

Model Curriculum

Food Microbiologist

SECTOR: FOOD PROCESSING

SUB-SECTOR: FRUIT & VEGETABLE, FOOD GRAIN MILLING (INCLUDING OILSEEDS), DAIRY PRODUCTS, MEAT & POULTRY, FISH & SEAFOOD, BREAD & BAKERY, ALCOHOLIC BEVERAGES, AERATED WATER/ SOFT DRINKS, SOYA FOOD, PACKAGED FOOD

OCCUPATION: QUALITY ANALYSIS

REF ID: FIC/Q7603, V1.0

NSQF LEVEL: 6



Certificate

CURRICULUM COMPLIANCE TO QUALIFICATION PACK – NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the

FOOD INDUSTRY CAPACITY AND SKILL INITIATIVE (FICSI)

for the

MODEL CURRICULUM

Complying to National Occupational Standards of
Job Role/ Qualification Pack: 'Food Microbiologist' QP No. 'FIC/Q7603, NSQF Level 6'

Date of Issuance: 04 September, 2018

Valid up to: 30 June, 2019

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



Authorized Signatory
(Food Industry Capacity and Skill Initiative)

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Food Microbiologist

CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a “Food Microbiologist”, in the “Food Processing” Sector/Industry and aims at building the following key competencies amongst the learner

Program Name	Food Microbiologist		
Qualification Pack Name & Reference ID. ID	FIC/Q7603, v1.0		
Version No.	1.0	Version Update Date	04/09/2018
Pre-requisites to Training	Bachelor's degree in microbiology and 2-3 years' experience in a food processing unit handling microbiological analysis of food products		
Training Outcomes	After completing this programme, participants will be able to: <ul style="list-style-type: none"> • Prepare and maintain work area and machineries • Carry out food microbiological analysis • Document and maintain records relate to food microbiology • Monitor food safety and hygiene system. • Manage and lead a team 		

This course encompasses 6 out of 6 National Occupational Standards (NOS) of “Food Microbiologist” Qualification Pack issued by “Food Industry Capacity and Skill Initiative”.

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	Introduction to the training program Theory Duration (hh:mm) 02:00 Practical Duration (hh:mm) 00:00 Corresponding NOS Code Bridge Module	<ul style="list-style-type: none"> • Introduce each other and build rapport with fellow participants and the trainer. • Explain the roles and responsibilities of food microbiologist • Explain food processing • Describe the various sub sectors of food processing industry • List the types of food microbes • Explain the causes of food spoilage • Explain the process of food spoilage • Illustrate the criteria to check food spoilage 	
2	Organizational standards and norms Theory Duration (hh:mm) 04:00 Practical Duration (hh:mm) 02:00 Corresponding NOS Code FIC/N7610	<ul style="list-style-type: none"> • Follow the roles and responsibilities of a food microbiologist • State how to conduct yourself at the workplace • Illustrate the personal hygiene and sanitation guidelines • Illustrate the food safety hygiene standards to follow in a work environment 	Laptop, protective gloves, head caps, aprons, safety goggles, safety boots, mouth masks, sanitizer, safety manual
3	Prepare and Maintain Work Area and lab equipment Theory Duration (hh:mm) 14:00 Practical Duration (hh:mm) 12:00 Corresponding NOS Code FIC/N7609	<ul style="list-style-type: none"> • Demonstrate cleaning laminar air flow cabinet or lab bench using approved disinfectants and sanitizers • Ensure cleanliness is maintained to keep it free from microbes to carry out microbiological analysis • Illustrate destruction of microbes from used culture media following SOP • Demonstrate cleaning of equipment and glass wares used with recommended sanitizers following specifications and organisation standards 	weighing balance, homogenizer, autoclave, laminar air flow chamber, vacuum pump, Bunsen burner, gas cylinder, micropipettes, pipettes, Petri dishes, inoculation loop, incubator, refrigerator, slides, microscope, coverslips, refrigerator, different types of media, various chemicals, colony counter
4	Carry out microbiological	<ul style="list-style-type: none"> • Follow weighing required chemicals, solvents in calibrated instruments, prepare liquid and solid culture 	weighing balance, homogenizer, autoclave, laminar air

