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FOOD PROCESSING & PACKAGING TECHNICIAN



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CBT Curriculum

National Vocational Certificate Level 4

Version 1 - November, 2019



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041700841	Analysis Workplace Policy and Procedures	
001100853	Perform Advanced Communication	
061100858	Develop Advance Computer Application Skills	
041300869	Manage Human Resource Services	
041300860	Develop Entrepreneurial Skills	
072100986	Monitor and Control Plant Operations	
072100987	Complete Production Documentation	
072100988	Perform Quality Assurance Measure for Food Products (microbiological, physical and chemical Measurements and Sensory Evaluation)	
List of Tools and Equipment's		

1. INTRODUCTION

This course is aimed at introducing and developing the basic skills and knowledge of Food processing Industry. The trainee is introduced in a step by step manner to the various elements of the discipline and their implications. Ranging from the knowledge and skills required to prepare work environment according to the food processing order, product raw materials and perform packaging. The trainees are encouraged to experiment with a focus on acquiring a wide range of new skills for meeting the new trends in food industry both in processing and packaging. Trainee is also exposed to the commercial market and taught how to deal with clients and their demands in food processing industry.

In order to improve the quality of training and to ensure relevance, National Vocational & Technical Training Commission (NAVTTTC) through Qualification Development Committee (QDC) developed National Competency Standards for Food Processing & Packaging Technician. The learning outcomes provided in this curriculum forms the basis, which is in accordance with the approved National Competency Standards for Food Processing & Packaging Technician. The curriculum can be implemented in a variety of pathways and provides flexible learning opportunities in public and private sector as well as industry based institutes.

1. PURPOSE OF THE TRAINING PROGRAMME

In this training program trainee will learn and acquire specialized knowledge and practical skills required to function as a Food Processing & Packaging Technician in Food Processing and Packaging industry. The specific objectives of developing these qualifications are as under:

- Improve the overall quality of training delivery and setting national benchmarks for training of Food Processing & Packaging Technician in the country.
- Provide flexible pathways and progressions to learner enabling them to receive relevant, up-to-date and current skills in Food Industry.
- Provide basis for competency-based assessment which is recognized and accepted by employers in modern days.
- Establish a standardized and sustainable system of training in consultation with the industry for Food Processing & Packaging Technician in the country.

2. OVERALL OBJECTIVES OF TRAINING COURSE

The primary objective of this two years certificate course in Food Processing & Packaging Technician is to provide the trainees with a comprehensive introduction in food industry. At present there are no skill standards at national level in Food Processing Industry. These standards will develop trainee's abilities, interests and offers outstanding opportunities at different stages of Food Sector. It will encourage individual to learn knowledge and skills in related field of Food Processing. He/she should have the capability to get job in food industry after successful completion of two years (level 1-4) course. Trainee must take part in commercial activities after seeking training in this sector. It will help the trainees to start their own commercial activities as an independent skilled worker in Food Sector or an employee in a commercial setup. He/she will also made aware of the ever changing and evolving demands and challenges of market trends in Food Industry. This course will be opened to all Science matriculate students for enhancing their capabilities in this field.

3. COMPETENCIES TO BE GAINED AFTER COMPLETION OF COURSE

The study of Food Processing & Packaging Technician enables trainee to develop a range of competencies including, creative thinking, research skills, personal management, presentation skills, communication, negotiation skills and technical competence related to their job assignment. Such competencies acquired and enhanced during the course of study results in highly employable pass outs. In addition, the trainee will be able to acquire the following competencies after completing this course:

- Demonstrate and apply basic knowledge and concepts in food processing industry
- Develop creative thinking skills and perceptual awareness in food processing industry
- Develop skills necessary for understanding and applying skills during work
- Explore and discuss unique properties and potential of technical work
- Demonstrate techniques and processes for food processing and packaging
- Communicate and express ideas through a variety of skills and techniques in food industry
- Evaluate and select materials, techniques and processes to process food and packaging the products as per order.
- Demonstrate the safe and responsible use of tools and materials at workplace
- Ability to work in a commercial or apprenticeship setup

4. JOB OPPORTUNITIES AVAILABLE IMMEDIATELY AND IN THE FUTURE

The Pass outs of this course may find job / employment opportunities in the following areas:

- Work as Technician in Food Processing & Packaging Industry (Level-IV)

5. TRAINEE ENTRY LEVEL:

- Middle or equivalent, with level 3.

