

Model Curriculum

Makhana Grower cum Processor (Options: Processing/ Products Preparation)

SECTOR: AGRICULTURE & ALLIED
SUB-SECTOR: AGRICULTURE CROP PRODUCTION
OCCUPATION: FRUIT CROPS CULTIVATION
REF ID: AGR/Q0306, V1.0
NSQF LEVEL: 4



Certificate

CURRICULUM COMPLIANCE TO QUALIFICATION PACK – NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the

AGRICULTURE SKILL COUNCIL OF INDIA

for the

MODEL CURRICULUM

Complying to National Occupational Standards of

Job Role/ Qualification Pack: 'Makhana Grower cum Processor (Options: Processing/Products Preparation)'
QP No. 'AGR/Q0306 NSQF Level 4'

Date of Issuance: July 4th, 2018

Valid up to: March 31st, 2022

* Valid up to the next review date of the Qualification Pack



Authorised Signatory
(Agriculture Skill Council of India)

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Makhana Grower cum Processor (Options: Processing/ Products Preparation)

CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a “Makhana Grower cum Processor (Options: Processing/Products Preparation)”, in the “Agriculture & Allied” Sector/Industry and aims at building the following key competencies amongst the learner

Program Name	Makhana Grower cum Processor (Options: Processing/Products Preparation)		
Qualification Pack Name & Reference ID.	AGR/Q0306, v1.0		
Version No.	1.0	Version Update Date	
Pre-requisites to Training	Ability to read and write		
Training Outcomes	<p>After completing this programme, participants will be able to:</p> <p>Compulsory:</p> <ul style="list-style-type: none"> • Select and procure appropriate seed variety for makhana cultivation: different factors for considering seed variety, seed treatment • Manage nursery under the field system: layout of nursery, management of nursery • Carry out cultivation of makhana using Good Agricultural Practices (GAP): land/pond preparation, transplantation, timely irrigation, manure and fertilizer application, weed management, pest and disease management, suitable cropping pattern • Carry out harvesting and post-harvest management of makhana: timely harvest, clean, sort, grade, pack and label makhana, safe handling and transportation of makhana • Undertake basic market related activities for makhana: arrangement of finance, pooling of resources, market linkage, identify trading channels, track and record value chain of makhana • Practice health and safety at the work place: Well versed with health and safety measures in terms of personal as well as others’ safety <p>Option 1: Processing</p> <ul style="list-style-type: none"> • Carry out processing of makhana using makhana processing machines <p>Option 2: Products Preparation</p> <ul style="list-style-type: none"> • Carry out preparation of makhana products: flakes, makhana-kheer mix, flavoured makhana 		

This course encompasses 5 out of 5 Compulsory NOS (National Occupational Standards), 2 out of 2 Optional NOS of “Makhana Grower cum Processor (Options: Processing/Products Preparation)” Qualification Pack issued by “Agriculture Skill Council of India”.

COMPULSORY NOS:

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	Introduction Theory Duration (hh:mm) 04:00 Practical Duration (hh:mm) 00:00 Corresponding NOS Code Bridge Module	<ul style="list-style-type: none"> Understand general discipline in the class room (Do's & Don'ts) Explain the scope and importance of makhana in India and abroad Understand the role of a Makhana Grower cum Processor and the progression pathways 	Laptop, white board, marker, projector
2	Procure seed and manage nursery for makhana cultivation Theory Duration (hh:mm) 04:00 Practical Duration (hh:mm) 10:00 Corresponding NOS Code AGR/N0327	<ul style="list-style-type: none"> Select and procure the seed variety to be grown considering various factors Treat the seed as per the recommended dose Assess the nursery site and prepare the layout for nursery construction Carry out nursery management under the field system 	Laptop, white board, marker, projector, Audio-visual aids, record keeping book, receipt voucher, Raw Seed, sprayer, fertilizers, crop protection chemicals, irrigation tools & equipments
3	Carry out cultivation of makhana using Good Agricultural Practices (GAP) Theory Duration (hh:mm) 08:00 Practical Duration (hh:mm) 30:00 Corresponding NOS Code AGR/N0328	<ul style="list-style-type: none"> Carry out land/ pond preparation, ploughing and puddling Carry out transplantation of makhana seedlings Apply organic and inorganic fertilizers Carry out weed management Carry out integrated pest and disease management Carry out irrigation management Employ suitable cropping pattern Demonstrate integration of fish in makhana pond 	Laptop, white board, marker, projector, Audio-visual aids, record keeping book, receipt voucher, soil and water testing kit, plastic bags, labels, Disc plough, leveller, water tank, tractor, sprayer, fertilizers, crop protection chemicals, irrigation tools & equipment's, , container, fungicides, insecticides, Nose masks, head gear, rubber gloves, Safety

