10 years of experience in Agriculture/ Forestry/ Horticulture and related experience
4.	Assessment Mode (Specify the assessment mode)	Offline Internal Assessment (Midterm exams, Final exam, Practical exams, Project Work, Attendance, Participation in class discussions): 50% weightage External Assessment (MCQ, Practical Demonstration, Viva): 50% weightage
5.	Tools and Equipment Required for Assessment	<input 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): No
2.	Latest Market Research Reports or any other source (not older than 2 years) (Yes/No): No
3.	Government /Industry initiatives/ requirement (Yes/No): Yes

4.	Number of Industry validation provided: NA. NOSs taken from the already NSQC Approved Qualifications
5.	Estimated nos. of persons to be trained and employed: 50/year
6.	Evidence of Concurrence/Consultation with Line Ministry/State Departments: If “No”, why: NOSs taken from the already NSQC Approved Qualifications

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

ANNEXURE 1:

Note:

1. Under TOT Programme for Master Trainers the orientation covers only the Skill Eco system, QP-NOS, NSQF, TDP etc. and exposure on Platform Skills. No orientation is conducted on the domain specialty.
2. All Master Trainer nominees are to undergo two assessments one each on ‘domain’ subject and second on ‘platform skills’. Pass percentage for Master Trainer is 90% in both the Domain and Platform assessment.
3. Nominated Master trainers should ‘in their own time’ study the Qualification Pack on the Job Roles for which certification is desired (available on ASCI web site with down load option) Assessments will be conducted on the relevant QP.

Annexure 2: 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	Possesses knowledge in multidisciplinary contexts, broadly, within the chosen fields of technology/ skills/ job role.	The person will possess knowledge related to various plant propagation methods, care and maintenance of nursery, garden, vertical garden, rooftop garden, bonsai, protected cultivation, plant tissue culture, etc.	4.5
Professional and Technical Skills/ Expertise/ Professional Knowledge	Possesses a range of professional and technical skills, displays clarity of knowledge and practice in broad range of activities/ tasks. Skill to clearly identify the relevant tools	The person will be skilled in plant propagation activities, designing a garden/rooftop garden/vertical garden, preparing a bonsai, care and management of a nursery/garden, carry out cultivation of flowers in open fields and in protected environment.	4.5
Employment Readiness & Entrepreneurship	A versatile professional		4.5

Skills & Mind-set/Professional Skill	with good communication, digital and financial literacy, ethical values, self-management and may have entrepreneurial mindset.	The person post undertaking this course will be able to set up a nursery and undertake flower cultivation for commercial purpose and will able to gather requirements of the client to design a garden, take loans from the financial institutions, if required and calculate the B:C ratio.	
Broad Learning Outcomes/Core Skill	A skilled professional with technical expertise, adept at solving complex problems and improving output.	The person would be able to: <ul style="list-style-type: none"> ● Propagate plants in a nursery using a variety of propagation methods ● Prepare for and raising seedlings in a nursery along with their transplantation ● Monitor plant health and performing general upkeep of the nursery/garden ● Conduct a site survey to plan a garden and arrange the relevant material to plant the garden ● Set up a garden as per the client requirements Maintain the health and safety of self and co-workers at the workplace	4.5
Responsibility	Manages processes and procedures within broad parameters for defined activities.	The person will be able to manage the daily activities being undertaken in a nursery, garden, greenhouses.	4.5

Annexure 3: 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	Hose pipes		1
2	Shears		1
3	Weeder		1
4	Hedge cutters		1

5	Water pumps & equipments-- sprinkler systems or Drip System		1
6	Rubber gloves		15
7	Spade		1
8	Pots		1
9	Hand cutter		1
10	Knapsack sprayers		1
11	Different types of seeds		1
12	Trowel		1
13	Plant seedlings/cuttings		2
14	Seedling trays		1
15	Rake		1
16	Baskets		1
17	Hoe		1
18	Weedicides		1
19	Plant labels		1
20	Fertilizers		2
21	Khurpi		15
22	Face Masks		30
23	Gumboots		5
24	Video Recording Equipment		1
25	Pesticides		1
26	Jute & pvc bags		1
27	Germination equipment including heating mats		1
28	fertilizer injectors cum propagation mistlers		1
29	Plant Markers/Tags		10
30	Herbicides- Any		1
31	Fungicides- Any		1
32	hoses & nozzles		2
33	coco peat		1
34	compost		1
35	vermicompost		1
36	Containers for plants		5

37	ventilating fans and air circulation tubes		1
38	Pesticides Sprayer		1
39	Digging Stick		1
40	Watering can		1
41	Lawn blower small		1
42	Grass stitcher		1
43	Green House/Poly house		1
44	Bluelab EC/pH/Temp Combo Probe		1
45	pH Test Indicator		1
46	Horticultural Poly Bags		1
47	Measuring Spoon		1
48	Spray Nozzles		1
49	Neem Oil Spray		1
50	Insect Trap		1
51	Plant Nutrients		1
52	Sponge		1
53	Culture Tubes		5
54	Beaker		6
55	Blotting paper		1
56	Labels		1
57	Incubators		1
58	Microscope		1
59	Autoclave		1
60	Laminar air flow		1
61	Burettes and Pipettes		5
62	Refrigerator		1
63	Chemicals/reagents		30
64	Parafilm/cotton plug		1
65	Planters		150
66	Bonsai Tray/Container		30
67	Copper/Aluminium wire		60
68	Rooting hormone		100
69	Root trainers of various sizes		60

Classroom Aids

The aids required to conduct sessions in the classroom are:

1. White board
2. White board markers

Annexure: 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	Friends Rosery	Mr Vishal Agarwal	Proprietor	Lucknow, UP	9335274192	friends.rosery@gmail.com	

Annexure: 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
2024	50	30				
2025	50	30				
2026	50	30				

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

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.
- 2.

Content availability for previous versions of qualifications:

Participant Handbook Facilitator Guide Digital Content Qualification Handbook Any Other:

Languages in which Content is available:

Annexure 4: 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/N0801: Raise saplings in the nursery for transplanting in the garden	<i>Prepare for nursery operations</i>	6	8	-	8
	PC1. select the relevant varieties of plants to grow in the garden as per the season and client preferences	-	-	-	-
	PC2. arrange the plant seeds, fertilizer, insecticides/ pesticides and poly bags/ containersto raise saplings	-	-	-	-
	PC3. ensure the availability of water andelectricity for nursery operations	-	-	-	-
	PC4. organise the necessary tools, implementsand Personal Protective Equipment (PPE) for nursery operations	-	-	-	-
	PC5. construct the shade net house, store-room,compost area, etc.	-	-	-	-
	PC6. erect framed structures such as poly- tunnels, hardening chamber, mist chamber forplant propagation	-	-	-	-
	PC7. prepare farmyard manure or compost as perthe Standard Operating Procedure (SOP)	-	-	-	-
	PC8. conduct a soil test to identify the soiltreatment requirements	-	-	-	-
	PC9. apply the necessary treatment on the soil asper the requirement	-	-	-	-
	<i>Prepare the nursery bed</i>	8	12	-	8
	PC10. dry plough the nursery field as required	-	-	-	-
	PC11. apply fertilizers, farmyard manure orcompost uniformly on the field in the recommended quantity	-	-	-	-
	PC12. water the field with the recommendedquantity of water	-	-	-	-
PC13. puddle the field for the recommendedduration of time	-	-	-	-	
PC14. level the field using an appropriateimplement	-	-	-	-	

<i>Propagate saplings through seeds</i>	8	10	-	8
PC15. sort out the poor-quality/ damaged seeds	-	-	-	-
PC16. fill in the poly bags and containers with therecommended quantity of treated soil	-	-	-	-
PC17. carry out pre-sowing treatment of theseeds	-	-	-	-
PC18. create raised, level or sunken seedbedaccording to the local conditions	-	-	-	-
PC19. sow seeds in the seedbed, poly bags andcontainers at the recommended depth	-	-	-	-
PC20. apply the recommended quantity of waterand manure/ fertilizer on the sown seeds as per the SOP	-	-	-	-
PC21. maintain saplings in the seedbed/ poly bags/ containers for the recommended period	-	-	-	-
PC22. acclimatise the saplings beforetransplanting	-	-	-	-
<i>Propagate plants through cutting, root division,layering and budding</i>	8	10	-	6
PC23. select a healthy plant to take cutting from	-	-	-	-
PC24. extract stems of the recommendedspecifications from the plant	-	-	-	-
PC25. use the stems to propagate plants maintaining the required level of moisture andsunlight exposure	-	-	-	-
PC26. select a healthy and grown plant for rootdivision	-	-	-	-
PC27. create root divisions from the plant's root	-	-	-	-
PC28. use the root divisions to propagate plantsmaintaining the recommended environment	-	-	-	-
PC29. select an appropriate method of layeringaccording to the type of plant	-	-	-	-
PC30. cover the stem / tip / trunk of the plantwith soil according to the selected method	-	-	-	-
PC31. apply the recommended quantity of waterand fertilizer to support the growth of roots	-	-	-	-
PC32. prepare a rootstock for budding	-	-	-	-