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	<p>analysis of food products</p> <p>Theory Duration (hh:mm) 15:00</p> <p>Practical Duration (hh:mm) 52:00</p> <p>Corresponding NOS Code FIC/N7610</p>	<p>media (nutrient broth and nutrient agar) following SOP</p> <ul style="list-style-type: none"> • Demonstrate transferring prepared broth, culture media, solvent etc. in glass wares, plug with cotton plug, wrap with paper and prepare for sterilization using autoclave • Remove sterilized items from autoclave and transfer to sterile area, cool and store at suitable temperature following SOP • Demonstrate preparing of solid culture media such as slopes/slants, plates from nutrient agar in sterile area • Illustrate sampling requirement and procedure following SOP • Demonstrate taking swab test samples from employees hand and cloth for evaluating personnel hygiene, on equipment and machineries in the production line, in the premises for evaluating sanitation and collect air samples and its labelling procedures following SOP • Prepare the work space (Laminar Air Flow Cabinet) or lab bench by wiping with disinfectant, clean glass ware, tools and equipment dilute samples following SOP • Follow compiling of results of microbiological tests and prepare microbiological data • Analyze microbiological data and compare with food safety standards of the organisation, national and international regulations • Establish implications of test results with respect to food safety standards and draw conclusions • Demonstrate inoculating samples aseptically in labelled liquid and solid culture media (through suitable techniques such as broth inoculation, pour plate, direct plating, streak plate, spread plate, membrane filtration, etc.), as applicable, following SOP • Demonstrate adjusting controls of all equipment • Demonstrate carrying out serial dilution of sample in sterile media 	<p>flow chamber, vacuum pump, Bunsen burner, gas cylinder, micropipettes, pipettes, Petri dishes, inoculation loop, incubator, refrigerator, slides, microscope, coverslips, refrigerator, different types of media, various chemicals, colony counter</p>

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<p>and plating them in sterile condition for counting microbes, following SOP</p> <ul style="list-style-type: none"> • Illustrate counting the micro-organisms and colonies under the microscope and record counts • Perform test to identify the type and characteristics of microbes from the colonies of microbes grown in the petri plates plated through serial dilution • Follow preserving of pure culture through refrigeration, paraffin method, freeze drying etc maintaining the parameters like temperature, anaerobic condition, pressure etc, following SOP • Demonstrate compiling the results of microbiological tests and prepare microbiological data • Illustrate analysing of microbiological data and compare with food safety standards of the organisation, national and international regulations 	
5	<p>Monitor food safety system</p> <p>Theory Duration (hh:mm) 10:00</p> <p>Practical Duration (hh:mm) 17:00</p> <p>Corresponding NOS Code FIC/N7611</p>	<ul style="list-style-type: none"> • Illustrate maintaining of workplace in a clean and tidy order to meet workplace standards and waste disposal following industry standards • Follow corrective action • Illustrate Carrying out internal audit on housekeeping to ensure safety and hygiene system are in place • Identify food safety requirements in the food products production process based on microbial analysis results of production line, premises and food product • Identify microbiological hazards in production process, and its critical control point to minimize or prevent those hazards • Illustrate taking swab sample of work area, materials, equipment, products and personnel routinely for microbiological analysis and discussing of reports • Follow procedures after audit like different findings, reanalyzing the preventive measures based on the audit findings, and arriving at additional preventive controls to address the hazards identified 	<p>Laptop, white board, marker, chart papers, projector, trainer's guide and student handbook , weighing balance, homogenizer, autoclave, laminar air flow chamber, vacuum pump, Bunsen burner, gas cylinder, micropipettes, pipettes, Petri dishes, inoculation loop, incubator, refrigerator, slides, microscope, coverslips, refrigerator, different types of media, various chemicals, colony counter</p>