Sr. No.	Module	Key Learning Outcomes	Equipment Required
			boots, first aids kit
4	Harvest and post-harvest management of makhana Theory Duration (hh:mm) 8:00 Practical Duration (hh:mm) 30:00 Corresponding NOS Code AGR/N0329	<ul style="list-style-type: none"> Harvest the crop at the appropriate stage and time Carry out bagging of seeds Carry out drying and grading of seed Carry out pre-heating/ roasting of seed Carry out popping of seed Carry out polishing/finishing of popped makhana Carry out grading and packaging of popped makhana Carry out packaging of popped makhana Pack, store and transport the popped makhana Record information such as quality, quantity, expenditure incurred in operation, etc. in appropriate registers, record book and logs 	Laptop, white board, marker, projector, Audio-visual aids, Makhana Harvester, Bamboo pole (Kaara), Bamboo screen (Ganja), Sieves with different mesh size, Earthen pitcher, Cast iron pan, Bamboo basket, Gunny bags, Khonngi or Deli, Mats, Aphara, Batna and Thaapi, Chula (Earthen Pans), Bamboo sticks, Makhana grader, record keeping book, receipt voucher, crate, bags, fungicides, Ganj, Skin lotion, insecticides, Nose masks, head gear, rubber gloves, Safety boots, first aids kit
5	Undertake basic entrepreneurial activities for small enterprise Theory Duration (hh:mm) 08:00 Practical Duration (hh:mm) 20:00 Corresponding NOS Code AGR/N9908	<ul style="list-style-type: none"> Assess demand and supply of makhana in the market Seek information regarding subsidies/loan available through govt institutions Avail loan from the financial institutions Familiarize with the supply chain of makhana Identify and develop appropriate marketing channels Track prices prevailing in the market and formulate competitive pricing mechanism Maintain book of accounts Calculate B:C ratio Comply with relevant regulations in marketing and sale of the produce 	Laptop, white board, marker, projector, Audio-visual aids, pen, paper
	Maintain health and safety at the workplace Theory Duration (hh:mm) 04:00 Practical Duration	<ul style="list-style-type: none"> Identify risks to health and safety at the workplace and measures to be taken to control them Maintain a clean and efficient workplace Practice general safety and first aid administration Render appropriate emergency 	Laptop, white board, marker, projector, Personal protective equipment Like: Helmet / head gear, rubber gloves, Safety boots, First Aid Kit:

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	(hh:mm) 08:00 Corresponding NOS Code AGR/N9903	procedures <ul style="list-style-type: none"> Report timely to the appropriate person 	Bandages, Adhesive bandages, Betadine Solution / ointment, Pain relief spray / ointment, Antiseptic liquid; Phone directory, Search lights, fire extinguisher
	COMPULSORY NOS: Total Duration: Theory Duration (hh:mm) 36:00 Practical Duration (hh:mm) 98:00	Unique Equipment Required: Laptop, white board, marker, projector, Audio-visual aids, record keeping book, receipt voucher, Raw Seed, sprayer, fertilizers, crop protection chemicals, irrigation tools & equipments, soil and water testing kit, plastic bags, labels, Disc plough, leveller, water tank, tractor, sprayer, fertilizers, crop protection chemicals, irrigation tools & equipment's, , container, fungicides, insecticides, Makhana Harvester, Bamboo pole (Kaara), Bamboo screen (Ganja), Sieves with different mesh size, Earthen pitcher, Cast iron pan, Bamboo basket, Gunny bags, Khonngi or Deli, Mats, Aphara, Batna and Thaapi, Chula (Earthen Pans), Bamboo sticks, Makhana grader, record keeping book, receipt voucher, crate, bags, Ganj, Skin lotion, Personal protective equipment Like:Helmet / head gear, rubber gloves, Safety boots, First Aid Kit: Bandages, Adhesive bandages, Betadine Solution / ointment, Pain relief spray / ointment, Antiseptic liquid; Phone directory, Search lights, fire extinguisher	

OPTIONS (Optional to choose any or all or none)