	PC33. cut a bud-stick from a healthy and disease-free plant with the required characteristics	-	-	-	-
	PC34. prepare and use bud-scion to propagate plants	-	-	-	-
	PC35. apply the approved pesticides/ insecticides to protect the plants from pests and diseases	-	-	-	-
	PC36. maintain the record of nursery operations	-	-	-	-
	NOS Total	30	40	-	30
AGR/N0820: Raise, maintain, transplant and harvest seedlings	<i>Prepare to raise seedlings</i>	5	10	-	10
	PC1. identify the plants and their varieties to be grown according to the season	-	-	-	-
	PC2. obtain the seeds of the relevant varieties, fertilizer and other inputs such as poly bags and containers from an authorised seller	-	-	-	-
	PC3. sort out the seeds of poor quality	-	-	-	-
	PC4. store all the inputs in a safe storage area	-	-	-	-
	PC5. organise the necessary tools, implements and Personal Protective Equipment (PPE) for nursery operations	-	-	-	-
	<i>Raise seedlings for transplantation</i>	10	10	-	5
	PC6. prepare the correct mixture of soil and manure/ fertilizer	-	-	-	-
	PC7. prepare the containers/ poly bags/ germination beds of the appropriate size for planting seeds	-	-	-	-
	PC8. fill in the containers/ poly bags with the prepared soil	-	-	-	-
	PC9. plant seeds in containers/ poly bags/ germination beds at the depth recommended for the seed variety	-	-	-	-
	PC10. water the planted seeds as per the recommended quantity	-	-	-	-
	PC11. maintain an appropriate level of moisture and temperature to aid germination of seeds	-	-	-	-
	PC12. apply the recommended quantity of fertilizers and insecticides on seedlings while protecting them from damage	-	-	-	-
PC13. arrange for protection of seedlings from excessive heat/ cold and strong winds	-	-	-	-	

	PC14. store the seedlings in an area with good air circulation	-	-	-	-
	PC15. remove dead and unhealthy seedlings as per the Standard Operating Procedure (SOP)	-	-	-	-
	PC16. maintain seedlings until they are ready to be transplanted	-	-	-	-
	<i>Carry out harvesting and post-harvesting activities</i>	10	10	-	5
	PC17. harvest seedlings at their appropriate stage of growth	-	-	-	-
	PC18. pot the seedlings and label them	-	-	-	-
	PC19. dip the cut flowers into a disinfectant appropriately	-	-	-	-
	PC20. count the cut flowers into bunches	-	-	-	-
	PC21. pack the flowers appropriately in cardboard boxes for being transported	-	-	-	-
	<i>Transplant the seedlings</i>	5	10	-	10
	PC22. prepare the appropriate type of nursery bed such as sunken bed, level bed, raised bed for transplantation of seedlings	-	-	-	-
	PC23. check that the soil is well-fertilized and aerated	-	-	-	-
	PC24. create holes of the recommended dimensions in the soil	-	-	-	-
	PC25. retrieve the seedlings from containers/ poly bags while protecting them from damage	-	-	-	-
	PC26. plant the seedlings in the holes and fill them with soil	-	-	-	-
	PC27. apply mulch or compost around these seedlings	-	-	-	-
	PC28. water the transplanted seedlings as per the recommended quantity	-	-	-	-
	PC29. maintain the record of seedlings transplanted in the nursery	-	-	-	-
	NOS Total	30	40	-	30
AGR/N0821: Assist in managing plant health and nursery operations	<i>Manage the nutrient requirements of plants</i>	4	8	-	4
	PC1. identify the nutrient requirements of different types of plants in the nursery	-	-	-	-

PC2. use the appropriate growth medium for the plants such as loamy soil mixed with sand, peat, sawdust etc.	-	-	-	-
PC3. apply the appropriate plant growth regulators such as abscisic acid, gibberellins, cytokinins, ethylene using the recommended application method	-	-	-	-
PC4. apply fertilizers and water on the plants with the recommended quantity at appropriate intervals	-	-	-	-
PC5. carry out trimming and pruning of the plants as per the instructions received	-	-	-	-
PC6. monitor the growth of plants as per the SOP	-	-	-	-
<i>Protect plants from pests and diseases</i>	6	10	-	10
PC7. identify the pests and diseases that may affect the nursery plants	-	-	-	-
PC8. implement the relevant preventive measures to control pests and diseases	-	-	-	-
PC9. examine the plants regularly to identify any disease and pest infestation	-	-	-	-
PC10. apply the relevant treatment to free the plants from the identified pests/ diseases	-	-	-	-
PC11. maintain the record of the insecticides/pesticides used on plants	-	-	-	-
<i>Assist in managing nursery operations</i>	6	10	-	10
PC12. maintain the cleanliness of nursery infrastructure	-	-	-	-
PC13. remove the sources of mosquito breeding	-	-	-	-
PC14. monitor water drainage in the nursery	-	-	-	-
PC15. carry out treatment of waste water as per instructions from the supervisor	-	-	-	-
PC16. use the nursery waste material for composting/ vermi-composting	-	-	-	-
PC17. follow the planting and maintenance schedules	-	-	-	-
PC18. carry out basic repair and maintenance of the nursery infrastructure, tools and implements	-	-	-	-
PC19. manage the stock of nursery operation inputs				

		-	-	-	-
	PC20. sell the raised seedlings/ plants to customers	-	-	-	-
	PC21. maintain various records such as use of plant growth regulators/ fertilizers/ pesticides, plant growth, sales and payments	-	-	-	-
	<i>Optimise resource utilisation</i>	6	6	-	2
	PC22. optimise usage of water/ electricity/ energy in various tasks/ activities/ processes	-	-	-	-
	PC23. connect electrical tools and equipment safely and turn off when not in use	-	-	-	-
	PC24. segregate waste into different categories	-	-	-	-
	PC25. dispose the non-recyclable waste appropriately	-	-	-	-
	PC26. deposit the recyclable and reusable material at the identified location	-	-	-	-
	<i>Maintain effective communication and co-ordination at work</i>	8	6	-	4
	PC27. co-ordinate with co-workers to achieve organisational goals and deal with emergencies/accidents	-	-	-	-
	PC28. maintain work-related information in the prescribed format	-	-	-	-
	PC29. report out of authority issues to the supervisor	-	-	-	-
	NOS Total	30	40	-	30
AGR/N0802: Prepare to set up the garden	<i>Plan to set up the garden</i>	10	12	-	8
	PC1. conduct a survey of the site proposed for setting up the garden	-	-	-	-
	PC2. assess the soil and climate characteristics at the site to establish suitability for planting a garden	-	-	-	-
	PC3. co-ordinate with an authorised lab to identify the soil's micro and macro-nutrient requirements	-	-	-	-
	PC4. select the relevant soil treatment method to improve the quality of soil	-	-	-	-
	PC5. check if the site has adequate exposure to sunlight				

		-	-	-	-
	PC6. identify the varieties of plants, trees, grass, shrubs, hedges and edges suitable for growing in the climate	-	-	-	-
	PC7. measure the land area for preparing the layout of the garden	-	-	-	-
	PC8. calculate the spacing between plants/ trees/ shrubs and rows as per their variety and available land area	-	-	-	-
	PC9. select a pattern for planting the plants, trees, grass, shrubs, hedges and edges for aesthetics	-	-	-	-
	PC10. check the availability of water, electricity and other inputs at the site	-	-	-	-
	PC11. select the type of garden to be established as per the client's requirements	-	-	-	-
	PC12. plan relevant garden features as per the client requirements such as walkways, steps, statues, fountain, pond, etc.	-	-	-	-
	PC13. estimate the requirement of various material for establishing the garden	-	-	-	-
	PC14. prepare the layout of the garden based on the assessment of client requirements	-	-	-	-
	<i>Arrange the necessary resources</i>	20	28	-	22
	PC15. estimate the cost of purchasing the required material	-	-	-	-
	PC16. arrange the funds required for purchasing the material	-	-	-	-
	PC17. identify multiple vendors of the material required for establishing the garden	-	-	-	-
	PC18. select a vendor based on the quality and price of the material available with them	-	-	-	-
	PC19. purchase the material as per the requirement	-	-	-	-
	PC20. store the material appropriately as per its storage requirements	-	-	-	-
	PC21. maintain the record of purchase	-	-	-	-
	NOS Total	30	40	-	30

AGR/N0803: Set up the garden as per the plan	<i>Prepare the field for planting</i>	6	8	-	6
	PC1. remove all roots, debris and waste material from the land	-	-	-	-
	PC2. examine the soil for an appropriate level of moisture for tilling	-	-	-	-
	PC3. till the land to the required depth	-	-	-	-
	PC4. apply the necessary treatment on the soil such as relevant chemicals, peat, lime, manure, compost, etc.	-	-	-	-
	PC5. identify and remove weeds from the land	-	-	-	-
	PC6. ensure the soil is well-drained and there is no accumulation of water in the land	-	-	-	-
	PC7. prepare rows and holes for planting seeds/plants as per the planned layout	-	-	-	-
	PC8. ensure the holes are deep and wide enough to support healthy plant growth	-	-	-	-
	PC9. arrange for drainage of water from the garden	-	-	-	-
	<i>Plant the garden</i>	10	14	-	10
	PC10. plant trees/ plants/ shrubs/ grass/ hedges and edges in the selected pattern maintaining the required spacing	-	-	-	-
	PC11. apply soil cover on the planted roots of the trees/ plants/ shrubs/ grass/ hedges and edges	-	-	-	-
	PC12. water the trees/ plants/ shrubs/ grass/hedges and edges with the recommended quantity of water	-	-	-	-
	PC13. apply an appropriate type of fertilizer/ manure/ mulch on the roots of the hedges and edges	-	-	-	-
	PC14. install supports for the relevant types of plants to help them grow as intended	-	-	-	-
	PC15. erect fences around the garden to protect it from animals	-	-	-	-
	PC16. identify the types of annual plants to grow	-	-	-	-
	PC17. obtain the seeds of the selected plants	-	-	-	-
PC18. sort out damaged and unhealthy seeds	-	-	-	-	
PC19. plant the seeds as per the SOP	-	-	-	-	

