FICSI
Food Industry Capacity and Skill Initiative

Participant Handbook

Sector
Food Processsing

Sub-Sector
Bread and Bakery

Occupation
Processing

Reference ID: **FIC/Q5002, Version 1.0**
NSQF Level 4

Craft Baker

> " Skilling is building a better India.
> If we have to move India towards
> development then Skill Development
> should be our mission. "

Shri Narendra Modi
Prime Minister of India

Skill India
कौशल भारत - कुशल भारत

FICSI
Food Industry Capacity and Skill Initiative

N·S·D·C
National
Skill Development
Corporation
Transforming the skill landscape

Certificate

COMPLIANCE TO
QUALIFICATION PACK – NATIONAL OCCUPATIONAL
STANDARDS

is hereby issued by the

FOOD INDUSTRY CAPACITY AND SKILL INITIATIVE SECTOR SKILL COUNCIL

for

SKILLING CONTENT - PARTICIPANT HANDBOOK

Complying to National Occupational Standards of
Job Role/ Qualification Pack: **'Craft Baker'** QP No. **'FIC/ Q5002 NSQF Level 4'**

Date of Issuance: June 15th, 2016

Valid up to   : June 15th, 2018

*Valid up to the next review date of the Qualification Pack or the
'Valid up to' date mentioned above (whichever is earlier)*

Authorised Signatory
(Food Industry Capacity and Skill Initiative Sector SkillCouncil)

Acknowledgements

About this Book

In India, the food sector has emerged as a high growth and high profit sector. Food and grocery account for about 31% of India's consumption basket. The Indian food and grocery market is the world's sixth largest. A craft baker has huge employment opportunities.

This Participant Handbook is designed to enable theoretical and practical training to become a Craft Baker. The qualification pack of a Craft Baker includes the following National Occupation Standards which have been all covered in this Participant Handbook

1. Prepare and maintain work area and machineries for producing baked products in artisan bakeries and patisseries
2. Prepare for food production of baked food products in artisan bakeries and patisseries
3. Produce baked products in artisan bakeries and patisseries
4. Documentation and recordkeeping
5. Food safety, hygiene and sanitation for processing food products

This Participant Handbook is designed considering the minimum education qualification of a Craft Baker is preferably 8th standard. The Key Learning Objectives and the skills gained by the participant are defined in their respective units. The participant will be able to produce baked products in artisan bakeries and patisseries. He will also be able to follow food safety practices, hygiene and sanitation for processing food products

We hope that this Participant Handbook will be able to provide a sound learning support to our young friends to aspire to build their career in the food processing sector.

Symbols Used

Key Learning Outcomes   Unit Objectives   Steps   Exercise   Summary

Table of Contents

1. Bakery Industry

Unit 1.1 – Introduction

Unit 1.2 – Job Roles and Baker's Responsibilities

Unit 1.3 – Career Development

Unit 1.4 – Employment and Entitlements

Key Learning Outcomes

At the end of this module, you will be able to:

1. Describe the bakery industry

2. State the drivers of the bakery industry

3. Identify the various roles and functions within a bakery

4. State expectations of others from personnel in a bakery industry

5. Identify the skills, attitudes and behaviour required for progression in the industry

6. Explain how one can acquire capabilities required to progress in the industry

7. Identify types of employment

8. State applicable salary and leave

UNIT 1.1 - Introduction

Unit Objectives 🎯

At the end of this unit, you will be able to:

1. Describe the bakery industry
2. State the drivers of the bakery industry

1.1.1 Food Processing Sector and Bakery Establishments

Food processing industry establishments

Bakery is a part of the food processing sector. Food processing is one of the largest sectors in India in terms of production, growth, consumption, and export. India's food processing sector covers fruit and vegetables, spices, meat and poultry, milk and milk products, alcoholic beverages, fisheries, plantation, grain processing and other consumer product groups like confectionery, chocolates and cocoa products, soya-based products, mineral water, high protein foods, etc.

Sub-sector of food processing sector:

Food processing sector is contributing through various sub sectors. Some of the significant sub-sectors are listed below:

Sub-sectors	Products	
Fruits and vegetable processing	Potato wafers, beverages, juices, pulps, slices, frozen products, pickles, etc.	 *Fig. 1.1 Products made of fruits & vegetables*
Meat and poultry processing	Frozen and packed meat, egg powder, etc.	 *Fig. 1.2 Pork*

Grains and cereals	Flour, starch glucose, cornflakes, malted foods, grain based alcohol and beer, etc.	Fig. 1.3 Wheat (flour)
Fisheries and seafood	Fish oil, frozen and canned products	Fig. 1.4 Fish (seafood)
Dairy, milk and milk Products	Ice-cream, butter, ghee, cheese, milk powder, skimmed milk powder, condensed milk, , etc.	Fig. 1.5 Diary products
Bread and bakery	Biscuits, breads, buns, cakes, confectionery, pastries, cookies, etc.	Fig. 1.6 Bread products

Bakery is a traditional activity in India, and occupies an important place in the food processing industry. Bakery product manufacturers can be grouped into three segments of bread, biscuits and cake.

