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FOOD PROCESSING & PACKAGING TECHNICIAN



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LEARNER GUIDE

National Vocational Certificate Level 4

Version 1 - November, 2019



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Introduction

Welcome to your Learner's Guide for the *Food Processing & Packaging Technician*. It will help you to complete the programme and to go on to complete further study or go straight into employment.

The *Food Processing & Packaging Technician* programme is to engage young people with a programme of development that will provide them with the knowledge, skills and understanding to start this career in Pakistan. The programme has been developed to address specific issues, such as the national, regional and local cultures, the manpower availability within the country, and meeting and exceeding the needs and expectations of their customers.

The main elements of your learner's guide are:

- **Introduction:**
 - This includes a brief description of your guide and guidelines for you to use it effectively
- **Modules:**
 - The modules form the sections in your learner's guide
- **Learning Units:**
 - Learning Units are the main sections within each module
- **Learning outcomes:**
 - Learning outcomes of each learning units are taken from the curriculum document
- **Learning Elements:**
 - This is the main content of your learner's guide with detail of the knowledge and skills (practical activities, projects, assignments, practices etc.) you will require to achieve learning outcomes stated in the curriculum
 - This section will include examples, photographs and illustrations relating to each learning outcome
- **Summary of modules:**
 - This contains the summary of the modules that make up your learner's guide
- **Frequently asked questions:**
 - These have been added to provide further explanation and clarity on some of the difficult concepts and areas. This further helps you in preparing for your assessment.
- **Multiple choice questions for self-test:**
 - These are provided as an exercise at the end of your learner's guide to help you in preparing for your assessment.

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Module-7

LEARNER GUIDE

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Module 7: 072100986 Monitor and Control Plant Operations

Objective of the module:

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

Duration 60 hours **Theory:** 12 hours **Practical:** 48 hours

| Learning Unit | Learning Outcomes | Learning Elements | Materials Required |
|--|---|---|--|
| LU1: Monitor processing machines as per manufacturing order | <p>P1. Ensure availability of all utilities</p> <p>P2. Ensure all parameters (temperature, Pressure)</p> <p>P3. Check calibration and gauges</p> | <p>Describe types of utilities; compressed air, electricity, Hot water, steam</p> <p>Describe the importance of calibration; Accurate results, data analysis, verification etc.</p> <p>Describe Internal Control Plan (ICP); Explain inventory system for equipment; check list, maintenance log sheets</p> | <p>PLC, HMI, Voltmeter, thermometer TDS meter</p> |
| LU2: Ensure control measures as per manufacturing order | <p>P1. Take readings of all controlling parameters</p> <p>P2. Take online samples for quality checks</p> | <p>Elaborate controlling parameters; temperature, air pressure, air filters etc.; Procedure of taking readings by calibrated devices (thermometer, pH meter etc.), Visual inspection”</p> <p>Explain sampling methods “Random sampling, designated points</p> | <p>Graph charts, Digital thermometers, pH meters, Swab sticks, Spoons, beakers, knives, Screw, drivers</p> |
| LU3: Respond to alarm, emergency preparedness | <p>P1. Make emergency preparedness team</p> | <p>Define the role & responsibilities of team members. Team Leader, rescuer, first aider, executers.</p> | <p>Boards, siren, graph charts, fire extinguishers,</p> |

| Learning Unit | Learning Outcomes | Learning Elements | Materials Required |
|--|--|--|--|
| and response procedures | <p>P2. Display team members name on different places</p> <p>P3. Response emergency as per industry SOP</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>water hose, fire blankets</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>P3. Ensure usage of equipment as per work instructions</p> <p>P4. Report to supervisor about any deviation</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 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> | <p>Log sheets, PPEs, log books, Intercoms, computer.</p> |

LU1:

Monitor processing machines as per manufacturing order
Different Types of Gauges



WTG Series
Water Test Gauge

 Data sheet



LPG Series
Low Pressure Gauge

 Data sheet



LFG Series
Liquid Filled Gauge

 Data sheet



STG Series
Spiral Tube Gauge

 Data sheet



APG Series
Air Pressure Gauge

 Data sheet



TSG Series
Tube Stub Gauge

 Data sheet

<https://i.pinimg.com/originals/e9/da/59/e9da59a9812f36952bb66532dbdf594f.png>

Pressure Gauge Calibration

https://youtu.be/7a_WBr8b0yo

LU2:

Ensure all control measures as per manufacturing order

Components of ICP

<http://pensionmaxima.com/penmaxwp/wp-content/uploads/2015/01/Internal-Control.jpg>

LU3:

Respond to alarm, emergency preparedness and response procedures



<https://www.lundin-petroleum.com/wp-content/uploads/2019/09/emergency-preparedness-eng-495x322.png>

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Module-8

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National Vocational Certificate Level 4

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Module.8: 072100987 Complete Production Documentation

Objective of the module:

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 60 hours **Theory:** 12 hours **Practical:** 48 hours

| Learning Unit | Learning Outcomes | Learning Elements | Materials Required |
|--|---|---|-------------------------------|
| 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 relation, team work.</p> | Files, stationery, file racks |
| LU2: Prepare reports and data base | <p>P1. Summarize information in proper format for decision making.</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> | Note Book |

| Learning Unit | Learning Outcomes | Learning Elements | Materials Required |
|---|---|--|---------------------------|
| | <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>As per management instructions.</p> <p>Follow procedure of report submission; By hand, email, through company design software</p> | |
| <p>LU3: Maintain all records of food processing and packaging</p> | <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>Computer, intercom</p> |
| <p>LU4: Maintain record of equipment and batches</p> | <p>P1. Perform manual inspection of equipment’s as per procedure</p> <p>P2. Ensure documentation after completion of each batch</p> <p>P3. Maintain document after every repair or maintenance work</p> | <p>Explain procedure of inspection” check for alarm, maintenance schedule etc.”</p> <p>The importance of repair and maintenance record “machine efficiency, preventive maintenance requirement “</p> | <p>Printer</p> |

LU1:

Maintain documentation as per manufacturing order/requirements

Logbook

Field / Packing Shed Restroom Cleaning and Service Log

Name of operation:

Please see the food safety plan for overall field sanitation unit service procedures.

| Sanitation Unit #* | Date | Time | Supplies Stocked** | | | Initials |
|--------------------|------|------|--------------------|------|--------------|----------|
| | | | Paper Towels | Soap | Toilet Paper | |
| | | | | | | |
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* Restroom number as identified on field map or packing shed diagram.

** Sanitation supplies are single use towels, toilet paper, hand or anti-bacterial soap, potable water for hand washing. If contracted with sanitation company, attach service/cleaning receipt.