PC20. water the planted seeds with therecommended quantity	-	-	-	-
PC21. install support to allow tender plants togrow straight	-	-	-	-
PC22. identify the appropriate vegetable, fruitsand indoor plants to grow	-	-	-	-
PC23. prepare potting mixture using therecommended ingredients	-	-	-	-
PC24. plant the vegetables and fruit plants	-	-	-	-
PC25. plant bonsai trees in pots of theappropriate size	-	-	-	-
PC26. carry out potting and repotting for theoptimum growth of potted plants	-	-	-	-
<i>Set up garden features and irrigation or fertigationssystem</i>	5	7	-	5
PC27. set up an appropriate irrigation systemsuch as drip irrigation, sprinkler irrigation, subsurface irrigation	-	-	-	-
PC28. install a fertigation system as per therequirement	-	-	-	-
PC29. install various garden features such as walkways, statues, fountain as per the layout	-	-	-	-
<i>Prepare the flower bed</i>	5	8	-	5
PC30. identify a spot with sufficient exposure tosunlight	-	-	-	-
PC31. remove any existing grass/ plants/ debrisfrom the spot	-	-	-	-
PC32. drain out any water accumulated in thespot	-	-	-	-
PC33. ensure the soil has the correct level ofmoisture	-	-	-	-
PC34. till the soil to the recommended depth	-	-	-	-
PC35. prepare the flower bed as per theStandard Operating Procedure (SOP)	-	-	-	-
PC36. plant flowering plants such as bulbs, orchids, succulents, cacti in combination withbedding plants	-	-	-	-

	PC37. maintain the recommended spacingbetween plants	-	-	-	-
	<i>Optimise resource utilisation</i>	4	3	-	4
	PC38. optimise the usage of various material indifferent tasks / processes	-	-	-	-
	PC39. optimise the usage of water/ electricity/relevant materials in various tasks / processes	-	-	-	-
	PC40. connect electrical tools and equipmentsafely and turn off when not in use	-	-	-	-
	NOS Total	30	40	-	30
AGR/N0843: Design, set up and maintain a rooftop garden	<i>Plan the rooftop garden</i>	10	12	-	8
	PC1. check if a rooftop garden is permitted asper the local legislation in the proposed area	-	-	-	-
	PC2. assess the roof’s loading capacity with thehelp of a structural engineer/ architect	-	-	-	-
	PC3. ensure that there are no major installationsor structures on the roof that may cause obstruction	-	-	-	-
	PC4. assess the climatic conditions at the site to establish suitability for planting a rooftop garden	-	-	-	-
	PC5. obtain the necessary approvals for therooftop garden design	-	-	-	-
	PC6. check that the building has an effectivedrainage system	-	-	-	-
	PC7. assess the sunlight and wind exposure atthe roof	-	-	-	-
	PC8. check for adequate availability of water atthe roof	-	-	-	-
	PC9. measure the available space for thepurpose of designing the rooftop garden	-	-	-	-
	PC10. plan the placement of plants, furniture andgarden features	-	-	-	-
	PC11. select heat and drought tolerant plants, trees and shrubs of appropriate weight and sizefor the rooftop garden	-	-	-	-
PC12. select the appropriate material such as plastic, fiberglass or foam planting containersaccording to the roof’s loading capacity	-	-	-	-	

PC13. prepare a detailed plan through discussion with the client	-	-	-	-
PC14. estimate the cost of setting up the rooftop garden	-	-	-	-
<i>Set up the rooftop garden</i>	12	12	-	12
PC15. arrange the necessary plants/ shrubs, material, tools and equipment for setting up the rooftop garden	-	-	-	-
PC16. prepare lightweight potting soil for planting plants, trees and shrubs	-	-	-	-
PC17. plant the trees, plants and shrubs as per the SOP	-	-	-	-
PC18. water the plants and shrubs with the recommended quantity of water	-	-	-	-
PC19. install windbreaks, appropriate support and shading for the plants, trees and shrubs	-	-	-	-
PC20. apply fertilizers in the recommended quantity	-	-	-	-
PC21. install an irrigation system for watering the plants	-	-	-	-
PC22. carry out waterproofing of the roof garden	-	-	-	-
PC23. arrange for safe drainage of water from the garden	-	-	-	-
PC24. install garden features and furniture of appropriate weight and size as per the garden plan	-	-	-	-
<i>Maintain the rooftop garden</i>	8	16	-	10
PC25. apply mulch on the plants to stabilise evaporation and control weed	-	-	-	-
PC26. examine plants, trees and shrubs for healthy growth and pest and disease infestation	-	-	-	-
PC27. apply fertilizers, manure and pesticides/insecticides in the recommended quantity at appropriate intervals	-	-	-	-
PC28. train plants and shrubs as per their requirement	-	-	-	-
PC29. prune plants, trees and shrubs to ensure their healthy growth and aesthetics	-	-	-	-

	PC30. remove weeds as per the SOP	-	-	-	-
	PC31. carry out repair and maintenance of the garden pots, features, irrigation and drainage system	-	-	-	-
	PC32. maintain record of the maintenance activities	-	-	-	-
	NOS Total	30	40	-	30
AGR/N0847: Carry out vertical gardening	<i>Assess the structure of the vertical garden</i>	5	5	-	5
	PC1. ensure that the vertical garden structure is securely anchored to a wall or other stable support.	-	-	-	-
	PC2. ensure that the structure supporting the plants is strong enough to hold their weight	-	-	-	-
	PC3. check the irrigation system with drip emitters or sprinklers to make sure the plants receive water in a constant, consistent manner	-	-	-	-
	PC4. ensure proper light arrangement as per the light demand of the selected plant species	-	-	-	-
	PC5. clear drainage areas and outlets	-	-	-	-
	PC6. check tools and equipment for serviceability, and rectify and report faults	-	-	-	-
	PC7. select and use Personal Protective Equipment (PPE) appropriate for the task	-	-	-	-
	<i>Select appropriate plant species for planting in a vertical garden</i>	10	10	-	5
	PC8. carefully select plants for creating a sustainable, visually appealing, and functional vertical garden assessing their weight and size	-	-	-	-
	PC9. choose plant species as per the climatic conditions, season and exposure to the wall and garden structure	-	-	-	-
	PC10. plant seeds or seedlings in planters/holes spaced around the base of the trellis, pole or other structure	-	-	-	-
	<i>Maintain the vertical garden</i>	15	25	-	20
PC11. monitor the vertical garden regularly	-	-	-	-	
PC12. evaluate the condition of soil or growing media	-	-	-	-	

	PC13. apply fertilizers and ameliorants/additives regularly to supplement the soil	-	-	-	-
	PC14. water the plants adequately at the required frequency	-	-	-	-
	PC15. carry out regular pruning and trimming to ensure plant shape and healthy growth	-	-	-	-
	PC16. train the plants appropriately as per the requirement	-	-	-	-
	PC17. employ various strategies to control and prevent pest infestations in vertical gardens.	-	-	-	-
	PC18. replace/change the plants according to season	-	-	-	-
	PC19. clean the plants regularly to maintain their health and vitality	-	-	-	-
	PC20. carry out all the maintenance and gardening tasks safely while working at height and in areas of difficult access	-	-	-	-
	PC21. clean and store the tools and equipment safely in the designated place	-	-	-	-
	PC22. clear work area and dispose of, reuse or recycle materials according to workplace and environmental requirements	-	-	-	-
	PC23. record maintenance activities as per the workplace procedures	-	-	-	-
	NOS Total	30	40	-	30
AGR/N0848: Grow a bonsai tree	<i>Select appropriate plant species and container for bonsai making</i>	10	10	-	5
	PC1. carefully select plant species for making a bonsai considering various factors.	-	-	-	-
	PC2. select the size and style appropriate for the chosen specimen considering its artistic appeal to create a harmonious balance between the tree's natural growth and the desired shape.	-	-	-	-
	PC3. select a container/tray of suitable size, shape and material considering the required environment for the tree and the overall aesthetic appeal.	-	-	-	-
	<i>Carry out planting, care and maintenance of bonsai</i>	15	30	-	15
	PC4. prepare a suitable potting mixture.	-	-	-	-

PC5. choose the plants, preferably raised from seeds/cuttings except some natural grown species.	-	-	-	-
PC6. plant the bonsai at a suitable location within the container at a suitable time.	-	-	-	-
PC7. provide the required care to the plants for the proper establishment of the roots and vegetative growth	-	-	-	-
PC8. carry out regular pinching, pruning and trimming to ensure plant shape and healthy growth	-	-	-	-
PC9. carry out wiring and training of plants to provide adequate support and shape	-	-	-	-
PC10. uproot weeds proactively without harming the bonsai, as and when required.	-	-	-	-
PC11. water the plants adequately at the required frequency	-	-	-	-
PC12. apply fertilizers regularly to supplement the soil	-	-	-	-
PC13. employ various plant protection measures to control and prevent pest infestations.	-	-	-	-
PC14. clean the soil surface underneath the bonsai trees.	-	-	-	-
PC15. carry out repotting of well-established bonsai once a year at a suitable time to maintain their health	-	-	-	-
PC16. clean and store the tools and equipment safely in the designated place.	-	-	-	-
PC17. clear work area and dispose of, reuse or recycle materials according to environmental requirements.	-	-	-	-
<i>Decorate and Display bonsai specimens</i>	5	5	-	5
PC18. decorate the bonsai for display.	-	-	-	-
PC19. inspect the interiors and select a suitable location for the display of the bonsai.	-	-	-	-
PC20. enhance the presentation of the bonsai, using an appropriate pedestal or stand.	-	-	-	-
PC21. periodically shift or rotate the bonsai specimens from one location to another to ensure proper light and growth.				