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<ul style="list-style-type: none"> Follow monitoring premises of the food processing unit, processing machineries, drainage system to ensure it meets food hygiene standards of the processing unit Follow monitoring storage area for raw materials, packaging materials, finished goods to ensure quality standards are met and food products are fit for human consumption Illustrate monitoring of personnel hygiene and health condition of employees and PPE Follow hygiene system of the organisation 	
6	<p>Complete documentation and record keeping related to microbiological analysis</p> <p>Theory Duration (hh:mm) 04:00</p> <p>Practical Duration (hh:mm) 14:00</p> <p>Corresponding NOS Code FIC/N7612</p>	<ul style="list-style-type: none"> Describe the entire documentation system followed in the organization. Explain the need for documenting and maintaining records of purchase of: raw materials and packaging materials and machineries. Follow the method of documenting and recording the details of materials to final purchase to inventory management 	Laptop/Computer
7	<p>Food Safety, Hygiene and Sanitation</p> <p>Theory Duration (hh:mm) 08:00</p> <p>Practical Duration (hh:mm) 22:00</p> <p>Corresponding NOS Code FIC/N9001</p>	<ul style="list-style-type: none"> State the importance of safety, hygiene and sanitation in the baking industry Follow the industry standards to maintain a safe and hygiene workplace Follow HACCP principles to eliminate food safety hazards in the process and products Follow safety practices in the work area 	protective gloves, head caps, aprons, safety goggles, safety boots, mouth covers, sanitizer, safety manual ,logbooks etc.
8	<p>Manage and lead a team</p> <p>Theory Duration</p>	<ul style="list-style-type: none"> Ensure that the team is aware of the schedule and job expectations on a daily basis involve the team in 	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	(hh:mm) 13:00 Practical Duration (hh:mm) 10:00 Corresponding NOS Code FIC/N9004	<ul style="list-style-type: none"> regular meetings to communicate information intended for them • Ensure communication to the team on any changes in policies/ processes by the organization through required verbal/ written mechanisms • Ensure participation of the team in various engagement initiatives organized by the organization • Counsel and address issues among the team for any work related issues • Support the manager in deployment of the team as per production schedule and the organizational norms and guidelines • Ensure periodic training of the team and support the team by delivering trainings • Share knowledge of processes, techniques and products with the team to enhance their skill levels • Provide feedback to the manager pertaining to performance of the team 	
9	Professional and Core Skills Theory Duration (hh:mm) 08:00 Practical Duration (hh:mm) 13:00 Corresponding NOS Code Bridge Module	<ul style="list-style-type: none"> • Plan a general aptitude self-assessment test • Identify personal strengths and weaknesses • Plan and schedule the work order and manage time effectively to complete the tasks assigned • Prevent potential problems from occurring • Resolve issues and problems using acquired knowledge and realize the importance of decision making • Identify potential problems and make sound and timely decision • Improve your reading skills • State the importance of listening 	Laptop/Computer
10	IT Orientation Theory Duration (hh:mm) 10:00 Practical Duration (hh:mm) 10:00	<ul style="list-style-type: none"> • Identify parts of the computer • Use the computer keyboard effectively to type • Use computer applications effectively to record day-to-day activities • Use the word processor effectively • Use the spreadsheet application effectively • Use the computer to document day-to-day activities 	Laptop/Computer

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	Corresponding NOS Code FIC/N7612		
	Total Duration 240:00 Theory Duration 88:00 Practical Duration 152:00	Unique Equipment Required: Laptop, white board, marker, chart papers, projector, trainer's guide and student handbook, weighing balance, homogenizer, autoclave, laminar air flow chamber, vacuum pump, Bunsen burner, gas cylinder, micropipettes, pipettes, Petri dishes, inoculation loop, incubator, refrigerator, slides, microscope, coverslips, refrigerator, different types of media, various chemicals, colony counter	

Grand Total Course Duration: **240Hours, 0 Minutes**

(This syllabus/ curriculum has been approved by SSC: Food Industry Capacity and Skill Initiative)

Trainer Prerequisites for Job role: “Food Microbiologist” mapped to Qualification Pack: “FIC/Q7603, v1.0”