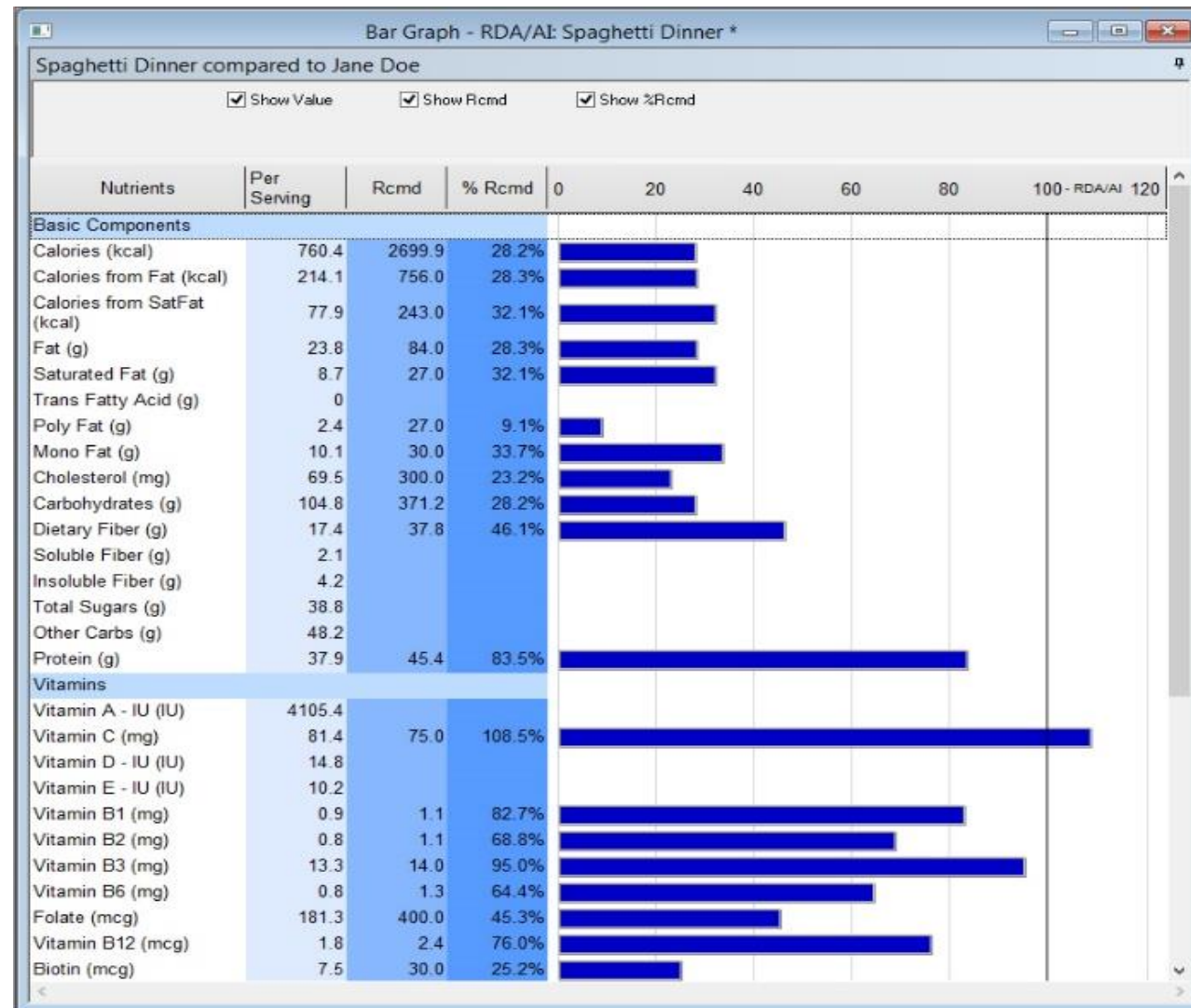
Reviewed by:

Title:

Date:

<http://factsheets.okstate.edu/wp-content/uploads/2017/06/Screen-Shot-2017-06-16-at-9.42.54-AM.png>

LU2:
Prepare reports and data base



<https://www.esha.com/wp-content/uploads/2014/09/Bar-Graph-Report.jpg>

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Module-9

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Module 9: 082100988 Perform Quality Assurance Measure for Food Products (microbiological, physical and chemical Measurements and Sensory Evaluation)

Objective of the module:

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 120 hours **Theory:** 24 hours **Practical:** 96 hours

| Learning Unit | Learning Outcomes | Learning Elements | Materials Required |
|---|---|---|---|
| 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>Petri dishes, colony counter, microscope, swab sticks Laminar air flow chamber, Distillation unit, Thermometers, Auto clave, Water Bath, Glass Ware, Centrifugal Machine</p> |
| 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>PPEs, hand disinfectors</p> |
| LU3 | P1. Use calibrated scales for | Explain the procedure of using calibrated | Connectivity meter, |

| Learning Unit | Learning Outcomes | Learning Elements | Materials Required |
|--|---|--|--|
| Perform proper weighing and mixing of ingredients | <p>ingredients measurement</p> <p>P2. Ensure mixing of dry and wet ingredients separately</p> | <p>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> | weighing scales. |
| LU4: Conduct basic measurements of different food samples | <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> | Refractometer, pH meter, moisture analyzer, titration flask. |
| LU5: Perform actual preparation of acid-base titration | <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 storage condition</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 chemical labeling.</p> | Laboratory glassware, Lab scale chemicals |

| Learning Unit | Learning Outcomes | Learning Elements | Materials Required |
|---|---|---|--------------------|
| LU6: Perform sensory evaluation of food products | P1. Prepare sample for sensory evaluation as per product label P2. Perform sensory by using basic sensory principles P3. Perform differential testing for sensory evaluation (Hedonic, Triangle, 60/40, Scaling) | Follow the formulation as per recipe. Explain basic senses e.g. smell, taste, feel etc. Define use of hedonic, triangle and 60/40 scaling. | |
| LU7: Perform basic calculation | P1. Prepare Molar/Normal solutions as per need P2. Prepare percent/parts per million (ppm) solution as per need P3. Calculate strength of different chemicals as per procedure | Define the procedure of calculating normal/molar solution. Define the procedure of calculating ppm solution. Describe the procedure of calculating molecular mass of chemicals. | |