Indian bakery sector is contributed to by the organized, unorganized and small scale local manufactures.

Food processing

Food processing is the method used to convert food ingredients into food products. These can be processed foods, ready-to-eat foods, food additives or food items used to prepare other food products. Food processing also involves food preservation i.e. storing food products for longer periods or packaging them for increasing shelf life and convenience.

Bakery

A bakery (aka baker's shop or bake shop) is an establishment that produces and sells flour-based food baked in an oven such as, bread, cookies, cakes, pastries, and pies. Some retail bakeries are also cafés, serving coffee and tea to customers who wish to consume the baked goods on the premises.

Different types of bakery products

A craft baker bakes different types of products in a bakery. Generally, there are three varieties of baked products - doughs, batters and pastes.

A "leavening agent", also known as a "raising agent" is usually added to these products to make lighter and softer, and a wide variety of products can be made with additions and decorations.

Some of the baked products prepared in a bakery are listed below:

- Breads
- Buns
- Cakes
- Croissants
- Cookies
- Crackers
- Biscuits
- Pizza base
- Pastries
- Other local products (like rusk, matthi etc.)

Production size:

Production size in terms of quantity depends on the nature of the production unity. Bakeries can be divided into the following categories:

- Large production unit
- Medium production unit
- Small production unit

Small production units require less space and budget to establish. These units can be seen almost in all cities across the country. Artisan bakeries, cottage units and very small units come under the small production unit category.

Artisan bakery:

An artisan bakery functions by the thinking and innovation of a baker. Baker uses his/her skills often manually to prepare products. An artisan baker is a craftsperson who is trained to the highest ability to mix, ferment, shape and bake hand crafted items. Artisan bakeries get business from consumers due to the following reasons:

- Consumers prefer specific products prepared in an artisan bakery.

- Artisan bakery products are hand crafted with a specific taste.

- Artisan bakery products are believed to be fresher with higher nutritional value.

- Artisan bakery products are made with natural products and do not have chemicals and preservatives that are often found in industrial bakery products, therefore considered to be healthier.

- Products are prepared by long fermentation process to add specific taste and texture.

Different bakery products

A baker's creativity and innovation is not bound by boundaries or limits. There is an immense variety of products that are made in a bakery on a daily basis.

Here are some of the products that are consumed on a large scale by customers:

Products	Description	Images
Bagels		![Bagel] *Fig. 1.7 Bagel*
Tortillas		![Tortilla] *Fig. 1.8 Tortilla*

Buns		 *Fig. 1.9 Bun*
Doughnuts		 *Fig. 1.10 Doughnut*
Pizzas		 *Fig. 1.11 Pizza*
Muffins		 *Fig. 1.12 Muffin*
Rusks		 *Fig. 1.13 Rusk*

Pastries		 *Fig. 1.14 Pastry*
Brownies		 *Fig. 1.15 Brownie*
Pies		 *Fig. 1.16 Pie*
Pretzels		 *Fig. 1.17 Pretzel*

UNIT 1.2 - Job Roles and Baker's Responsibilities

Unit Objectives 🎯

At the end of this unit, you will be able to:

1. Explain the various roles and functions within a bakery
2. State expectations of others from personnel in a bakery industry

1.2.1 Job Responsibilities

Key responsibilities of craft baker

Craft baker has very specific and important responsibilities in a bakery unit. Following are the responsibilities of a baker:

Procurement, receipt and inventory management

- Order or receive supplies or equipment.
- Ensure safe and proper storage of ingredients, packing material, and finished goods.
- Document and maintain records of production schedule, process, ingredients/raw materials, and finished goods.
- Prepare and maintain inventory or production records.
- Record operational or production data.

Quality checks including health, safety and hygiene

- Check the quality of ingredients to be used for baking.
- Ensure all ingredients are free from dirt, debris, pest, etc.
- Follow safety rules and regulations.
- Prevent accidents at work.
- Follow safety and sanitation related measures.
- Inspect the work area for cleanliness.
- Examine products at different stages of processing.
- Ensure products meet the quality standards set by applicable law and unit/ company.

Productivity and efficiency

- Ensure minimum loss of ingredients while handling the same.
- Ensure optimum use of machinery.
- Ensure the Good Manufacturing Practices (GMP) are followed.

Planning and preparation

- Measure or weigh flour or other ingredients to prepare batters, doughs, fillings, or icings using scales or graduated containers.

- Measure ingredients or substances to be used in production processes.