Sr. No.	Area	Details
1	Description	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack “FIC/Q7603”, Version 1.0
2	Personal Attributes	An aptitude for conducting training, and pre/ post work to ensure competent, employable candidates at the end of the training, and pre/post work to ensure competent, employable candidates at the end of the training. Strong communication skills, ability to work as part of a team; a passion for quality and for developing others; well-organized and focused, eager to learn and keep oneself updated with the latest in the mentioned fields.
3	Minimum Educational Qualifications	<ul style="list-style-type: none"> • M.Sc/M.Tech/ME in Food Technology or Food Engineering with 1-2 years of hands on experience in microbiology dept. of a food industry • B.Sc (home Sc) /B.Tech/BE in Food Technology or Food Engineering with 2-3 years of hands on experience in microbiology dept. of a food industry • Diploma in food Technology or Food Engineering with 4 years of hand on experience in microbiology dept. of a food industry
4a	Domain Certification	Certified for Job Role: “Food Microbiologist” mapped to QP: “FIC/Q7603, v1.0”. Minimum accepted score is 80%
4b	Platform Certification	Recommended that the Trainer is certified for the Job Role: “Trainer”, mapped to the Qualification Pack: “MEP/Q0102”. Minimum accepted score is 80 % as per FICSI guidelines.
5	Experience	<ul style="list-style-type: none"> • M.Sc/M.Tech/ME in Food Technology or Food Engineering with 1-2 years of hands on experience in microbiology dept. of a food industry • B.Sc (home Sc) /B.Tech/BE in Food Technology or Food Engineering with 2-3 years of hands on experience in microbiology dept. of a food industry • Diploma in food Technology or Food Engineering with 4 years of hand on experience in microbiology dept. of a food industry

Annexure: Assessment Criteria

Assessment Criteria	
Job Role	Food Microbiologist
Qualification Pack	FIC/Q7603, v1.0
Sector Skill Council	Food Processing

Guidelines for Assessment

- 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
- The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
- Assessment will be conducted for all compulsory NOS, as well as the selected elective NOS/set of NOS.
OR
- Assessment will be conducted for all compulsory NOS, as well as the selected optional NOS/set of NOS.
- Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below)
- Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criteria
- To pass the Qualification Pack, every trainee should score a minimum of 70% of aggregate marks to successfully clear the assessment.
- In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack

Assessable outcomes	Assessment criteria for outcomes	Marks Allocation			
		Total Marks	Out Of	Theory	Skills Practical
1. FIC/N7609 (Prepare and maintain work area and laboratory equipment)	PC1. clean laminar air flow cabinet or lab bench using approved disinfectants and sanitizers	100	15	5	10
	PC2. ensure cleanliness is maintained to keep it free from microbes to carry out microbiological analysis		15	5	10
	PC3. ensure that the work area is safe and hygienic for microbiological analysis of food products		15	5	10
	PC4. ensure destruction of microbes from used culture media following SOP		10	4	6

	PC5. ensure the working and performance of all equipments and tools used for microbiological analysis of food products like weighing scale, homogeniser, autoclave, laminar air flow chamber, vacuum pump, bunsen burner, inoculation loop, incubator, refrigerator, microscope etc		15	5	10
	PC6. clean the equipments and glass wares used with recommended sanitizers following specifications and organisation standards		10	4	6
	PC7. attend minor adjustments of equipments, if required		5	2	3
	PC8. organize glass wares and equipment for analysis		15	5	10
			100	35	65
2. FIC/N7610 (Carry out microbiological analysis of food products)	PC1. read and understand standard operating procedures for preparing culture media	100	2	1	1
	PC2. weigh required chemicals, solvents in calibrated instruments, prepare liquid and solid culture media (nutrient broth and nutrient agar) following SOP		3	1	2
	PC3. transfer prepared broth, culture media, solvent etc in glass wares, plug with cotton plug, wrap with paper and prepare for sterilization		3	1	2
	PC4. place the broth, culture media, solvent, glassware etc in the autoclave, set control parameters like temperature, time etc of autoclave, and start equipment for sterilization		4	1.5	2.5
	PC5. remove sterilized items from autoclave and transfer to sterile area, cool and store at suitable temperature following SOP		3	1	2
	PC6. prepare solid culture media like slopes/slants, plates from nutrient agar in sterile area		3	1	2
	PC7. maintain inventory of all lab chemicals, glass wares, consumables etc for microbiological analysis		3	1	2