6. MINIMUM QUALIFICATION OF TRAINER

- 2-5 years of professional experience in food industry after DAE (Food Technology)/ Bachelor's degree (Food Technology).

7. RECOMMENDED TRAINER: TRAINEE RATIO

- The recommended trainer and trainee ratio is 1:25 per class

8. MEDIUM OF INSTRUCTION:

- Urdu, English or Local Language

9. DURATION OF COURSE (TOTAL TIME, THEORY & PRACTICAL)

Module #	Title	Theory (Total Hours)	Practical (Total Hours)	Total Hours	Credit Hours
102200848	Contribute to Work Related Health and Safety (WHS) Initiatives	5	20	25	3
041700841	Analysis Workplace Policy and Procedures	10	20	30	3
001100853	Perform Advanced Communication	10	30	40	4
061100858	Develop Advance Computer Application Skills	10	30	40	4
041300869	Manage Human Resource Services	10	10	20	2
041300860	Develop Entrepreneurial Skills	10	20	30	3
072100986	Monitor and Control Plant Operations	12	48	60	6
072100987	Complete Production Documentation	12	48	60	6
072100988	Perform Quality Assurance Measure for Food Products (microbiological, physical and chemical Measurements and Sensory Evaluation)	24	96	120	12
Total Hours		103	322	425	43

SUMMARY OF MODULES

The proposed curriculum is composed of 8 modules that will be covered in 425 hrs. It is proposed that the course may be delivered in 6 months period. The distribution of contact hours (practical & theory) is given below:

- **Theory (20%) : Practical (80%)**
- **Theory: 103 hours**
- **Practical: 322 hours**

10. SUMMARY – OVERVIEW OF THE CURRICULUM

Module Title	Learning Units	Theory Days/hours	Workplace Days/hours	Timeframe of modules
Module 1: Contribute to Work Related Health and Safety (WHS) Initiatives	LU1.	5	20	25
Module 2: Analysis Workplace Policy and Procedures	LU1.	10	20	30
Module 3: Perform Advanced Communication	LU1.	10	30	40
Module 4: Develop Advance Computer Application Skills	LU1.	10	30	40
Module 5: Manage Human Resource Services	LU1.	10	10	20
Module 6: Develop Entrepreneurial Skills	LU1.	10	20	30
Module 7 Monitor and Control Plant Operations	LU1. Monitor processing machines as per manufacturing order LU2. Ensure all control measures as per manufacturing order LU3. Respond to alarm, emergency	12	48	60

	<p>preparedness and response procedures</p> <p>LU4. Update status of tools/equipment</p>			
<p>Module 8 Complete Production Documentation</p>	<p>LU1. Maintain documentation as per manufacturing order/requirements</p> <p>LU2. Prepare reports and data base</p> <p>LU3. Maintain all records of food processing and packaging</p> <p>Maintain record of equipment and batches</p>	12	48	60
<p>Module 9 Perform Quality Assurance Measure for Food Products (microbiological, physical and chemical Measurements and Sensory Evaluation)</p>	<p>LU1. Apply basic microbiological methods to prove existence of microorganisms</p> <p>LU2. Use measures to reduce microbiological cross-contamination</p> <p>LU3. Perform proper weighing and mixing of ingredients</p> <p>LU4. Conduct basic measurements of different food samples</p> <p>LU5. Perform actual preparation of acid-base titration</p> <p>LU6. Perform sensory evaluation of food products</p> <p>LU7. Perform basic calculation</p>	24	96	120

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Module-7

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Module.7: 072100986 Monitor and Control Plant Operations

Objective: After completing this module, the learner will be able to monitor food processing plant as per the manufacturing order.