OPTION 1: Processing

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	Carry out processing of makhana in the makhana processing unit Theory Duration (hh:mm) 10:00 Practical Duration (hh:mm) 30:00 Corresponding NOS Code AGR/N0330	<ul style="list-style-type: none"> Operate and handle different machineries used for makhana processing Wash and clean the raw seeds by raw makhana seed washer Grade and dry the makhana seeds by seed grader and seed dryer respectively Carry out pre-heating / initial roasting of raw makhana seed by seed roasting machine Carry out popping of seed by makhana popping machine Separate husk, unpopped whole seeds, unpopped decorticated kernels, partially popped makhana and popped makhana by makhana pop grader Grade unpopped makhana kernels and produce the makhana flour by 	Laptop, white board, marker, projector, Audio-visual aids, raw makhana seed washer, seed grader and seed dryer, seed roasting machine, makhana popping machine, makhana pop grader, makhana grinder, makhana packaging

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		makhana grinder <ul style="list-style-type: none"> Carry out packaging of the processed makhana by makhana packaging machine Carry out storage and transportation of the processed makhana 	machine, gunny bags, packaging materials, Makhana Gravity Separation Machine, Automatic Form Fill Sealing Machine
	OPTION 1 : Total Duration Theory Duration 10:00 Practical Duration 30:00	Unique Equipment Required: Laptop, white board, marker, projector, Audio-visual aids, raw makhana seed washer, seed grader and seed dryer, seed roasting machine, makhana popping machine, makhana pop grader, makhana grinder, makhana packaging machine, gunny bags, packaging materials, Makhana Gravity Separation Machine, Automatic Form Fill Sealing Machine	

OPTION 2: Products preparation

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	Carry out preparation of makhana products Theory Duration (hh:mm) 06:00 Practical Duration (hh:mm) 20:00 Corresponding NOS Code AGR/N0331	<ul style="list-style-type: none"> Prepare makhana flakes Prepare makhana kheer mix Prepare flavoured makhana using roasting and flavouring machine Pack the processed products using appropriate packaging materials Dispose waste materials in accordance with environmental health and safety guidelines Adhere to FSSAI and HACCP 	Laptop, white board, marker, projector, Audio-visual aid, Processing machinery, Roasting and flavouring machine, Packaging and labelling materials, Automatic Form Fill Sealing Machine
	OPTION 2 : Total Duration Theory Duration 06:00 Practical Duration 20:00	Unique Equipment Required: Laptop, white board, marker, projector, Audio-visual aids, Processing machinery, Roasting and flavouring machine, packaging and labelling materials, Makhana Gravity Separation Machine, Automatic Form Fill Sealing Machine	

<p>GRAND Total Duration</p> <p>Minimum Duration for the QP= <u>134 hrs</u> Theory: <u>36 hrs</u> Practical: <u>98 hrs</u></p> <p>Maximum Duration for the QP= <u>200 hrs</u> Theory: <u>52 hrs</u> Practical: <u>148 hrs</u></p>	<p>Unique Equipment Required for the QP:</p> <p>Laptop, white board, marker, projector, Audio-visual aids,</p>
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(This syllabus/ curriculum has been approved by [Agriculture Skill Council of India](#))

Trainer Prerequisites for Job role: “Makhana Grower cum Processor (Options: Processing/Products Preparation)” mapped to Qualification Pack: “AGR/Q0306, v1.0”

Sr. No.	Area	Details
1	Description	Trainer is responsible for educating the trainees – cultivation of makhana as per the recommended package of practices, its processing and selling different kinds of value added products
2	Personal Attributes	Trainer should be Subject Matter Expert. He/ she should have good communication, leadership, observation and practical oriented skills.
3	Minimum Educational Qualifications	Diploma in Agriculture
4a	Domain Certification	Certified for Job Role: “ <u>Makhana Grower cum Processor (Options: Processing/Products Preparation)</u> ” mapped to QP: “ <u>AGR/Q0306 v1.0</u> ”. Minimum accepted score is 80%.
4b	Platform Certification	Certified for the Job Role: “Trainer”, mapped to the Qualification Pack: “ <u>MEP/Q0102</u> ”. Minimum accepted score as per respective SSC guidelines is 80%.
5	Experience	<ul style="list-style-type: none"> • M Sc (Agriculture/Horticulture/Botany/Forestry/Fisheries) • B. Sc. (Agriculture /Horticulture/Botany/Forestry/Fisheries) with 2 years of relevant experience • Diploma in Agriculture with 5 years of relevant experience

Annexure: Assessment Criteria

Job Role	Makhana Grower cum Processor (Options: Processing/Products Preparation)
Qualification Pack	AGR/Q0306, v1.0
Sector Skill Council	Agriculture Skill Council of India

Guidelines for Assessment:

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
4. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).
5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criterion.
6. To pass the Qualification Pack , every trainee should score a minimum of 70% of aggregate marks to successfully clear the assessment.
7. In case of *unsuccessful completion*, the trainee may seek reassessment on the Qualification Pack.