		-	-	-	-
	NOS Total	30	45	-	25
AGR/N1008: Carry out greenhouse operations and maintain the greenhouse	<i>Plant and maintain seeds, vegetables and plants</i>	10	12	-	8
	PC1. ensure the availability of required planting material	-	-	-	-
	PC2. prepare the raised, flat or sunken bed in the greenhouse as per the requirement	-	-	-	-
	PC3. plant seeds, vegetables and different types of plants in the greenhouse	-	-	-	-
	PC4. water the planted seeds, vegetables, flowers and plants with the recommended quantity	-	-	-	-
	PC5. apply relevant fertilizers in the recommended quantity to promote the healthy growth of seedlings, vegetables and plants	-	-	-	-
	PC6. check the seedlings, vegetables, flowers and plants to identify the signs of pests and disease	-	-	-	-
	PC7. apply the recommended pesticides and insecticides to control pest and disease infestation	-	-	-	-
	PC8. remove the dead and damaged seedlings, vegetables, flowers and plants	-	-	-	-
	PC9. apply herbicides and weedicides and carry out manual weeding to prevent unwanted growth in the greenhouse	-	-	-	-
	PC10. maintain the recommended temperature, humidity and sunlight exposure in the greenhouse	-	-	-	-
	PC11. carry out regular repair and maintenance of the irrigation or fertigation system	-	-	-	-
	PC12. maintain the manual and/ or electronic record of herbicides, weedicides fertilizers, pesticides and insecticides used in the greenhouse	-	-	-	-
	<i>Harvest, acclimatise and transplant seedlings and plants</i>	6	8	-	4
	PC13. check the readiness of the seedlings and plants for being transplanted	-	-	-	-
PC14. harvest the seedlings and plants ensuring no damage to them	-	-	-	-	
PC15. acclimatise the seedlings and plants under the recommended temperature, protecting them from harsh conditions	-	-	-	-	

PC16. transplant the acclimatised seedlings and plants in the garden	-	-	-	-
<i>Harvest the flowers and vegetables</i>	4	6	-	4
PC17. check the maturity of flowers and vegetables grown in the greenhouse	-	-	-	-
PC18. harvest the flowers and vegetables using the appropriate tools and collect them in appropriate baskets and/ or containers	-	-	-	-
PC19. store the harvested flowers and vegetables at the recommended temperature, humidity and hygienic conditions	-	-	-	-
<i>Carry out post-harvest processing and marketing of flowers and vegetables</i>	4	8	-	6
PC20. carry out sorting and grading of the flowers and vegetables	-	-	-	-
PC21. clean the vegetables using clean water and recommended cleaning agents	-	-	-	-
PC22. prepare the hydration solution and apply it to the flowers to maintain their freshness	-	-	-	-
PC23. market the flowers and vegetables to the customers visiting the greenhouse or to the regular market buyers	-	-	-	-
PC24. process the payments using the appropriate payment methods	-	-	-	-
PC25. maintain the record of sales and payments manually and/or electronically using the physical registers and/ or the relevant computer application	-	-	-	-
<i>Maintain the greenhouse</i>	2	4	-	4
PC26. maintain cleanliness in the greenhouse through regular sweeping and removal of trash	-	-	-	-
PC27. check the greenhouse structure regularly to identify the repair and maintenance needs	-	-	-	-
PC28. carry out regular repair and maintenance of the greenhouse structure and co-ordinate with an expert for complex repairs	-	-	-	-
<i>Perform waste management</i>	4	2	-	4
PC29. segregate waste into appropriate categories	-	-	-	-

	PC30. dispose or recycle different types of wastes following the recommended practices	-	-	-	-
	NOS Total	30	40	-	30
AGR/N0822: Set up and maintain the hydroponic system and plants/ crop	<i>Select the crop/ plant and site for hydroponic farming</i>	4	6	-	4
	PC1. select the appropriate crops/ plants suitable for hydroponics farming based on priority and market demand	-	-	-	-
	PC2. select a location with the required temperature and sunlight exposure, suitable to the selected plant/ crop variety	-	-	-	-
	PC3. ensure the availability of various inputs such as water, electricity, fertilisers and labour for hydroponic farming	-	-	-	-
	PC4. prepare the tabulation of the crop, following the recommended process	-	-	-	-
	<i>Propagate seedlings for hydroponic farming</i>	6	8	-	6
	PC5. select the appropriate growth medium for seed germination, ensuring the medium has the required characteristics such as moderate fertility, water holding capacity, good aeration capacity, etc.	-	-	-	-
	PC6. use coco peat, rice husk, and sand peat to raise seedlings, avoiding the use of any medium to grow agronomical crops such as wheat, paddy, maize, barley, oat, etc. for nursery and fodder purposes	-	-	-	-
	PC7. sterilise the growing medium before use, according to the applicable sterilisation limit	-	-	-	-
	PC8. select nursery containers for the growth of plants such as clay pots, plastic pots, or trays, as required	-	-	-	-
	PC9. clean and sterilise the pots and trays before sowing seeds	-	-	-	-
	PC10. apply the nutrient solution in the recommended quantity to the trays and pots and sow the seeds	-	-	-	-
	PC11. maintain seedlings in the trays and pots for the recommended duration, protecting them from pests and disease and ensuring effective nutrient management	-	-	-	-
	PC12. harvest the seedlings at the appropriate stage of their growth to be transplanted in the appropriate hydroponic system	-	-	-	-
<i>Set up the hydroponic system</i>	6	8	-	6	

PC13. select the appropriate hydroponic technique for growing quality medium to obtain quality produce with the required colour, appearance, etc.	-	-	-	-
PC14. select different kinds of substrates to be used for the cultivation of vegetables and fruits, such as lava rocks, clay pebbles, coco peat, ensuring the substrate does not contain excess salt or other elements that are harmful to plants	-	-	-	-
PC15. select an appropriate nutrient circulation method such as the Nutrient Film Technique, DeepFlow Technique (DFT), wick system, water culture, EBB and Flow, drip system, etc.	-	-	-	-
PC16. create holes in Polyvinyl Chloride (PVC) pipes for the Deep Flow Technique (DFT) and insert plants placed in plastic net pots, in the holes made in PVC pipes	-	-	-	-
PC17. use the recommended flooring material in the hydroponic farm, that is capable of soaking in any spillage and leakages	-	-	-	-
PC18. adopt the Nutrient Film Technique (NFT) for leafy plants for their faster growth	-	-	-	-
PC19. sterilise the growing medium before use	-	-	-	-
PC20. place plants in growing tubes and suspend them into water	-	-	-	-
PC21. use pest and disease-free seedlings, and planting material for the establishment of hydroponic crops	-	-	-	-
PC22. maintain a reservoir to hold the nutrient solution and pump it as per the requirement to the tubes of growing plants	-	-	-	-
PC23. automate the nutrient flow system using the cyclic monitoring application, as required	-	-	-	-
PC24. use non-circulating methods for nutrient application, where applicable, such as root dipping technique, floating technique, capillary action technique, etc.	-	-	-	-
PC25. ensure the availability of adequate lighting for the optimum growth of plants in the hydroponic system through the use of a relevant lighting system, such as the solar lighting system	-	-	-	-
<i>Maintain the hydroponic system and plants/ crop</i>	8	10	-	8