	PC8. read and understand sampling requirement from the production schedule and discuss with the manager on the sampling plan		2	1	1
	PC9. read and understand sampling procedure and sample raw materials, packaging materials, online production samples, finished products, shelf life samples, market samples, customer/consumer complaint samples, following SOP		2	1	1
	PC10. take swab test samples from employees hand and cloth for evaluating personnel hygiene, on equipments and machineries in the production line, in the premises for evaluating sanitation, collect air samples, following SOP		4	1.5	2.5
	PC11. label the samples with details like sample type, date and time of sampling, batch/manufacture /expiry details (as applicable), record sample details in the lab register		2	0.5	1.5
	PC12. transfer the samples to microbiology lab for analysis and store following SOP until analysis		2	0.5	1.5
	PC13. read and understand the standard operating procedures (SOP) for analysis of microbes in all types of sample		2	1	1
	PC14. prepare the work space (Laminar Air Flow Cabinet) or lab bench by wiping with disinfectant, clean glass ware, tools and equipments		3	1	2
	PC15. dilute samples following SOP to prepare for testing (or) start vacuum pump and filter sample through thin membrane (as applicable)		3	1	2
	PC16. label liquid broth , solid culture media plates with sample details, organism details and date		2	0.5	1.5
	PC17. inoculate samples aseptically in labeled liquid and solid culture media (through suitable techniques like broth inoculation, pour plate, direct plating, streak plate, spread plate, membrane filtration etc), as applicable following SOP		4	1.5	2.5

PC18. set controls of incubator like temperature, time etc and place inoculated media in it for microbial growth	3	1	2
PC19. remove plates from the incubator after incubation period, transfer to the sterile atmosphere, and prepare for counting the microbes	3	1	2
PC20. adjust controls of microscope, place petri dish under microscope and count the microbes directly and record counts (or)	3	1	2
PC21. carry out serial dilution of sample in sterile media in sterile condition for counting microbes, following SOP	4	1.5	2.5
PC22. plate the diluted samples and incubate following incubation conditions for the organism	4	1.5	2.5
PC23. count the micro-organisms and colonies under the microscope and record counts	3	1	2
PC24. calculate the concentration of micro-organisms in original sample	3	1	2
PC25. destroy microbes in used culture media following SOP before disposal or cleaning of glassware	4	1.5	2.5
PC26. perform test to identify the type and characteristics of microbes from the colonies of microbes grown in the petri plates plated through serial dilution	4	1.5	2.5
PC27. prepare enrichment media, plate, inoculate and incubate micro organism of selected type and characteristics (like those required as starter culture for fermentation of food products) to prepare pure culture, following SOP	4	1.5	2.5
PC28. preserve pure culture through refrigeration, paraffin method, freeze drying etc maintaining the parameters like temperature, anaerobic condition, pressure etc, following SOP	4	1.5	2.5
PC29. transfer pure culture into a fresh medium at specified intervals, to allow continuous growth and viability of microorganisms, for sub-culturing of microbes	4	1	3

	PC30. compile the results of microbiological tests and prepare microbiological data		2	0.5	1.5
	PC31. analyze microbiological data and compare with food safety standards of the organisation, national and international regulations		3	1	2
	PC32. establish implications of test results with respect to food safety standards and draw conclusions		2	0.5	1.5
	PC33. document test results, conclusions and recommendations and share with manager for immediate corrective actions		3	1	2
			100	35	65
3. FIC/N7611 (Monitor food safety system)	PC1. read and understand standard operating procedures (SOP) and checklist for housekeeping	100	2	1	1
	PC2. visit the warehouses (raw materials, packaging materials, finished goods warehouse), process/production area, packaging area, laboratory at regular intervals and perform checks based on the housekeeping checklist to ensure food safety		6	2	4
	PC3. ensure workplace is maintained in a clean and tidy order to meet workplace standards, waste is disposed following industry standards		4	1.5	2.5
	PC4. inform the department supervisor in case of any deviation, suggest/ recommend corrective actions		4	1.5	2.5
	PC5. ensure recommended corrective action has been implemented		5	2	3
	PC6. carryout internal audit on housekeeping to ensure safety and hygiene system are in place		5	2	3
	PC7. identify food safety requirements in the food products production process based on microbial analysis		5	2.5	2.5