Compulsory NOS		Marks Allocation			
Total Marks: 415					
Assessable outcomes	Assessment criteria for outcomes	Total Marks	Out of	Theory	Skills Practical
1. AGR/N0327 Procure seed and manage nursery for makhana cultivation	PC1. select varieties based on area / ecosystem / season, yield and resistance to pests and diseases and maximum pop recovery	50	3	1	2
	PC2. identify various vendors / suppliers (including government nurseries / department) for the certified seeds		3	1	2
	PC3. ascertain the quality of seed material from each source in terms of 'free from pests and diseases germination percentage etc.		3	1	2
	PC4. collect the prevailing market rates for the seed material from different sources		3	1	2
	PC5. procure the seed material		2	1	1
	PC6. store the seed at appropriate place as per the recommended procedure		2	1	1
	PC7. treat the seed as per the recommended dosage		3	1	2
	PC8. assess nursery site based on the requirement		3	1	2
	PC9. prepare suitable design and layout for nursery construction		4	2	2
	PC10. plough and puddle the nursery field		3	1	2
	PC11. maintain depth of water as per depth of main field		2	1	1
	PC12. ensure proper facilities for timely irrigation		3	1	2
	PC13. broadcast the sprouted seed as per the recommended seed rate		2	1	1
	PC14. apply manure in the recommended doses		3	2	1
	PC15. control weeds as per the recommended practices		3	1	2
	PC16. control pests and diseases as per the recommended practices		5	2	3
	PC17. uproot the seedlings for transplantation at the recommended stage		3	1	2
			50	20	30
2. AGR/N0328 Carry out cultivation of makhana using Good Agricultural	PC1. select suitable methods of cultivation-field system, pond system, makhana-fish integration based on the available resources	130	3	1	2
	PC2. renovate pond/wetland area		3	1	2
	PC3. clean the field/pond		2	1	1

Practices (GAP)	PC4. plough, submerge and puddle the main field incase of field cultivation and plough and dry the pond incase of pond cultivation	3	1	2
	PC5. carry out leveling of the field/pond	3	1	2
	PC6. carry out manuring, fertilizing and liming of pond incase of pond cultivation	3	1	2
	PC7. irrigate the field/pond	3	1	2
	PC8. prepare and raise the bunds to suitable height	3	1	2
	PC9. compact the bunds	3	1	2
	PC10. employ advanced practices (central/peripheral vacate system) that would support integrated makhana-fish cultivation	3	1	2
	PC11. carry out sowing of seeds in the pond system	2	1	1
	PC12. carry out root dipping of makhana seedlings for plant protection as per the recommended procedures	3	1	2
	PC13. maintain inter-row distance between the seedlings	2	1	1
	PC14. transplant seedlings as per the recommended procedures	3	1	2
	PC15. carry out gap-filling as and when required	2	1	1
	PC16. carry out soil sampling for soil testing	3	1	2
	PC17. procure the recommended doses of fertilizers/nutrients/Farm Yard Manure (FYM) as mentioned in the soil health card	3	1	2
	PC18. select appropriately decomposed farm yard manure for soil application	2	1	1
	PC19. apply the FYM to the soil as per recommended dosage and procedure before planting and during crop cultivation (if required)	3	1	2
	PC20. employ various cultural practices that enhances the soil nutrient status for the benefit of crop stand	3	1	2
	PC21. apply organic and inorganic fertilizers for macro and micro nutrients as per the recommended dosage, timing and method of application	3	1	2
	PC22. apply lime before transplanting	3	1	2
	PC23. identify different weeds afflicting the makhana crop	3	1	2
	PC24. carry out manual weeding at appropriate stages of crop growth	2	1	1
	PC25. clean the field bunds regularly to avoid proliferation of weed seeds	2	1	1