PC26. check the pipes for any salt deposits and remove it safely to prevent choking and ensure thenutrient solution flows without obstruction through the pipes	-	-	-	-
PC27. check and ensure that the roots of plants getan appropriate quantity of nutrient solution for healthy growth	-	-	-	-
PC28. drain out the rainwater from the site to ensurenno waterlogging	-	-	-	-
PC29. clean and monitor the condition of motors controlling water tanks, pumps, and growing trays	-	-	-	-
PC30. use clean water in the hydroponic system andmaintain the pH level of the water by using the recommended treatment	-	-	-	-
PC31. clean the floor and maintain it dry in thehydroponic system	-	-	-	-
PC32. detect pests and diseases and takeappropriate remedial measures	-	-	-	-
PC33. position the grains appropriately on growingtrays to prevent waterlogging in them	-	-	-	-
PC34. soak good quality grains as per the requirement and use an appropriate time- management technique to avoid over-soaking ofgrains	-	-	-	-
PC35. use mesh filters for regular cleaning	-	-	-	-
PC36. carry out manual or auto-misting of the crop and plants with water to prevent the harmful effectsof temperature	-	-	-	-
PC37. use nets for aeration and to prevent birds andanimals from preying on the plants/ crop	-	-	-	-
PC38. check the pH using a pH meter regularly and follow the recommended practices to adjust it to therequired level in the hydroponic system and nutrientsolution, as required	-	-	-	-
PC39. maintain the recommended nutrient solutiontemperature, and take appropriate measures to control the temperature	-	-	-	-
PC40. use the oxygen meter with mobile applicationsupport and alarm to monitor the level of dissolved oxygen in the nutrient solution and follow the recommended practices to maintain or adjust it	-	-	-	-
PC41. maintain the recommended air space between the nutrient solution and the roots of plants	-	-	-	-

PC42. clean the hydroponic system regularly using chlorine or other recommended treatment, and flush the system with clean water before replanting	-	-	-	-
PC43. use auto-cleaning systems for cleaning in large-scale hydroponic systems to save time and achieve better productivity	-	-	-	-
PC44. ensure the required macro and micronutrients are available to plants and crops according to different stages of their growth	-	-	-	-
PC45. maintain hygiene along with the recommended temperature and Relative Humidity (RH) at the site of hydroponic farming by following the recommended practices, such as the use of exhaust fans	-	-	-	-
PC46. carry out artificial pollination using blowers, and use mechanical vibrators to improve air quality within the protected hydroponic system structures	-	-	-	-
PC47. install artificial supporting structures and train tall-growing intermediate crop varieties such as tomatoes and cucumber, and crops bearing heavy produce such as bell pepper, eggplant, etc.	-	-	-	-
PC48. tie strings at the base of each plant with an appropriate material such as polythene	-	-	-	-
PC49. carry out pruning of plants using the appropriate tools and implements, when required	-	-	-	-
<i>Carry out irrigation and fertigation</i>	6	8	-	6
PC50. carry out irrigation of plants either manually or using the drip irrigation system, as per the irrigation schedule	-	-	-	-
PC51. determine the amount of fertilisers to be used for fertigation based on the selected crop, its stages of growth, and the type of selected hydroponics technique	-	-	-	-
PC52. select the relevant fertigation technique for use, as appropriate	-	-	-	-
PC53. mix the appropriate fertilisers with the daily water requirement and apply it manually or by using a fertigation system/nutrient tank, according to the selected fertigation technique	-	-	-	-
PC54. maintain the record of irrigation and fertigation of crop	-	-	-	-
NOS Total	30	40	-	30

AGR/N0846: Set up and maintain the aeroponic farm	<i>Set up the aeroponic farm</i>	12	20	-	12
	PC1. prepare the root chamber for growing plants	-	-	-	-
	PC2. ensure the growth chamber is light-proof,with good air circulation and an ability to holdhumidity	-	-	-	-
	PC3. set up a reservoir to store the nutrient spraysolution	-	-	-	-
	PC4. install a submersible pump and PVC pipes todeliver nutrient spray solution to the sprinklers	-	-	-	-
	PC5. install sprinkler heads for spraying thenutrient spray solution on plants	-	-	-	-
	PC6. prepare the nutrient solution maintaining therecommended ratio of water, nutrients and hormones required for the growth of selected plants	-	-	-	-
	PC7. fill in the reservoir with the nutrient spraysolution in the recommended quantity	-	-	-	-
	PC8. set up an automatic controller to automatethe release of nutrient spray solution	-	-	-	-
	PC9. test the automatic controller to ensure ittriggers the spray at the set interval of time	-	-	-	-
	PC10. place the vegetative cuttings on the top of the growing chamber maintaining the stems of theplants in the root chamber	-	-	-	-
	<i>Maintain the aeroponic farm</i>	10	8	-	10
	PC11. identify the common repair and maintenance needs of the submersible pump,sprinklers, root chamber, etc.	-	-	-	-
	PC12. carry out regular repair and maintenance and co-ordinate with an expert for complex repairand maintenance needs	-	-	-	-
	PC13. apply the recommended disinfectant such asHydrogen peroxide in the root chambers at appropriate intervals to prevent contamination	-	-	-	-
	PC14. maintain the recommended temperature and humidity in the root chamber for the optimumgrowth of plants	-	-	-	-
PC15. maintain the recommended quantity of various nutrients in the nutrient spray solution inan appropriate quantity	-	-	-	-	
PC16. identify the signs of rotting, wilting, pestsand disease in the plants and apply the appropriate treatment as per the prescription	-	-	-	-	

		-	-	-	-
	PC17. maintain the record of any treatments and disinfectants used in the aeroponic farm	-	-	-	-
	<i>Optimise resource utilisation</i>	4	6	-	4
	PC18. optimise the usage of water, electricity and other resources in relevant tasks and processes	-	-	-	-
	PC19. connect electrical tools and equipment safely and turn them off when not in use	-	-	-	-
	PC20. plug water leakages to prevent its wastage	-	-	-	-
	<i>Perform waste management</i>	4	6	-	4
	PC21. segregate waste into appropriate categories	-	-	-	-
	PC22. recycle the recyclable waste appropriately and dispose the non-recyclable waste in an environment-friendly manner	-	-	-	-
	NOS Total	30	40	-	30
AGR/N0823: Carry out harvesting, post-harvest management and marketing activities	<i>Carry out harvesting activities</i>	12	14	-	12
	PC1. check the maturity of plants and crops for harvesting	-	-	-	-
	PC2. carry out harvesting using the relevant tools and implements, ensuring minimum damage to crops/plants during harvesting	-	-	-	-
	PC3. discard any damaged or disfigured plants	-	-	-	-
	PC4. carry out sorting and grading on the basis of applicable parameters such as colour, appearance, ripeness, etc.	-	-	-	-
	PC5. tag the harvested plants/ crop for identification	-	-	-	-
	PC6. maintain the record of harvesting schedule and period of cultivation of crops/plants	-	-	-	-
	<i>Perform post-harvest management</i>	6	8	-	4
	PC7. store the harvested plants/crops in a dry storage area with the recommended temperature and humidity, ensuring hygiene and aeration	-	-	-	-
	PC8. use humidity monitors to monitor the humidity	-	-	-	-
	<i>Market the produce</i>	12	18	-	14
PC9. track and analyse the information related to the wholesale and retail price of the produce	-	-	-	-	

	PC10. identify the market and buyers of the produce such as e-trading platforms, cooperatives, local traders, exporters, etc.	-	-	-	-
	PC11. coordinate and negotiate with the potential buyers to secure a profitable price for the produce	-	-	-	-
	PC12. pack the produce in the appropriate packing material and label it with the relevant information	-	-	-	-
	PC13. arrange an appropriate mode of transport for safe and hygienic delivery of produce, ensuring optimum aeration during transit	-	-	-	-
	PC14. coordinate with the transporter for safe and timely delivery to the buyer	-	-	-	-
	PC15. process the payment using the buyer-preferred e-payment method	-	-	-	-
	PC16. maintain the manual and/ or electronic record of sales and payments using the physical registers and/ or the relevant computer system	-	-	-	-
	PC17. ensure compliance with the applicable regulations in the marketing of produce	-	-	-	-
	NOS Total	30	40	-	30
AGR/N8102: Prepare for plant tissue culture	<i>Prepare for lab experiments</i>	4	8	-	10
	PC1. arrange the necessary lab equipment, personal protective equipment (PPE)	-	-	-	-
	PC2. set up laboratory with the required instructional materials and supplies for the research project	-	-	-	-
	PC3. examine the PPE and clothing for any wear and tear or damage	-	-	-	-
	PC4. apply disinfectant on the relevant lab areas to remove all bacteria/ micro-organisms	-	-	-	-
	PC5. ensure the room for incubating cultures has the relevant equipment to control temperature, light and humidity	-	-	-	-
	PC6. test the computer system for correct functioning to record the relevant data	-	-	-	-
	PC7. ensure the availability of washing area, workbenches and safe storage of lab equipment	-	-	-	-