Duration:	Total hours	60	Practical	48	Theory	12
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Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials (Tools & Equipment) Required	Learning Place
LU1. Monitor processing machines as per manufacturing order	P1. Ensure availability of all utilities	Describe types of utilities; compressed air, electricity, Hot water, steam	03 hours Theory	PLC, HMI, Voltmeter, thermometer TDS meter	Class Room and workplace
	P2. Ensure all parameters (temperature, Pressure)	Describe the importance of calibration; Accurate results, data analysis, verification etc.	12 hours Practical		
	P3. Check calibration and gauges	Describe Internal Control Plan (ICP); Explain inventory system for equipment; check list, maintenance log sheets	Total hours: 15		
LU2. Ensure all control measures as per manufacturing order	P1. Take readings of all controlling parameters	Elaborate controlling parameters; temperature, air pressure, air filters etc.; Procedure of taking readings by calibrated devices (thermometer, pH meter etc.), Visual inspection”	03 hours Theory 12 hours Practical Total hours: 15	Graph charts, Digital thermometers, pH meters, Swab sticks, Spoons, beakers, knives, Screw, drivers	Class Room and workplace
	P2. Take online samples for quality checks	Explain sampling methods “Random			

		sampling, designated points			
LU3. Respond to alarm, emergency preparedness and response procedures	<p>P1. Make emergency preparedness team</p> <p>P2. Display team members name on different places</p> <p>P3. Response emergency as per industry SOP</p>	<p>Define the role & responsibilities of team members. Team Leader, rescuer, first aider, executers.</p> <p>Elaborate the importance of displaying names; Awareness, minimize the risk, call for emergency Entrance door, Production hall, hazardous places, stores,</p> <p>Explain the procedure for emergency response, stop work, shutdown machines, alert others, use safety equipment, gather at assembling point, use of exit door.</p>	<p>03 hours Theory</p> <p>12 hours Practical</p> <p>Total hours: 15</p>	<p>Boards, siren, graph charts, fire extinguishers, water hose, fire blankets</p>	<p>Class Room and workplace</p>
LU4. Update status of tools/equipment	<p>P1. Ensure implementation of (ICP) Internal Control Plan for all equipment.</p> <p>P2. Ensure equipment inventory system in place</p>	<p>Describe the ICP for equipment; wear and tear records, Maintenance schedule, machine efficiency, cleaning and sanitation.</p> <p>Prepare inventory records; list of equipment and tools, record keeping</p>	<p>03 hours Theory</p> <p>12 hours Practical</p> <p>Total hours: 15</p>	<p>Log sheets, PPEs, log books, Intercoms, computer.</p>	<p>Classroom and workplace</p>

	<p>P3. Ensure usage of equipment as per work instructions</p> <p>P4. Report to senior about any deviation</p>	<p>etc.</p> <p>Define procedure for equipment usage; check for alarms, calibration, damage, clean, use of PPEs</p> <p>Describe reporting methods; direct meeting, telephonic, log book, email.</p>			
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Module-8

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Module.8: 072100987 Complete Production Documentation

Objective: After completing this module, the learner will be able to apply skills and specific knowledge of production documents in accordance with the industry's approved guidelines and procedures.

Duration:	Total hours	60	Practical	48	Theory	12
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Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials (Tools & Equipment) Required	Learning Place
LU1. Maintain documentation as per manufacturing order/requirements	<p>P1. Ensure documentation after completion of food processing of each batch</p> <p>P2. Maintain standard operating procedures and fill all the log books and other related Performa</p> <p>P3. Collect analysis reports and data sheet and handover to the person concerned after proper authentication, if required</p>	<p>Explain job related standard operating procedures; batch, production, final inspection, monitoring, log book records.</p> <p>Describe procedure of maintaining log books and other related forms; time, values, reporting to, approved by, received by</p> <p>Describe process of record keeping. Collect all required information & data, compile on logbook; Describe importance on time communication. Smooth operation, less deviation, on time control, workers efficiency, strong</p>	<p>03 hours Theory</p> <p>12 hours Practical</p> <p>Total hours: 15</p>	Files, stationery, file racks	Class Room and workplace