LU1:

Apply basic microbiological methods to prove existence of microorganisms

Total Plate Count (TPC)

<https://youtu.be/pmRUBYIPMBM>

Air Sampling Technique

<https://youtu.be/s1sKkwWA7zM>

Preparation of Culture Media

https://youtu.be/KHg_PyiQPwk

Gram's Staining Process

<https://youtu.be/OOFJyw0EYBU>

LU2:

Use measures to reduce microbiological cross-contamination

Disinfection vs Sterilization

<https://youtu.be/hT--rx6pG5E>

LU4:

Conduct basic measurements of different food samples

Commonly Used Lab Equipment Demonstration

https://youtu.be/3Fo09_v0Zz8

How to Perform pH Test

https://youtu.be/0TDBBZ4d_c

How to perform acidity test

<https://youtu.be/2QS34b4sWDM>

Refractometer



https://images-na.ssl-images-amazon.com/images/I/710fyUrmsHL._SX425_.jpg

LU5:

Perform actual preparation of acid-base titration

Molar Solution

1. Molar solutions

- **Molarity** is number of moles of a solute that are dissolved per liter of total solution.
- **A 1 M solution contains 1 mole of solute per liter total volume.**

Example:

A 1M solution of H_2SO_4 contains 98.06 g of sulfuric acid in 1 liter of total solution.

"mole" is an expression of amount

"molarity" is an expression of concentration.

<https://image.slidesharecdn.com/foodanalysis-131211042746-phpapp01/95/preparing-diluting-of-solutions-of-different-strengths-safety-measures-while-handling-them-12-638.jpg?cb=1386736218>

Normal Solution

2. Normal Solutions

- **Normality** is defined as the gram Eq.Wt. of the solute per L of the solvent.

1N sol. = 1 EW solute / 1L of sol.

- Conc. Of acids and alkalis are usually expressed in this unit.
- **gram Eq.Wt.** is the M.W divided by the no. of H⁺ or OH⁻ ions released from 1 molecule of the acid or base, respectively in solutions.

Eq. Wt. = MW of the substance / replaceable no. of H⁺ or OH⁻

<https://image.slidesharecdn.com/foodanalysis-131211042746-phpapp01/95/preparing-diluting-of-solutions-of-different-strengths-safety-measures-while-handling-them-15-638.jpg?cb=1386736218>

Molality

Molality

- Moles of solute per kilogram of solvent
- $m = \frac{\text{moles of solute}}{\text{kg of solvent}}$
- A 1.0m (molal) solution of NaCl contains 1.0 moles of NaCl in 1.0 kg of water.

<https://image.slidesharecdn.com/new-chm-151-unit-13-power-points-su13s-140227172226-phpapp02/95/new-chm151unit13powerpointssu13s-50-638.jpg?cb=1393521829>

4. Percent solution

- **Mass percent solutions** are defined based on the grams of solute per 100 grams of solution.

Example: 20 g of sodium chloride in 100 g of solution is a 20% by mass solution.

- **Volume percent solutions** are defined as ml of solute per 100 mL of solution.

Example: 10 mL of ethyl alcohol + 90 ml of H₂O (making approx. 100 mL of solution) is a 10% by volume solution.