PC8. dispose any expired chemicals as per theStandard Operating Procedure (SOP)	-	-	-	-
PC9. remove all consumables and flammable itemsfrom the lab	-	-	-	-
<i>Calibrate and maintain the lab equipment</i>	4	8	-	4
PC10. identify the relevant lab equipment to beused in the plant tissue culture activities	-	-	-	-
PC11. follow the laboratory procedures whilehandling lab tools, equipment, dead weights,calibrated measuring jars and reagents	-	-	-	-
PC12. calibrate equipment in accordance with thetolerances prescribed by the manufacturer	-	-	-	-
PC13. apply label on the lab equipment to identifythe calibrated equipment	-	-	-	-
PC14. co-ordinate with the manufacturer for thecalibration of equipment requiring expert assistance	-	-	-	-
PC15. check the working and performance of allequipment on a regular basis	-	-	-	-
PC16. report any malfunctions/ repair needs to thesupervisor	-	-	-	-
PC17. co-ordinate with the maintenance serviceprovider to ensure maintenance of all lab equipment	-	-	-	-
PC18. maintain the relevant lab-equipment recordsuch as their performance, faults, repair, annual maintenance, etc.	-	-	-	-
<i>Maintain the lab inventory</i>	6	8	-	4
PC19. maintain the inventory of lab supplies bychecking the stock regularly	-	-	-	-
PC20. order the lab supplies when required	-	-	-	-
PC21. verify the receipt of lab supplies	-	-	-	-
PC22. maintain stock buffer of reagents andmicrobiological media	-	-	-	-
<i>Prepare the plant tissue culture medium</i>	6	8	-	6
PC23. identify the appropriate culture medium along with its nature, composition and suitabilityfor the selected explants	-	-	-	-

PC24. use the recommended grade of lab chemicals and agar for the preparation of culturemedium	-	-	-	-
PC25. use double glass distilled, Reverse Osmosis(RO) or demineralised water in culture medium	-	-	-	-
PC26. prepare different stock solutions as nutrientmedium with the required constituents, strength and volume	-	-	-	-
PC27. ensure the availability of deep freezer to store stock solutions; refrigerator to store chemicals, short-term storage for stock solutions; storage tank for distilled water and other equipment such as electronic weighing balance, hot plates, Potential of Hydrogen (pH) meter, etc.	-	-	-	-
PC28. store or refrigerate the stock solutions at therecommended temperature after applying appropriate labels on them	-	-	-	-
PC29. prepare culture medium such as MS, B5, N6,Nitsch and Whites using the recommended quantity of sucrose, agar, water and stock solutionwith the help of hot plate and magnetic stirrer	-	-	-	-
PC30. adjust the pH of the culture medium to therequired level using HCl and NaOH (hydrochloric acid and sodium hydroxide) solution	-	-	-	-
PC31. dispense medium uniformly into culturebottles/ tubes manually or with the help of automatic media dispenser	-	-	-	-
PC32. apply label with the relevant information onthe culture bottles/ tubes	-	-	-	-
PC33. maintain the record of prepared culture medium in the media register or relevant computersystem	-	-	-	-
<i>Sterilise and store the culture medium</i>	10	8	-	6
PC34. sterilise the media at the prescribed temperature and pressure for an appropriateduration in an autoclave	-	-	-	-
PC35. sterilise the syntax filters before use	-	-	-	-
PC36. carry out filtration sterilisation of the stocksolutions through a syntax filter	-	-	-	-
PC37. dispense the filter sterilised solution in theautoclaved media after cooling under aseptic conditions	-	-	-	-

	PC38. transfer the culture bottles to media storageroom immediately after autoclaving	-	-	-	-
	PC39. check the culture medium for microbial contamination after autoclaving and discard the entire lot along with the culture bottles in case contamination is found to be above the prescribedlimit	-	-	-	-
	NOS Total	30	40	-	30
AGR/N8103: Carry out plant tissue culture	<i>Prepare the mother plant and explant</i>	6	8	-	10
	PC1. identify the crops and plants that can undergo micro-propagation such as fruits, vegetables, food grain crops, ornamental plants,etc.	-	-	-	-
	PC2. select the mother plant which appear healthyand are free from pests, diseases and bacterial infections	-	-	-	-
	PC3. ensure that the mother plants are grown in agreenhouse wherever possible	-	-	-	-
	PC4. expose the mother plants to recommended temperature and sunlight to improve the quality ofexplants	-	-	-	-
	PC5. pre-treat the mother plant with recommendedfungicides where possible to prevent bacterial contamination	-	-	-	-
	PC6. water the plants with the recommendedquantity of filtered water	-	-	-	-
	PC7. apply a label on the mother plant containerwith the relevant details such as the name and type of the plant, the location and date of extraction, etc.	-	-	-	-
	PC8. pack the mother plant appropriately incardboard cartons or immersed water	-	-	-	-
	PC9. transport the mother plant to the culturelaboratory safely under the recommended temperature	-	-	-	-
	PC10. maintain the plant in a sterilisedenvironment prior to use	-	-	-	-
	PC11. use the relevant tools to extract the explantfrom the sterilised mother plant	-	-	-	-
	PC12. sterilise the explant using the prescribedsterilisation solution	-	-	-	-
<i>Prepare for transferring the explant to culturemedium</i>	4	8	-	10	

PC13. cut the explant into pieces of the prescribed length	-	-	-	-
PC14. wash the plant pieces using the recommended cleaning agent	-	-	-	-
PC15. transfer the plant parts into containers with Clorox solution and soak them for the recommended duration	-	-	-	-
PC16. discard the Clorox solution as per the SOP	-	-	-	-
PC17. maintain the plant parts in the container under the recommended temperature	-	-	-	-
<i>Transfer the explant to culture medium</i>	8	4	-	2
PC18. sterilise the relevant equipment and containers using an alcohol-based disinfectant	-	-	-	-
PC19. pour sterile water into the container with the plant parts	-	-	-	-
PC20. shake the container gently after placing a sterile lid to wash the tissue and remove the sterilising solution	-	-	-	-
PC21. place the plant parts using sterilised gloves on a sterile petri dish after removing from the container	-	-	-	-
PC22. cut the plant parts into smaller pieces of the recommended length using a sterilised blade	-	-	-	-
PC23. discard the damaged plant parts safely	-	-	-	-
PC24. place the plant pieces into the culture bottles/ tubes containing culture medium using sterile forceps	-	-	-	-
PC25. place cap on the culture bottles/ tubes tightly	-	-	-	-
PC26. store the culture bottles/ tubes in trays or storage racks safely	-	-	-	-
PC27. maintain the appropriate conditions in the lab such as temperature, humidity and illumination for the multiplication of plant tissues	-	-	-	-
PC28. add cytokinin to the culture medium as per the requirement to regulate the growth of plant shoots	-	-	-	-
PC29. monitor the plant shoots regularly for the correct growth and any contaminations	-	-	-	-

PC30. discard the contaminated plant shoots asper the SOP	-	-	-	-
PC31. transfer the proliferated shoots to freshculture medium for mass multiplication	-	-	-	-
PC32. place the shoots in another nutrient culturemedium specific for root development	-	-	-	-
PC33. add auxins in the recommended quantity topromote root formation	-	-	-	-
PC34. monitor the development of roots	-	-	-	-
PC35. apply the necessary treatment to resolveany issues with root development	-	-	-	-
PC36. maintain the record of observations in theregister or the relevant computer system	-	-	-	-
<i>Acclimatise the tissue cultured plants</i>	4	10	-	4
PC37. select a facility with the appropriate temperature and humidity favourable for theplants	-	-	-	-
PC38. remove the plantlets from culture bottles/tubes after they achieve adequate growth and rooting	-	-	-	-
PC39. wash the plantlets gently to remove anytraces of culture media	-	-	-	-
PC40. plant the tissue cultured plants in micro-potsfilled with soil/ soilrite/ sand for primary hardening	-	-	-	-
PC41. label the plants with the necessaryinformation	-	-	-	-
PC42. apply water and fertilizers in the recommended quantity as per the schedule	-	-	-	-
PC43. maintain the plants in the facility for therecommended duration before hardening off	-	-	-	-
<i>Harden off the plants</i>	8	10	-	4
PC44. place the plants in a greenhouse or shade net facility with controlled micro-climatic conditions such as relative humidity, temperature,light intensity and air circulation	-	-	-	-
PC45. transfer the plants to larger pots for secondary hardening after they develop newleaves and roots	-	-	-	-
PC46. maintain the level of nutrients for theoptimum growth of plants				

		-	-	-	-
	PC47. conduct routine checks on the plantlets to ensure their healthy growth and detect presenceof any infections	-	-	-	-
	PC48. remove the dead and decaying plants	-	-	-	-
	PC49. maintain the plants in the environment forthe recommended period before transplanting	-	-	-	-
	NOS Total	30	40	-	30
AGR/N8115: Transplant the tissue cultured plants and maintain records	<i>Transplant the plants</i>	10	8	-	10
	PC1. select a spot with adequate exposure tosunlight	-	-	-	-
	PC2. prepare the planting bed in a greenhouseor select larger pots of appropriate size for transplanting the plants	-	-	-	-
	PC3. create holes of the recommended widthand depth to place the plants	-	-	-	-
	PC4. water the potted plants to loosen the soilaround their roots	-	-	-	-
	PC5. extract the plants from the pots ensuringno damage to plants and their roots	-	-	-	-
	PC6. place the plants in the holes and cover theroots with the soil	-	-	-	-
	PC7. apply the recommended amount offertilizers and water	-	-	-	-
	PC8. arrange to protect the transplanted plantsfrom excessive heat and cold	-	-	-	-
	PC9. maintain the plants in the recommendedtemperature and humidity	-	-	-	-
	PC10. apply necessary treatment if the transplanted plants show signs of wilting, pestsand disease	-	-	-	-
	<i>Maintain the record of lab operations</i>	6	8	-	4
	PC11. use the appropriate computer applicationto maintain the record of lab operations in the prescribed format	-	-	-	-
	PC12. review the data regularly to ensureaccuracy	-	-	-	-
PC13. comply with the applicable regulatoryrecord keeping requirements					