	PC26. identify different types of pests and diseases in makhana crop		3	1	2
	PC27. identify crop stage and pest/disease incidence – and prepare pest/disease calendar		3	1	2
	PC28. diagnose signs and symptoms of different pest and disease infestation		3	1	2
	PC29. identify the pest life cycle duration and their behavior		3	1	2
	PC30. identify natural enemies of the pests		3	1	2
	PC31. identify mode of transmission of different diseases (implements, vectors, water, rain, wind)		3	1	2
	PC32. identify and select suitable preventive and curative measures to control pests and diseases- chemical, biological, mechanical, cultural		3	1	2
	PC33. carry out preventive and curative measures to control pests and diseases- chemical, biological, mechanical, cultural		8	3	5
	PC34. prepare and apply biopesticides like Neem Seed Kernel Extract (NSKE), leaf extract, panchagavya spray, sour butter milk extract etc depending on the pest type		5	1	4
	PC35. prepare and apply agrochemical sprays as per the recommended doses using suitable method		3	1	2
	PC36. ensure standing water is maintained at the recommended depth in the pond/main field		1	0	1
	PC37. carry out water treatment based on the water test report		3	1	2
	PC38. ensure measures to avoid water loss through seepage and leaching		3	1	2
	PC39. select suitable cropping system based on the type of land		3	1	2
	PC40. demonstrate integration of fish in makhana pond		5	2	3
	PC41. rear, harvest and market the fish		4	1	3
	PC42. transplant suitable crop after the harvest of makhana, viz. paddy, water chestnut etc		3	1	2
	PC43. harvest, grade and market the agricultural produce		3	1	2
			130	45	85
3. AGR/N0329 Harvest and post-harvest management of makhana	PC1. harvest the crop at the appropriate stage and time	75	5	2	3
	PC2. fill the field with water up to the desired level (1.5 ft.)		1	0	1
	PC3. wash the harvested produce to remove thin layer of decomposed aril		2	1	1

	PC4. carry out bagging of seeds		4	1	3
	PC5. dip the seeds in water for maintaining their viability		1	0	1
	PC6. carry out drying and grading of seeds		8	2	6
	PC7. carry out pre-heating/ roasting of seeds		8	2	6
	PC8. carry out popping of seeds		8	2	6
	PC9. carry out polishing/finishing of popped makhana		8	2	6
	PC10. carry out grading of popped makhana		8	2	6
	PC11. carry out packaging of popped makhana		8	3	5
	PC12. label the packed item correctly with all the required information		5	3	2
	PC13. carry out storage of popped makhana		2	1	1
	PC14. record information such as quality, quantity, expenditure incurred in operation, etc. in appropriate registers, record book and logs		5	3	2
	PC15. carry out safe transportation of the produce		2	1	1
			75	25	50
4. AGR/N9908 Undertake basic entrepreneurial activities for small enterprise	PC1. seek information regarding demand and supply of produce in the market	100	10	5	5
	PC2. identify target customers and assess their needs such as amount required, purpose, quality, expectations, etc.		10	5	5
	PC3. perform basic accounting such as calculating expenditure incurred, costing and pricing of produce		10	5	5
	PC4. ensure that the cost of production, transportation and marketing are included in costing and pricing		10	5	5
	PC5. collect information related to various subsidies/funds offered by the Government, authorized state units and other financial institutions involved with the promotion of the produce		10	5	5
	PC6. comply with relevant regulations in marketing of the produce		10	5	5
	PC7. track information related to wholesale and retail price of the produce		10	5	5
	PC8. record daily sale and purchase of items in designated log books, register, etc.		10	5	5
	PC9. record quantity, quality, date of manufacture and batch number of every produce accurately		10	5	5
	PC10. identify appropriate marketing channels related to the produce considering requirements and constraints		10	5	5
			100	50	50