		relation, team work.			
LU2. Prepare reports and data base	<p>P1. Summarize information in proper format for decision making.</p> <p>P2. Select appropriate record source that is authentic and relevant.</p> <p>P3. Follow instructions of the management for preparing reports and database.</p> <p>P4. Submit report to the management timely to make decisions</p>	<p>Briefly describe the Importance of information for decision making” fact based, ease to implement.</p> <p>Categorize the records; inventory list, batch report, monitoring report, testing report, calibration, down time analysis.</p> <p>As per management instructions.</p> <p>Follow procedure of report submission; By hand, email, through company design software</p>	<p>03 hours Theory</p> <p>12 hours Practical</p> <p>Total hours: 15</p>	Note Book, Logsheets, Logbook, Files	Class Room and workplace
LU3. Maintain all records of food processing and packaging	<p>P1. Perform manual inspections of packaging as per procedure.</p> <p>P2. Assist physical inventory cycle counts accordingly</p> <p>P3. Communicate with upper management</p>	<p>Describe methods of inspection; visual, physical</p> <p>Define methods of communication; verbal, email, telephonic”</p>	<p>03 hours Theory</p> <p>12 hours Practical</p> <p>Total hours: 15</p>	Computer, intercom, files, stationary, file rack	Class Room and workplace
LU4. Maintain record of equipment and batches	<p>P1. Perform manual inspection of equipment’s as per procedure</p> <p>P2. Ensure documentation after completion of each batch</p>	<p>Explain procedure of inspection” check for alarm, maintenance schedule etc.”</p>	<p>03 Hours Theory</p> <p>12 hours Practical</p>	Printer, Computer, Data sheets	Class Room and workplace

	P3. Maintain document after every repair or maintenance work	The importance of repair and maintenance record “machine efficiency, preventive maintenance requirement “	Total hours: 15		
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Module-9

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Module.9: 072100988 Perform Quality Assurance Measure for Food Products (microbiological, physical and chemical Measurements and Sensory Evaluation)

Objective: After completing this module, the learner will be able to check quality raw materials in accordance with the Current Good Manufacturing Practices (CGMP) as well as industry's approved guidelines and procedures.

Duration:	Total hours	120	Practical	96	Theory	24
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Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials (Tools & Equipment) Required	Learning Place
LU1. Apply basic microbiological methods to prove existence of microorganisms	<p>P1. Perform total plate count (TPC)</p> <p>P2. Perform microbial test for detection of environmental hygiene indicators</p> <p>P3. Prepare culture media for different microbial tests</p> <p>P4. Perform Gram's staining test</p>	<p>Define TPC; Enlist steps of TPC.</p> <p>Define microorganisms which are environment hygiene indicators. lactobacillus, streptococcus etc.</p> <p>Explain types of Culture media" agar, broth etc.</p> <p>Describe gram staining.</p>	<p>03 hours Theory</p> <p>14 hours Practical</p> <p>Total hours: 17</p>	<p>Petri dishes, colony counter, microscope, swab sticks</p> <p>Laminar air flow chamber, Distillation unit, Thermometers, Autoclave, Water Bath, Glass Ware, Centrifugal Machine</p>	Class Room and workplace
LU2. Use measures to reduce microbiological cross-contamination	<p>P1. Follow personal hygiene protocols during analysis</p> <p>P2. Disinfect lab and lab equipment's before use</p>	<p>Explain protocols for personal hygiene; use of disinfectants, use of PPEs etc.</p> <p>Describe GLP (Good Lab practices), lab management skills.</p>	<p>03 hours Theory</p> <p>14 hours Practical</p> <p>Total hours: 17</p>	<p>PPEs, hand disinfectors</p>	Class Room and workplace