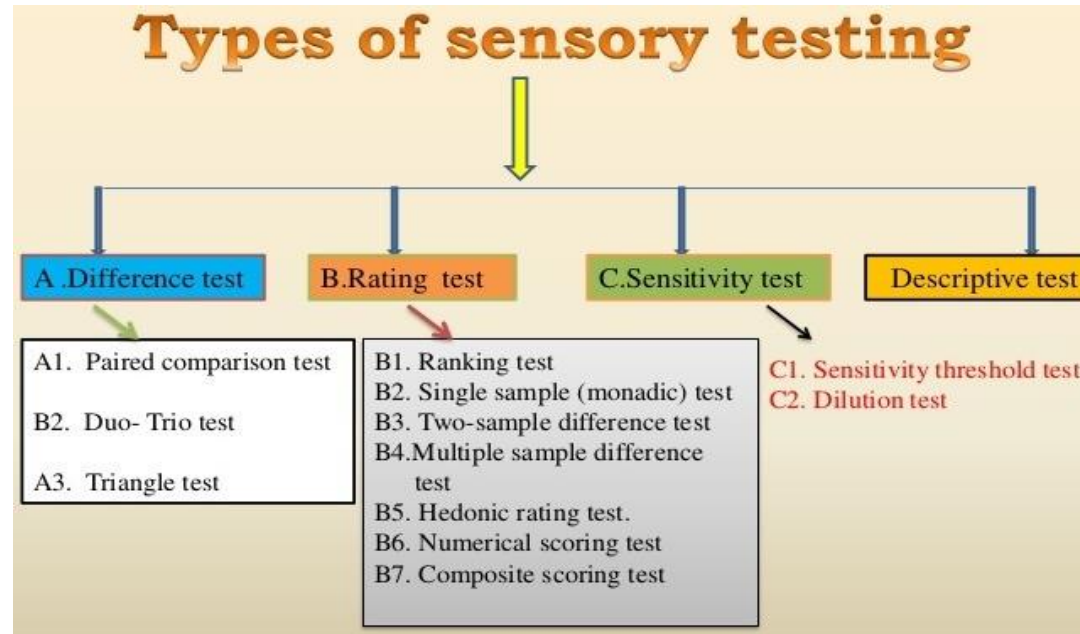
- **Mass-volume percent solutions** are also very common. These solutions are indicated by w/v % & are defined as the grams of solute per 100 mL of solution.

Example: 1 g of phenolphthalein in 100 mL of 95% ethyl alcohol is a 1 w/v % solution.

<https://image.slidesharecdn.com/foodanalysis-131211042746-phpapp01/95/preparing-diluting-of-solutions-of-different-strengths-safetymeasures-while-handling-them-18-638.jpg?cb=1386736218>

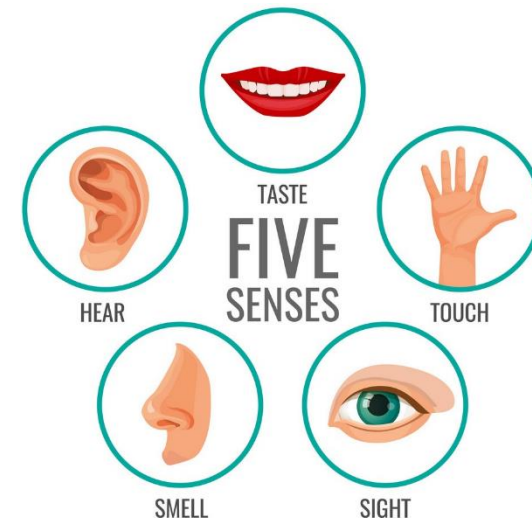
LU6:
Perform sensory evaluation of food products

Types of Sensory Analysis



<https://image.slidesharecdn.com/scorecard-141031091151-conversion-gate01/95/sensory-evaluation-of-food-products-6638.jpg?cb=1414746955>

Senses Used for sensory analysis



<https://www.vectorstock.com/royalty-free-vector/five-senses-of-human-perception-poster-icons-vector-21278503>

Triangle Test for sensory evaluation

Triangle test

Name..... Date.....
Product.....

Two of the samples are identical. Determine the odd samples.

| Set No | code no of samples | code no of odd samples | comment on odd samples |
|--------|--------------------|------------------------|------------------------|
| 1 | _____ | _____ | _____ |
| 2 | _____ | _____ | _____ |
| 3 | _____ | _____ | _____ |
| 4 | _____ | _____ | _____ |

Signature

<https://image.slidesharecdn.com/scorecard-141031091151-conversion-gate01/95/sensory-evaluation-of-food-products-12-638.jpg?cb=1414746955>

Hedonic Scale Rating Test

| Hedonic Rating Test | | | |
|--|--------------------|------------------|-------------|
| Name: | Date: | | |
| Product: | | | |
| <ul style="list-style-type: none">• Taste these samples and checking how much you like or dislike each one• Use the appropriate scale to show your attitude by checking at the point that best describe your feelings about the sample. | | | |
| | code | code | code |
| Like extremely | _____ | _____ | _____ |
| like very much | _____ | _____ | _____ |
| like moderately | _____ | _____ | _____ |
| like slightly | _____ | _____ | _____ |
| like or dislike | _____ | _____ | _____ |
| Dislike slightly | _____ | _____ | _____ |
| Dislike very much | _____ | _____ | _____ |
| Dislike moderately | _____ | _____ | _____ |
| Dislike extremely | _____ | _____ | _____ |
| Reason | | | |
| | | Signature | |