	results of production line, premises and food products				
	PC8. identify microbiological hazards in production process, and its critical control point to minimize or prevent those hazards		5	2.5	2.5
	PC9. take swab sample of work area, materials, equipment, products and personnel routinely for microbiological analysis, to monitor and ensure compliance with food safety requirements		6	2	4
	PC10. discuss test reports and findings with reporting manager and department managers with possible recommendations to establish preventive control measures		5	2.5	2.5
	PC11. carry out audits on processes and practices to identify gap in organisation food safety system, to monitor the effectiveness of the implemented preventive controls, and to ensure corrective actions are implemented		6	2	4
	PC12. share audit findings with manager, reanalyze the preventive measures based on the audit findings, and arrive at additional preventive controls to address the hazards identified		5	2.5	2.5
	PC13. monitor premises of the food processing unit, processing machineries, drainage system to ensure it meets food hygiene standards of the processing unit		5	2	3
	PC14. monitor storage area for raw materials, packaging materials, finished goods to ensure quality standards are met and food		6	2	4

	products are fit for human consumption				
	PC15.ensure chemicals, disinfectants etc are stored separately and `away from food manufacturing / storing / handling areas		5	2	3
	PC16.ensure pest control system is in place in the food processing unit		5	2	3
	PC17.monitor the personnel hygiene and health condition of employees to ensure hygiene system of the organisation are met		5	2	3
	PC18.monitor and ensure clothing, footwear etc complies with the food safety and hygiene standards of the organisation and Government regulations		5	2	3
	PC19.carry out swab test on personnel to check their personal hygiene, share the findings with them, educate on the consequences, and train to follow hygiene methods		6	2	4
	PC20.provide training to employees of all department on personnel hygiene, food safety and hygiene requirements and standards, and the need to follow them		5	2	3
			100	35	65
4. FIC/N7612 (Complete documentation and record keeping related to microbiological analysis)	PC1. document and maintain records on details of raw materials and packaging materials sampled for microbiological analysis like name of raw material, sampling date and time, sampling point, sampling procedure, details of sample like supplier information, batch number, receiving date/ date of manufacture, expiry date, supplier quality document,	100	10	6	4

	condition of the transport vehicle (or) storage area, condition of raw material etc. as per organisation standards			
	PC2. document and maintain records on details of microbiological analysis of raw materials and packaging material like storage of sample until analysis, date of microbiological analysis, method of analysis, microbiological analysis report, results and findings, recommendations etc, as per organisation standards	5	3	2
	PC3. document and maintain records on deviations on microbiological standards of raw materials and packaging materials from organisation standards, and corrective actions taken	5	3	2
	PC4. load the microbiological analysis result and report on raw materials and packaging materials in ERP for future reference	5	3	2
	PC5. verify the documents and track from finished product to microbiological analysis details and report of raw materials and packaging materials, in case of quality concerns and during quality management system audits	5	3	2
	PC6. document and maintain records on details of on-line production sample drawn for microbiological analysis like production stage/sampling area (in the process line), sampling date and time, sampling procedure, details of sample, sample condition, storage of	10	6	4

	sample until analysis, date of microbiological analysis, method of analysis, microbiological analysis report, results and findings, recommendations etc. as per organisation standards			
	PC7. document and maintain records on details of finished product and control sample drawn for microbiological analysis like name of product, sampling date and time, sampling procedure and sampling condition, batch number, date of manufacture, expiry date, label details, sample condition, storage of sample until analysis, date of microbiological analysis, method of analysis, microbiological analysis report, results and findings, recommendations etc. as per organisation standards	10	6	4
	PC8. document and maintain records on details of market complaint samples received for microbiological analysis like name of product, sampling location (in market), type of outlet, display condition, storage condition, sampling methods and sampling condition, method of transfer of sample to lab, physical condition of sample (package and product), date of manufacture, expiry date, storage of sample until analysis, date of microbiological analysis, method of analysis, microbiological analysis report, results and findings, recommendations etc. as per organisation standards	10	6	4
	PC9. document and maintain records of deviations on microbiological standards of on-	5	3	2