<p>LU3. Perform proper weighing and mixing of ingredients</p>	<p>P1. Use calibrated scales for ingredients measurement</p> <p>P2. Ensure mixing of dry and wet ingredients separately</p>	<p>Explain the procedure of using calibrated scales; calibration of scale, error check, tear of scale, accurate measurement</p> <p>SOP for mixing; weight dry and wet ingredients separately & use separate containers</p>	<p>03 hours Theory</p> <p>13 hours Practical</p> <p>Total hours: 16</p>	<p>Connectivity meter, weighing scales.</p>	<p>Class Room and workplace</p>
<p>LU4. Conduct basic measurements of different food samples</p>	<p>P1. Perform pH test of food samples</p> <p>P2. Perform acidity test</p> <p>P3. Perform Brix test</p> <p>P4. Perform moisture test</p> <p>P5. Check temperature of samples</p>	<p>Describe the procedure of performing pH test.</p> <p>Describe the procedure of performing acidity test.</p> <p>Describe the procedure of performing Brix test.</p> <p>Describe the procedure of performing moisture test.</p> <p>Describe the procedure to analyze temperature.</p>	<p>03 hours Theory</p> <p>13 hours Practical</p> <p>Total hours: 16</p>	<p>Refractometer, pH meter, moisture analyzer, titration flask.</p>	<p>Class Room and workplace</p>
<p>LU5. Perform actual preparation of acid-base titration</p>	<p>P1. Prepare stock solutions for titration</p> <p>P2. Perform Standardization of stock solution</p> <p>P3. Prepare indicators for titration</p> <p>P4. Perform acid base titration as per procedure</p> <p>P5. Label the solutions with proper information of expiry and</p>	<p>Describe method of solution preparation.</p> <p>Describe the procedure of calculating normality & morality</p> <p>Define procedure of indicator preparation.</p> <p>Describe procedure of A/B titration</p> <p>Explain the GLP procedure for</p>	<p>03 hours Theory</p> <p>13 hours Practical</p> <p>Total hours: 16</p>	<p>Laboratory glassware, Lab scale chemicals</p>	<p>Class Room and workplace</p>

	storage condition	chemical labeling.			
LU6. Perform sensory evaluation of food products	<p>P1. Prepare sample for sensory evaluation as per product label</p> <p>P2. Perform sensory by using basic sensory principles</p> <p>P3. Perform differential testing for sensory evaluation (Hedonic, Triangle, 60/40, Scaling)</p>	<p>Follow the formulation as per recipe.</p> <p>Explain basic senses e.g. smell, taste, feel etc.</p> <p>Define use of hedonic, triangle and 60/40 scaling.</p>	<p>05 hours Theory</p> <p>15 hours Practical</p> <p>Total hours: 20</p>		Class Room and workplace
LU7. Perform basic calculation	<p>P1. Prepare Molar/Normal solutions as per need</p> <p>P2. Prepare percent/parts per million (ppm) solution as per need</p> <p>P3. Calculate strength of different chemicals as per procedure</p>	<p>Define the procedure of calculating normal/molar solution.</p> <p>Define the procedure of calculating ppm solution.</p> <p>Describe the procedure of calculating molecular mass of chemicals.</p>	<p>04 hours Theory</p> <p>14 hours Practical</p> <p>Total hours: 18</p>		Class Room and workplace

SUPPORTIVE NOTES:

Assessment context, Critical aspects, Assessment conditions

Formative assessment: The specification of the expected performance demonstrated by the trainee at the conclusion of the learning experiences in a particular module or course. It is used to assess the necessary knowledge, skills and attitudes, reflecting the performance standard in the relevant industry or competency standards. Formative assessment may include observation, simulation, questioning, presentation/ demonstration and written assessment at the end of each module. The various methods or techniques used to gather evidence of sufficiency and quality in which to make a sound judgment on the competency of a learner

Summative assessment: Assessors need to plan in advance how they will conduct summative assessments covering all modules. There must be a maximum of 6-8 trainees per assessor and if there are two assessors than 12 students can be assessed within a day and 24 students in 2 days. The entire course can be tested in the summative assessment covering all 16 modules. Direct observation is an important approach in assessing the attitude of the students toward work, observance of safety rules and regulations, and how they interact and relate with other trainees and instructor. Training providers need to decide ways to combine modules into a cohesive two-day final assessment programme for each group of 6-8 trainees. Assessment methods may include observation, simulation, questioning, presentation/ demonstration and written assessment. The various methods or techniques used to gather evidence of sufficiency and quality in which to make a sound judgment on the competency student or learner. Training providers must agree the settings for practical assessments in advance.