<https://image.slidesharecdn.com/acceptance-preferencetest-160930112600/95/acceptancepreference-test-14-638.jpg?cb=1475234907>

Module summary

| | |
|---|---|
| Course: <i>Food Processing & Packaging Technician (Level IV)</i> | Total Course Duration: 425 Hours |
| Course Overview: | |
| <p>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:</p> <ul style="list-style-type: none"> • 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. | |

| Module | Learning Unit | Duration |
|---|---------------|----------|
| Module 1. Contribute to Work Related Health and Safety (WHS) Initiatives | | 25 |
| Module 2. Analysis Workplace Policy and Procedures | | 30 |
| Module 3. Perform Advanced Communication | | 40 |
| Module 4. Develop Advance Computer | | 40 |

| Module | Learning Unit | Duration |
|--|--|----------|
| Application Skills | | |
| Module 5. Manage Human Resource Services | | 20 |
| Module 6. Develop Entrepreneurial Skills | | 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 preparedness and response procedures LU4. Update status of tools/equipment | 60 |
| Module 8. Complete Production Documentation | LU1. Maintain documentation as per manufacturing order/requirements LU2. Prepare reports and data base LU3. Maintain all records of food processing and packaging LU4. Maintain record of equipment and batches | 60 |
| Module 9. Perform Quality Assurance Measures for Food Products (microbiological, physical and chemical Measurements and Sensory Evaluation) | LU1. Apply basic microbiological methods to prove existence of microorganisms LU2. Use measures to reduce microbiological cross-contamination LU3. Perform proper weighing and mixing of ingredients LU4. Conduct basic measurements of different food samples LU5. Perform actual preparation of acid-base titration LU6. Perform sensory evaluation of food products LU7. Perform basic calculation | 120 |

Frequently Asked Questions

| | |
|---|---|
| <p>1. What is Competency Based Training (CBT) and how is it different from currently offered trainings in institutes?</p> | <p>Competency-based training (CBT) is an approach to vocational education and training that places emphasis on what a person can do in the workplace as a result of completing a program of training. Compared to conventional programs, the competency based training is not primarily content based; it rather focuses on the competence requirement of the envisaged job role. The whole qualification refers to certain industry standard criterion and is modularized in nature rather than being course oriented.</p> |
| <p>2. What is the passing criterion for CBT certificate?</p> | <p>You shall be required to be declared “Competent” in the summative assessment to attain the certificate.</p> |
| <p>3. What are the entry requirements for this course?</p> | <p>The entry requirement for this course is Middle or equivalent.</p> |
| <p>4. How can I progress in my educational career after attaining this certificate?</p> | <p>You shall be eligible to take admission in the National Vocational Certificate in level-5, DAE in Food Processing Technology or equivalent course. In certain case, you may be required to attain an equivalence certificate from The Inter Board Committee of Chairmen (IBCC).</p> |
| <p>5. If I have the experience and skills mentioned in the competency standards, do I still</p> | <p>You can opt to take part in the Recognition of Prior Learning (RPL) program by contacting the relevant training institute and getting assessed by providing</p> |

| | |
|--|--|
| need to attend the course to attain this certificate? | the required evidences. |
| 6. What is the entry requirement for Recognition of Prior Learning program (RPL)? | There is no general entry requirement. The institute shall assess you, identify your competence gaps and offer you courses to cover the gaps; after which you can take up the final assessment. |
| 7. Is there any age restriction for entry in this course or Recognition of Prior Learning program (RPL)? | There are no age restrictions to enter this course or take up the Recognition of Prior Learning program |
| 8. What is the duration of this course? | The duration of the course work is 2 years (4 Levels). |
| 9. What are the class timings? | The classes are normally offered 25 days a month from 08:00am to 01:30pm. These may vary according to the practices of certain institutes. |
| 10. What is equivalence of this certificate with other qualifications? | As per the national vocational qualifications framework, the level-4 certificate is equivalent to Matriculation. The criteria for equivalence and equivalence certificate can be obtained from The Inter Board Committee of Chairmen (IBCC). |
| 11. What is the importance of this certificate in National and International job market? | This certificate is based on the nationally standardized and notified competency standards by National Vocational and Technical Training Commission (NAVTTTC). These standards are also recognized worldwide as all the standards are |