5. AGR/N9903 Maintain health and safety at the workplace	PC1. undertake basic safety checks before operation of all machinery and vehicles and ensure hazards are reported to the appropriate supervisor	60	2	1	1
	PC2. Identify work for which protective clothing or equipment is required is identified and the appropriate protective clothing or equipment is used in performing these duties in accordance with workplace policy		2	1	1
	PC3. read and understand the hazards of use and contamination mentioned on the labels of pesticides/fumigants etc		5	2	3
	PC4. assess risks prior to performing manual handling jobs, and work according to currently recommended safe practice		5	3	2
	PC5. use equipment and materials safely and correctly and return the same to designated storage when not in use		5	2	3
	PC6. dispose off waste safely and correctly in a designated area		2	1	1
	PC7. recognise risks to bystanders and take action to reduce risk associated with jobs in the workplace		5	3	2
	PC8. perform your work in a manner which minimizes environmental damage by following all procedures and work instructions for controlling risk		2	1	1
	PC9. report any accidents, incidents or problems without delay to an appropriate person and take necessary immediate action to reduce further danger		2	1	1
	PC10. follow procedures for dealing with accidents, fires and emergencies, including communicating location and directions to emergency		5	2	3
	PC11. follow emergency procedures to company standard / workplace requirements		5	2	3
	PC12. use emergency equipment in accordance with manufacturers' specifications and workplace requirements		5	3	2
	PC13. provide treatment appropriate to the patient's injuries in accordance with recognized first aid techniques		5	3	2
	PC14. recover (if practical), clean, inspect/test, refurbish, replace and store the first aid equipment as appropriate		6	3	3
	PC15. report details of first aid administered in accordance with workplace procedures		4	2	2
		60	30	30	

		TOTAL	415	170	245
OPTIONS					
OPTION 1: Processing					
Total Marks: 100				Marks Allocation	
Assessable Outcomes	Assessment Criteria	Total Marks	Out Of	Theory	Skills Practical
1. AGR/N0330 Carry out processing of makhana in the makhana processing unit	PC1. illustrate the layout of the makhana processing unit	100	3	2	1
	PC2. comply with relevant health and safety regulations pertaining to makhana processing unit		3	2	1
	PC3. follow the Standard Operating Procedures (SOP) for handling different machineries		3	2	1
	PC4. illustrate the components and functioning of different machineries		4	2	2
	PC5. check the working and performance of all machineries		5	2	3
	PC6. assess possible risks and hazards in the work environment and comply with safety measures to minimize injury to self and others		4	2	2
	PC7. operate and handle different machineries used for makhana processing		10	4	6
	PC8. wash and clean the raw seeds by raw makhana seed washer		5	1	4
	PC9. grade the seeds on the basis of seed sizes by makhana seed grader		5	1	4
	PC10. dry the graded raw makhana seed by makhana seed dryer		5	1	4
	PC11. carry out pre heating / initial roasting of raw makhana seed by seed roasting machine		5	1	4
	PC12. carry out popping of seed by makhana popping machine		5	1	4
	PC13. separate husk, unpopped whole seeds, unpopped decorticated kernels, partially popped makhana and popped makhana by makhana pop grader		5	1	4
	PC14. grade unpopped makhana kernels and produce the makhana flour by makhana grinder		5	1	4
	PC15. carry out packaging of the processed makhana by makhana packaging machine		5	2	3
	PC16. carry out storage of the processed makhana		3	1	2
	PC17. carry out transportation of the processed makhana		3	1	2
	PC18. Ensure that the work area is in a safe and clean condition before leaving the premises		3	1	2
	PC19. Keep the tools and materials back in appropriate storage area		2	1	1

	PC20. carry out periodic maintenance of the makhana processing machineries following the SOP		5	2	3
	PC21. attend to minor repairs/ faults of the machineries, if required		5	2	3
	PC22. dispose wastes materials in accordance with environmental health and safety guidelines		5	1	4
	PC23. report any work related problems or issues to responsible authority and seek guidance on how to rectify problems		2	1	1
			100	35	65
OPTIONS					
OPTION 2: Products Preparation					
Total Marks: 100				Marks Allocation	
Assessable Outcomes	Assessment Criteria	Total Marks	Out Of	Theory	Skills Practical
1. AGR/N0331 Carry out preparation of makhana products	PC1. ensure that the work area is safe and hygienic for preparation of makhana products	100	5	2	3
	PC2. ensure the working of all the tools and equipments used for preparation of makhana products		5	1	4
	PC3. ensure the availability of the raw materials required		5	2	3
	PC4. select ingredients and their quantity for preparing the desired product		5	2	3
	PC5. prepare makhana flakes		10	2	8
	PC6. prepare instant makhana kheer mix		10	2	8
	PC7. prepare flavoured makhana using roasting and flavouring machine		20	10	10
	PC8. pack the processed products using appropriate packaging materials		20	10	10
	PC9. Keep the tools and materials back in appropriate storage area		5	2	3
	PC10. dispose wastes materials in accordance with environmental health and safety guidelines		5	2	3
	PC11. adhere to Hazard Analysis Critical Control Point (HACCP) and Food Safety and Standards Authority of India (FSSAI) regulations		10	5	5
			100	40	60