LIST OF TOOL AND EQUIPMENT

SR.NO	Tools	Required items for 24 candidates
1.	Food processing system with retort, pump, boiler, cooker, steamer, dehydrator, concentrator, separator, heat exchanger and all types, mixers, valves all type, actuators, thermocouples, transducers, flow meters, motors (induction & servo), conductivity meters, level switches, sensors type, angle encoders, VFD (variable flow drives), photocells, nozzles, gauges, Solenoid valves and operation, conveyors, weighing scales	1 Unit each
2.	Chiller, compressors, RO (reverse osmoses), Filters.	1 Unit each
3.	Refrigerator, cooling agents,	1 Unit each
4.	Freezer, incubators	1 Unit each
5.	Stoves	6 No.
6.	Food packaging system with filling and sealing, can seamer, shrink wrapper, stripper, case packer, labeler, cap applicators, case sealer, lifters, card board packer, milers	1 Unit each
7.	Jack lift, fork lifter, hand jack's lifter, material moving lifters, hydraulic lifters, palletizers	1 Unit each
8.	Trolley, liquid jacked tanks	1 Unit each
9.	Wheeler	1 No.
10.	Poly/temperature sealer, shrink machines, cylinders	1 Unit each
11.	Cap sealer	1 No.
12.	Pressure canner	1 No.
13.	Pressure cooker	2 No.
14.	Cap seal	1 No.
15.	Oven	1 No.
16.	Steam-jacketed kettle	1 No.
17.	Smoking trays	6 No.
18.	Meat grinder	1 No.

19.	Stuffer/linker	1 No.
20.	Silent cutter	1 No.
21.	Brix refractometers (0-90° brix)	2 No.
22.	Clinometers	1 No.
23.	Electronic scales (0.1 gm. capacity)	1 No.
24.	Consist meter/viscometer	1 No.
25.	Vacuum pack machine	1 No.
26.	Laboratory scale cabinet drier or forced draft oven	1 No.
27.	Headspace gauge	2 No.
28.	Test equipment – pH meter, centrifuge, moisture meter, color chart/colorimeter, texture meter	2 Unit each
29.	Computer	1 No.
30.	Firefighting equipment , fire extinguisher types and uses, fire hydrants, smoke detector, SCABA (Self containing and birthing apparatus), fire Alarms, manual and automatic emergency haters, safety shower, safety harness,	2 unit each
31.	First aid kit	1 No.
32.	PPE – apron, face mask, gloves (chemical gloves, surgical, electrical & Steam gloves), gum shoes (rubber shoes) chemical suit, face shelled, safety helmet, air protectives, goggles	24 No.
33.	Computer system	1 No.
TOOLS/SUPPLIES		
1.	Weighing scales and balances of various capacities and sensitivities	1 No.
2.	Dietetic scales (1 kg. capacity)	6 No.
3.	Paring knives	6 No.
4.	Peelers	6 No.
5.	Measuring spoons	6 Set

6.	Measuring cups (solid)	6 Set
7.	Measuring cups (liquid)	6 Set
8.	Wrench, screw driver, belts, nuts and bolts, spanners (open, ring combinations) pliers, L kays, star keys, stretched pliers, gas pipe	
9.	Clocks/timer	6 No.
10.	Mixing bowls, stainless steel	6 No.
11.	Hard plastic chopping boards (white, blue, green)	6 unit each
12.	Thermometers of varying temperature range	10 No.
13.	Jar liter	24 No.
14.	Food processor set	2 No.
15.	Wire baskets	3 No.
16.	Casseroles stainless steel	3 No.
17.	Saucepan, stainless steel	6 No.
18.	Spoons, wooden	6 No.
19.	Spoon, basting	6 No.
20.	Paddles, wooden	6 No.
21.	Food tongs	6 No.
22.	Steamer	1 No.
23.	Soaking container	6 No.
24.	Fermented containers	2 No.
25.	Utility trays	6 No.
26.	Colanders, stainless steel	2 No.

PACKAGING MACHINERY

1.	Automatic can opener	1 No.
2.	Can seam saw	1 No.
3.	Can seam counter sink	1 No.
4.	Can seamer	1 No.
5.	Vacuum can sealer	1 No.
6.	Capping machine	1 No.
7.	Crown corking machine	1 No.
8.	Form fill seal machine (a) 3 side sealing (b) Pillow type	1 No.
9.	Cup filling & sealing machine	1 No.
10.	Horizontal packing machine	1 No.
11.	Twist wrap machine	1 No.
12.	Fold wrap machine	1 No.