| | |
|---|---|
| | coded using international methodology and are accessible to the employers worldwide through NAVTTC website. |
| 12. Which jobs can I get after attaining this certificate? Are there job for this certificate in public sector as well? | You shall be able to take up jobs in Food Processing industry like, Dairy industry, Beverage industry, baking and confectionery industry, meat and egg industry as well as fruits/vegetable processing industry. |
| 13. What are possible career progressions in industry after attaining this certificate? | You shall be able to progress up to the level of supervisor after attaining sufficient experience, knowledge and skills during the job. Attaining additional relevant qualifications may aid your career advancement to even higher levels. |
| 14. Is this certificate recognized by any competent authority in Pakistan? | This certificate is based on the nationally standardized and notified competency standards by National Vocational and Technical Training Commission (NAVTTC). The official certificates shall be awarded by the relevant certificate awarding body. |
| 15. Is on-the-job training mandatory for this certificate? If yes, what is the duration of on-the-job training? | On-the-job training is not a requirement for final / summative assessment of this certificate. However, taking up on-the-job training after or during the course work may add your chances to get a job afterwards. |
| 16. How much salary can I get on job after attaining this certificate? | The minimum wages announced by the Government of Pakistan in 2019 are PKR 17,500. This may vary in subsequent years and different regions of the country. Progressive employers may pay more than the mentioned amount. |

| | |
|--|--|
| 17. Are there any alternative certificates which I can take up? | There are some short courses offered by some training institutes on this subject. Some institutes may still be offering conventional certificate courses in the field. |
| 18. What is the teaching language of this course? | The teaching language of this course is Urdu and English. |
| 19. What is the examination / assessment system in this program? | Competency based assessments are organized by training institutes during the course which serve the purpose of assessing the progress and preparedness of each student. Final / summative assessments are organized by the relevant qualification awarding bodies at the end of the certificate program. You shall be required to be declared "Competent" in the summative assessment to attain the certificate. |
| 20. Does this certificate enable me to work as freelancer? | You can start your small business of Baking, juice processing, carbonated beverages and confectionery etc. You may need additional skills on entrepreneurship to support your initiative. |

Test Yourself (Multiple Choice Questions)

Module 07

57. Identify the area at which all employees are gathered in case of emergency?
- A. Cafe
 - B. Production hall
 - C. Drain point

- D. Assembly point
58. Which of the following is related to preparation of various reports, log books, files or folders for future record?
- A. Statistics
 - B. Maintenance
 - C. Documentation
 - D. Data analysis
59. Identify the book that does contain record of all activities and schedule to perform work according to target is:
- A. Stock book
 - B. Ledger book
 - C. Requisition book
 - D. Log book
60. What is the fastest method to share reports in an organization?
- A. Registered post
 - B. Courier service
 - C. Email
 - D. Messenger

Module 8

61. What is the method that has been approved to proceed a particular task according to universally recognized practice:
- A. SOP
 - B. CCP
 - C. CCL
 - D. TSS
62. What is the first test performed in quality inspection of processed foods?
- A. Biological
 - B. Brix
 - C. Visual
 - D. Chemical
63. What is the tool that is used to inform about emergency condition at plant?
- A. Telescope
 - B. Telegram
 - C. Siren Alarm
 - D. Telecom

Module 9

64. How Gram positive or negative bacteria are assessed?

- A. Staling
- B. Staining
- C. Inoculating
- D. Culturing

65. What is liquid growth medium for microorganisms?

- A. Peptone agar
- B. Broth
- C. Blood Agar
- D. Starch agar

66. What type of test is performed by Hedonic scale?

- A. Chemical test
- B. Sensorial test
- C. Biological Test
- D. Biochemical test

KEY for MCQ's

| Sr. # | Ans. | Sr. # | Ans. | Sr. # | Ans. | Sr. # | Ans. |
|-------|------|-------|------|-------|------|-------|------|
| 57 | D | 60 | C | 63 | C | 65 | B |
| 58 | C | 61 | A | 64 | B | 66 | B |
| 59 | D | 62 | C | | | | |