	line production sample, finished product, control sample, market complaint sample from organisation standards, and corrective actions taken			
	PC10. load the microbiological analysis result and report on production sample, finished product, control sample, market complaint sample in ERP for future reference	5	3	2
	PC11. verify the documents and track microbiological analysis details and report of finished product to production sample, finished product, control sample, in case of quality concerns and during quality management system audits	5	3	2
	PC12. document and maintain records on audits carried out on housekeeping, processing area, premises etc	6	4	2
	PC13. document and maintain records on food safety system like HACCP implemented in the organisation like critical control points identified, monitoring control points, microbiological analysis on the critical control points, deviations identifies, recommended corrective actions, corrective actions taken, report on the effectiveness of the system etc, as per the organisation standards	7	4	3
	PC14. document and maintain records on food safety hygiene system like tests carried out to assess the personal hygiene of the employees, test findings, recommendations, follow up	7	4	3

	audit reports on compliance to the recommendations				
	PC15. document and maintain records on training provided to the employees on food safety and hygiene system like date of training, attendance, group trained, training assessment, ratings on trainings etc as per organisation standards		5	3	2
			100	60	40
5. FIC/N9001 (Ensure food safety hygiene and sanitation for processing food products)	PC1. comply with food safety and hygiene procedures followed in the organisation	100	5	3	2
	PC2. ensure personal hygiene by use of gloves, hairnets, masks, ear plugs, goggles, shoes, etc.		5	1	4
	PC3. ensure hygienic production of food by inspecting raw materials, ingredients, finished products, etc. for compliance to physical, chemical and microbiological parameters		5	1	4
	PC4. ensure products are packed in appropriate packaging materials, labelled and stored in designated area, free from pests, flies and infestations		10	2	8
	PC5. ensure cleanliness in work area and processing machineries, and monitor to ensure use of processing machineries only for specified purpose		5	2	3
	PC6. use safety equipment such as fire extinguisher, first aid kit and eye-wash station when required		10	2	8
	PC7. follow housekeeping practices by having designated area for materials/tools, and ensure it is being followed		5	2	3

	PC8. follow and ensure following of industry standards like GMP, HACCP and product recall process		10	4	6
	PC9. attend training on hazard management to understand types of hazards such as physical, chemical and biological hazards and measures to control and prevent them		5	2	3
	PC10. identify, document and report problems such as rodents and pests to management		5	2	3
	PC11. conduct workplace checklist audits before and after work to ensure safety and hygiene		5	2	3
	PC12. document and maintain records on raw materials, packaging materials, process and finished products for the credibility and effectiveness of the food safety control system		5	2	3
	PC13. determine the quality of food using criteria such as odour, appearance, taste and best before date, and take immediate measures to prevent spoilage		5	2	3
	PC14. ensure storage of raw materials, finished products, allergens separately to prevent cross-contamination		5	2	3
	PC15. ensure labelling of raw materials and finished products, and storage in designated areas according to safe food practices		5	3	2
	PC16. follow and ensure storage of stock rotation based on FEFO/ FIFO		10	3	7
			100	35	65
6. FIC/N9004 (Manage and lead a team)	PC1. ensure that the team is aware of the schedule and job expectations on a daily basis	100	12	4	8

	PC2. involve the team in regular meetings to communicate information intended for them		12	4	8
	PC3. ensure communication to the team on any changes in policies/ processes by the organization through required verbal/ written mechanisms		12	4	8
	PC4. ensure participation of the team in various engagement initiatives organized by the organization		12	4	8
	PC5. counsel and address issues among the team for any work related issues		12	4	8
	PC6. support the manager in deployment of the team as per production schedule and the organizational norms and guidelines		10	4	6
	PC7. ensure periodic training of the team and support the team by delivering trainings		10	3	7
	PC8. share knowledge of processes, techniques and products with the team to enhance their skill levels		10	4	6
	PC9. provide feedback to the manager pertaining to performance of the team		10	4	6
			100	35	65