Sr. No.	Consumable Items	Quantity for 24 candidates
1	NaoH (PELLETS)	3 Kg
2	HNO ₃	3 ltr
3	H ₂ SO ₄	2.5 ltr
4	Ethanol (Absolute)	5 Ltr
5	Phenolphthalein	1 Bottle (100 gm)
6	Burette Set	6 No.
7	Pipette 1ml	10 No.
8	Pipette 5ml	10 No.
9	Pipette 10 ml	10 No.
10	Pipette 10.94 ml	5 No.
11	Auto sucker	10 No.
12	Volumetric flask 100 ml	5 No.
13	Volumetric flask 250 ml	5 No.
14	Volumetric flask 500 ml	5 No.
15	Volumetric flask 1000 ml	5 No.
16	Measuring Cylinder 100 ml	5 No.
17	Measuring Cylinder 500 ml	5 No.
18	Measuring Cylinder 1000 ml	5 No.
19	Reagent Bottles	10 No.
20	Glass Beaker 50 ml	5 No.
21	Glass Beaker 100 ml	5 No.
22	Glass Beaker 250 ml	5 No.
23	Glass Beaker 500 ml	5 No.
24	Pycnometer	5 No.
25	Capillary tube	1 Box
26	Filter paper (90 mm)	2 Box
27	Butyrometer 8 %	5 No.
28	Butyrometer 40 %	5 No.
29	Butyrometer 80 %	5 No.
30	Lactometer	10 No.
31	Rubber stoppers	20 No.
32	China Dish	10 No.
33	Iso amyl alcohol	1 ltr
34	Test tube 20 ml	20 No.
35	Thermometer (0-100 C)	10 No.
36	Plate Count Agar	1 box
37	Violet Red Bile Agar	1 box

38	Potato Dextrose Agar	1 Box
39	Swab Sticks	1 Box
40	S-S Agar	1 Box
41	Inoculating loops	5 No.
42	Spirit lamp	5 No.
43	Hexane	2.5 ltr
44	CMC	1 kg
45	Citric Acid	1 kg
46	Pectin Powder	1 kg
47	Sodium benzoate	100 gm
48	KMS	100 gm
49	Sodium Citrate	100 gm
50	Baking Powder	1 kg
51	Yeast (Sachet)	50 No.
52	Baking Soda	1 kg
COLORS		
53	Caramel Liquid	100 ml
54	Apple Green	100 gm
55	Sunset Yellow	100 gm
56	Apple Red	100 gm
57	Cloudifying Agent	250 ml
58	Lime YELLOW	100 gm
FLAVORS		
59	Apple	250 ml
60	Strawberry	250 ml
61	Mango Chaunsa	250 ml
62	Chocolate	250 ml
63	Vanilla	250 ml
64	Orange	250 ml
65	Pineapple	250 ml
SPICES		
66	Salt	1 kg
67	Red Chili (Powder)	1 kg
68	Black pepper (Powder)	500 gm
69	Mix masala	500 gm
70	Chicken Tikka Masala	5 Box
71	Chicken Tandoori Masala	5 Box
72	Chaat Masala	5 Box
73	Chicken Cubes	2 Box

Grocery/fruits/vegetables		
74	Chicken, Beef, Mutton, Fish	10 kg each
75	Fine Flour	20 kg
76	Sugar	50 kg
77	Cooking Oil	10 ltr
78	Ghee	5 kg
79	Peas	10 kg
80	Lemon	5 kg
81	Tomatoes	10 kg
82	Potatoes	10 kg
83	Green Chili	2 kg
84	Capsicum	2 kg
85	Carrot	10 kg
86	Apple	10 kg
87	Mango	10 kg
88	Orange	10 Dozen
89	Strawberry	10 kg
90	Pineapple	10 kg
91	Cheddar Cheese	10 kg
92	Mozzarella Cheese	10 kg
93	Skimmed Milk Powder	1 Kg
94	Condensed Milk	5 Jar
95	Fresh Milk	20 ltr
96	Empty Metal Can (500 gm)	25 No.
97	Empty Plastic Bottles (750 ml)	50 No
98	Empty Glass Jars (500 gm)	25 No.
99	Plastic Wrapping Sheet	1 Roll
100	Aluminum Foil	2 Roll