		-	-	-	-
	<i>Optimise resource utilisation</i>	8	12	-	8
	PC14. optimise the usage of various material indifferent tasks/ activities/ processes	-	-	-	-
	PC15. optimise the usage of electricity/ water/energy in various tasks/ activities/ processes	-	-	-	-
	PC16. connect the electrical tools and equipment safely and turn off when not in use	-	-	-	-
	<i>Perform waste management</i>	6	12	-	8
	PC17. segregate waste into different categories	-	-	-	-
	PC18. dispose the non-recyclable wasteappropriately	-	-	-	-
	PC19. deposit the recyclable and reusablematerial at the identified location	-	-	-	-
	NOS Total	30	40	-	30
AGR/N1011: Set up and maintain nursery under protected condition	<i>Establish nursery under protected cultivation</i>	15	25	-	10
	PC1. evaluate the suitability of the site conditionsfor Hi-tech nursery establishment	-	-	-	-
	PC2. ensure the availability of seeds, seedlings,compost/ manure and other related resources	-	-	-	-
	PC3. measure the dimensions to plan the spaceallocation for nursery establishment	-	-	-	-
	PC4. check the growth media for the desired characteristics and quality as per the requirementof the crop	-	-	-	-
	PC5. prepare and treat soil and soilless media as per the requirement of crop/plants/flowers to be grown	-	-	-	-
	PC6. prepare nursery beds according to theseason and the crop/fruit/flower	-	-	-	-
	PC7. use relevant sowing technique depending upon the nature and season in the nursery bed lines	-	-	-	-
	PC8. arrange necessary implements and materialsfor nursery management	-	-	-	-
	PC9. allot space for storing registers, notebooks,etc.	-	-	-	-

	PC10. instruct the team about the standard work practices, proper care, maintenance activities etc.	-	-	-	-
	<i>Maintain nursery under protected cultivation</i>	15	25	-	10
	PC11. carry out hardening of the nursery plants by adjusting and acclimatizing the environment of the protected cultivation structure	-	-	-	-
	PC12. check the stocks and required resources for nursery management	-	-	-	-
	PC13. maintain records pertaining to mother plants, progeny, stock of plants etc. as per the standard work practices	-	-	-	-
	PC14. label the plants as per the standard working procedures	-	-	-	-
	PC15. perform irrigation, nutrition management and infestation control as per the need and crop requirements	-	-	-	-
	PC16. carry out the recommended intercultural operations	-	-	-	-
	PC17. harvest the seedlings for transplantation/sale	-	-	-	-
	PC18. transplant seedlings and cuttings into pots correctly	-	-	-	-
	PC19. select and organise the seedlings that must be kept on display with minimum damage or disturbance to the seedlings	-	-	-	-
	PC20. pack the plants properly in a polybag/container for transport/sale	-	-	-	-
	PC21. suppress growth of seedlings that are not bought by pruning the tips in order to postpone planting	-	-	-	-
	NOS Total	30	50	-	20
AGR/N1013: Carry out protected cultivation of flower crops	<i>Prepare for cultivation</i>	4	4	-	4
	PC1. select a site with ample sunlight, distant from low lying area and suitable environmental conditions for flower crop under protected cultivation	-	-	-	-
	PC2. select commercially viable varieties of flowers that can be grown under protected cultivation in the selected site such as rose, gerbera, carnation, anthurium, liliium, orchids, chrysanthemum, etc.	-	-	-	-

PC3. set up structure for protected cultivation based on types of flower crop, conditions to be altered, output volumes, budgets and resources available, etc.	-	-	-	-
PC4. apply measures to test and alter the environmental conditions within the protected cultivation structure based on the requirements of the flower crop	-	-	-	-
<i>Prepare the growth media</i>	4	8	-	5
PC5. select appropriate soil or soilless medium for the flower crop	-	-	-	-
PC6. prepare the media to have appropriate pH, porosity, moisture retention, salinity, organic content and anchorage as required for the flower crop	-	-	-	-
PC7. decontaminate the media using methods such as chemical drenching/ fumigation, steaming, pasteurization and solarization	-	-	-	-
<i>Plant a flower crop</i>	5	8	-	3
PC8. ensure flat planting bed for flowers	-	-	-	-
PC9. select planting material like, seeds or saplings, tissue cultured plantlets based on the flower variety and planting medium	-	-	-	-
PC10. apply appropriate propagation method for the flower crop such as shield or T-budding, stenting method, cuttings, micro-propagation	-	-	-	-
PC11. prepare the planting material such as seeds, seedlings or cuttings	-	-	-	-
PC12. plant the planting material maintaining the right spacing to ensure optimum planting density	-	-	-	-
<i>Nurture a flower crop</i>	10	15	-	7
PC13. prepare daily/weekly irrigation and fertigation schedule as per the requirement of the crop	-	-	-	-
PC14. apply appropriate micro-irrigation techniques including use of fertigation equipment, spraying system, exhaust fan and cooling pads as per the stage of growth of the flower crop	-	-	-	-
PC15. ensure good quality of filtered water for flower crop	-	-	-	-
PC16. manage weeds using appropriate method	-	-	-	-

PC17. prepare and apply appropriate dose of manure fertilizer as per crop requirement	-	-	-	-
PC18. apply micro-nutrients by foliar spray	-	-	-	-
PC19. carry out centering (or decentering), to promote the growth of auxiliary buds and lateral branches as per the requirement of the plant using wired nets	-	-	-	-
PC20. trim the growing branches for further lateral branch formation, good spread and budding surface	-	-	-	-
PC21. prune and trim the terminal of the plants as per their cycle	-	-	-	-
PC22. carry out the plant management practices of pinching, disbudding, de-shooting, defoliation, removal of faded flowers and bending of shoots as per plant requirement	-	-	-	-
PC23. identify indicators of disease, infestation, disorder and damage to the flower crop	-	-	-	-
PC24. apply appropriate measures for prevention and treatment of disease, infestation, disorder and damage to the flower crop	-	-	-	-
<i>Harvest a flower crop</i>	7	10	-	6
PC25. select appropriate harvesting practices of loose and cut flower	-	-	-	-
PC26. harvest the flowers as per the market requirement in terms of stage of harvest, stem length, bud size, quality and quantity of produce, type of packaging, etc.	-	-	-	-
PC27. pack the flowers for temporary storage	-	-	-	-
PC28. use weighing machine to accurately weigh the produce	-	-	-	-
PC29. sort and grade the harvested produce based on quality, colour, stem strength and size	-	-	-	-
PC30. process the segregated produce which are not meeting the quality standards	-	-	-	-
PC31. pack, store and transport the marketable produce, ensuring that the produce remains fresh and damage free for a long time	-	-	-	-
PC32. record the details of harvest and post-harvest activities in the desired format	-	-	-	-
NOS Total	30	45	-	25

AGR/N9908: Undertake basic entrepreneurial activities for small enterprise	<i>Plan the agricultural enterprise/ business</i>	10	14	-	10
	PC1. analyse the demand and supply of the relevant agricultural produce in the market	-	-	-	-
	PC2. identify the target customers and assess their needs and expectations with respect to the quality and price of the produce	-	-	-	-
	PC3. identify various types of agricultural entrepreneurship/ business opportunities	-	-	-	-
	PC4. plan agricultural production with the use of relevant and efficient technologies for availing funds	-	-	-	-
	PC5. identify appropriate and authentic advisory services/Government authority for skill upgradation to successfully plan and implement business activities	-	-	-	-
	PC6. prepare a basic business plan for the agricultural entrepreneurship/business activities	-	-	-	-
	PC7. identify appropriate sources of funding for the agricultural entrepreneurship/ business	-	-	-	-
	PC8. coordinate with the relevant government authorities to subscribe to the relevant government schemes and programs to benefit from them	-	-	-	-
	PC9. ensure compliance with the government structural reforms and framework along with the applicable rules and regulations while setting up the agricultural enterprise/ business	-	-	-	-
	<i>Manage the agricultural production process</i>	8	10	-	8
	PC10. select and arrange the necessary resources for the business operations	-	-	-	-
	PC11. ensure the use of relevant and efficient production technologies as per planning and availability of funds	-	-	-	-
	PC12. follow the recommended practices for efficient input resource management	-	-	-	-
	PC13. optimise the production processes and output through the amalgamation of existing practices with smart technologies	-	-	-	-
PC14. follow the recommended sustainability practices during agricultural production to prevent adverse impacts on the environment and produce viz. deforestation, loss of biodiversity, soil degradation, etc.	-	-	-	-	
<i>Manage the post-production and marketing processes</i>	12	16	-	12	

PC15. ensure the availability of proper storage infrastructures and facilities post-production of the produce as per the industry quality standards	-	-	-	-
PC16. collect information related to the wholesale and retail price of produce	-	-	-	-
PC17. calculate the costs incurred and determine the price of the produce for profitability	-	-	-	-
PC18. ensure that the cost of production, transportation, and marketing are considered while calculating the cost and setting the price for the produce	-	-	-	-
PC19. collect information related to various subsidies/funds offered by the government, authorised state units and other financial institutions involved with the promotion of the produce	-	-	-	-
PC20. select appropriate marketing channels for the produce, considering the relevant requirements and constraints	-	-	-	-
PC21. identify various risks to production and post-production processes and manage them appropriately	-	-	-	-
PC22. undertake outreach programs to promote agricultural products and services, and expand agri-business	-	-	-	-
PC23. prepare and execute a marketing plan considering the 4Ps i.e. product, price, promotion, and place and 4As i.e. acceptability, affordability, accessibility, and awareness	-	-	-	-
PC24. use the relevant digital services such as e-commerce, e-payments, electronic record-keeping, etc.	-	-	-	-
PC25. use efficient post-production logistics means to improve the supply quantity, reduce the cost to the consumer, and increase demand consequently	-	-	-	-
PC26. ensure all the relevant information such as quality and quantity of produce, date of manufacture, batch number, and sale is recorded electronically and/ or manually	-	-	-	-
PC27. coordinate with the various stakeholders for efficient and sustainable agri-business growth and development	-	-	-	-
NOS Total	30	40	-	30
<i>Maintain personal hygiene</i>	10	5	-	10

AGR/N9903: Maintain health and safety at the workplace	PC1. wash hands, legs and face with soap/alcoholbased sanitizer at reasonable intervals	-	-	-	-
	PC2. wash the worn clothes with soap and sun drybefore use next time	-	-	-	-
	PC3. ensure the face is covered with mask or threelayers of cloth-piece	-	-	-	-
	PC4. follow the workplace sanitization normsincluding distancing from sick people	-	-	-	-
	<i>Maintain clean and safe workplace</i>	15	15	-	15
	PC5. carry out basic safety checks before operationof all tools, implements, and machinery and reportidentified hazards to the supervisor	-	-	-	-
	PC6. wear appropriate Personal ProtectiveEquipment (PPE) while performing work inaccordance with the workplace policy	-	-	-	-
	PC7. follow the instructions mentioned on the labelsof chemicals/pesticides/fumigants etc to avoid hazards	-	-	-	-
	PC8. assess risks prior to performing manual handling jobs, and work according to currentlyrecommended safe practices	-	-	-	-
	PC9. sanitize equipment, tools and machinery beforeand after use	-	-	-	-
	PC10. use equipment and materials safely and correctly and return the same to designated storageafter use	-	-	-	-
	PC11. dispose waste safely and correctly in thedesignated area	-	-	-	-
	PC12. recognize risks to bystanders and takerequired action to reduce the risks	-	-	-	-
	PC13. work in a manner which minimizes environmental damage, ensuring all procedures andinstructions for controlling risks are followed	-	-	-	-
	PC14. report any accidents, incidents or problemswithout delay to an appropriate person and take necessary immediate action to reduce further danger	-	-	-	-
	PC15. follow government / workplace advisoriesincase of outbreak of any disease/disaster	-	-	-	-
<i>Administer appropriate emergency procedures</i>	15	5	-	10	

	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 withmanufacturer's specifications and workplace requirements	-	-	-	-
	PC18. provide treatment appropriate to the patient'sinjuries in accordance with recognized first aid techniques	-	-	-	-
	PC19. recover (if practical), clean, inspect/test, refurbish, replace and store the first aid equipments as appropriate	-	-	-	-
	PC20. report details of first aid administered in accordance with workplace procedures	-	-	-	-
	NOS Total	40	25	-	35
DGT/VSQ/N0102: Employability Skills (60 Hours)	<i>Introduction to Employability Skills</i>	1	1	-	-
	PC1. identify employability skills required for jobs in various industries	-	-	-	-
	PC2. identify and explore learning and employability portals	-	-	-	-
	<i>Constitutional values – Citizenship</i>	1	1	-	-
	PC3. recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.	-	-	-	-
	PC4. follow environmentally sustainable practices	-	-	-	-
	<i>Becoming a Professional in the 21st Century</i>	2	4	-	-
	PC5. recognize the significance of 21st Century Skills for employment	-	-	-	-
	PC6. practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life	-	-	-	-
	<i>Basic English Skills</i>	2	3	-	-
PC7. use basic English for everyday conversation in different contexts, in person and over the telephone	-	-	-	-	

PC8. read and understand routine information, notes, instructions, mails, letters etc. written in English	-	-	-	-
PC9. write short messages, notes, letters, e-mailsetc. in English	-	-	-	-
<i>Career Development & Goal Setting</i>	1	2	-	-
PC10. understand the difference between job and career	-	-	-	-
PC11. prepare a career development plan with short- and long-term goals, based on aptitude	-	-	-	-
<i>Communication Skills</i>	2	2	-	-
PC12. follow verbal and non-verbal communication etiquette and active listening techniques in various settings	-	-	-	-
PC13. work collaboratively with others in a team	-	-	-	-
<i>Diversity & Inclusion</i>	1	2	-	-
PC14. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC15. escalate any issues related to sexual harassment at workplace according to POSH Act	-	-	-	-
<i>Financial and Legal Literacy</i>	2	3	-	-
PC16. select financial institutions, products and services as per requirement	-	-	-	-
PC17. carry out offline and online financial transactions, safely and securely	-	-	-	-
PC18. identify common components of salary and compute income, expenses, taxes, investments etc	-	-	-	-
PC19. identify relevant rights and laws and use legal aids to fight against legal exploitation	-	-	-	-
<i>Essential Digital Skills</i>	3	4	-	-
PC20. operate digital devices and carry out basic internet operations securely and safely	-	-	-	-
PC21. use e- mail and social media platforms and virtual collaboration tools to work effectively	-	-	-	-
PC22. use basic features of word processor, spreadsheets, and presentations	-	-	-	-
<i>Entrepreneurship</i>	2	3	-	-

PC23. identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research	-	-	-	-
PC24. develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion	-	-	-	-
PC25. identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity	-	-	-	-
<i>Customer Service</i>	1	2	-	-
PC26. identify different types of customers	-	-	-	-
PC27. identify and respond to customer requests and needs in a professional manner.	-	-	-	-
PC28. follow appropriate hygiene and grooming standards	-	-	-	-
<i>Getting ready for apprenticeship & Jobs</i>	2	3	-	-
PC29. create a professional Curriculum vitae (Résumé)	-	-	-	-
PC30. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively	-	-	-	-
PC31. apply to identified job openings using offline /online methods as per requirement	-	-	-	-
PC32. answer questions politely, with clarity and confidence, during recruitment and selection	-	-	-	-
PC33. identify apprenticeship opportunities and register for it as per guidelines and requirements	-	-	-	-
NOS Total	20	30	-	-
Grand Total	600	795	-	555

Annexure 5: 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 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

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.

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.

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

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 7: Career Progression

Academic Progression:

The one-year professional course in Gardening and Nursery Management will lead to Diploma and Advanced Courses in Gardening and Nursery Management/Greenhouse Management/Plant Tissue Culture.

Career opportunities: The course on Gardening and Nursery Management can lead to a variety of career options, such as:

- Landscaper
- Groundskeeper
- Nursery manager
- Florist
- Horticultural consultant
- Environmental educator

Graduates of this program can find jobs in a variety of settings, including:

- Nurseries
- Landscape companies
- Botanical gardens
- Government agencies
- Educational institutions

- Private businesses: Graduates of this program can also start their own businesses.

Here are some of the specific job titles that graduates of this program can qualify for:

- Gardener
- Nursery Supervisor
- Assistant Landscape architect
- Horticulture Extension Service Provider
- Assistant Botanical garden curator
- Educational institution groundskeeper
- Private business groundskeeper
- Nursery owner
- Landscape design business owner

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Annexure: 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.

Mention the detailed assessment strategy in the provided template.

<1. Assessment System Overview:

- Batches assigned to the assessment agencies for conducting the assessment on SIP or email
- Assessment agencies send the assessment confirmation to VTP/TC looping SSC
- Assessment agency deploys the ToA certified Assessor for executing the assessment
- SSC monitors the assessment process & records

2. Testing Environment:

- Check the Assessment location, date and time
- If the batch size is more than 30, then there should be 2 Assessors.
- Check that the allotted time to the candidates to complete Theory & Practical Assessment is correct.

3. Assessment Quality Assurance levels/Framework:

- Question bank is created by the Subject Matter Experts (SME) are verified by the other SME
- Questions are mapped to the specified assessment criteria
- Assessor must be ToA certified & trainer must be ToT Certified

4. Types of evidence or evidence-gathering protocol:

- Time-stamped & geotagged reporting of the assessor from assessment location
- Centre photographs with signboards and scheme specific branding

5. Method of verification or validation:

- Surprise visit to the assessment location

6. Method for assessment documentation, archiving, and access

- Hard copies of the documents are stored

On the Job:

1. Each module (which covers the job profile of Automotive Service Assistant Technician) will be assessed separately.
2. The candidate must score 60% in each module to successfully complete the OJT.
3. Tools of Assessment that will be used for assessing whether the candidate is having desired skills and etiquette of dealing with customers, understanding needs & requirements, assessing the customer and perform Soft Skills effectively:
 - Videos of Trainees during OJT
 -
4. Assessment of each Module will ensure that the candidate is able to:
 - Effective engagement with the customers
 - Understand the working of various tools and equipment
 ->

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