- Combine measured ingredients in bowls of mixing, blending, or cooking machinery.

- Load materials into production equipment.

- Set oven temperatures and place items into hot ovens for baking.

- Adjust temperature controls of ovens or other heating equipment.

- Adapt the quantity of ingredients to match the amount of items to be baked.

- Determine food production methods.

Production

- Roll, knead, cut, or shape dough to form sweet rolls, pie crusts, tarts, cookies, and other products.

- Shape clay or dough to create products.

- Place dough in pans, molds, or on sheets and bake in production ovens or on grills.

- Set time and speed controls for mixing machines, blending machines, or steam kettles so that ingredients are mixed or cooked according to the instructions.

- Operate cooking, baking, or other food preparation equipment.

- Observe colour of products being baked and adjust oven temperatures, humidity, or conveyor speed accordingly.

- Apply glazes, icings, or other toppings to baked goods, using spatulas or brushes.

- Apply protective or decorative finishes to workpieces or products.

- Decorate baked goods such as cakes or pastries.

Maintenance and troubleshooting

- Ensure machineries are maintained properly.

- Attend to minor repairs of tools and machinery when required.

- Escalate issues to the supervisor, if beyond control.

Innovation

- Develop new recipes for baked goods.

- Adapt recipes based on various factors.

1.2.2 Bakery Roles

Bakery products became part of food habit of large population in the country. Bakery products are available from small roadside tea stalls to big hotels and restaurants. Many well-established hotels have their own bakery unit to prepare fresh products. Huge demand of quality products opens avenues for craft bakers to work as per his/ her wish, and establish as a skilled baker.

They also have an exclusive opportunity of pursuing a careers in other functions in case they are able to skill themselves for it, and show the right attitude and aptitude. In order to establish oneself as a successful craft baker, it is very important to understand the various roles and functions in a bakery setup.

Pastry Chef or Pâtissier: A pastry chef's role is not only limited to making pastries, but he/ she is in charge of the dessert menu. He/ she does all the necessary preparation of various desserts. Many pastry chefs also perform administrative duties such as preparing budgets and ordering supplies for pastry making.

Baker: A baker is responsible for making a wide range of breads, pastries and other baked goods. Becoming a baker requires great amount of training as this is a highly skilled job. A baker should be the master in using a large number of tools for producing quality baked items. In some places, a baker is also called *Boulanger*, and is responsible for all baked items, like bread rolls, breads, croissants, brioches, etc.

Glacier: He/ she is the assistant to the pastry chef, responsible for making various kinds of ices such as, bombes, biscuits, glaces and many varieties of ice cream.

Food Service Managers: Food service managers are responsible for organizing, managing andcoordinating the daily functions of the department. Food service managers perform duties, like scheduling, hiring, training, maintaining inventory, ordering and inspecting work stations.

Cake Decorator: A cake decorator works at a bakery, grocery store or specialty cake shop. He/ she decorates cakes using a variety of tools, materials and food items. Cake decorators prepare icings, apply toppings and decorate cakes by writing customised messages.

Bakery Technologist: A bakery technologist is responsible for developing, creating, launching and implementing new products. He/ she is also responsible for commercialising the new and existing products. They manage and analyse R&D projects.

Bakery Sanitation Manager: They are responsible for general sanitation of the plant, looking after all on-the-job activities, product safety, legality, quality, etc.

Other jobs/ roles in the bakery industry are:

- Owner/ entrepreneur
- Production manager
- Sales and marketing manager and executive
- Quality control
- Food safety and hygiene
- Maintenance
- Research and development
- Lab tester
- Counter executive and cashier

Career Path

SUB SECTOR	OCCUPATION	NSQF LEVEL 4	NSQF LEVEL 5	NSQF LEVEL 6	NSQF LEVEL 7

BREAD AND BAKERY

Procurement — Purchase assistant

QA — Assistant Lab Technician → QA manager / Food regulatory compliance officer ; Food Microbiologist

Processing — Plant biscuit production specialist, Baking technician, Craft Baker, Mixing technician → Processed food entrepreneur ; Plant Baker → Production manager

Packaging — Packaging Technician

UNIT 1.3 - Career Development

Unit Objectives 🎯

At the end of this unit, you will be able to:

1. List the skills, attitude and behavior required for progression in the industry

2. State how one can acquire capabilities required to progress in the industry

1.3.1 Career and Professional Development

Hiring and recruitment

Each job in an organisation requires people who are capable of doing that job. When organizations hire for jobs, which maybe done from outside the organization (new hire) or within the organization (horizontal and vertical job promotions or movements), they do so by evaluating the job requirements against the capabilities of the person in question (worker).

Organisations often evaluate a person's capabilities in terms of knowledge, skills and attitude that a person possesses in relation to the job required to be performed after recruitment.
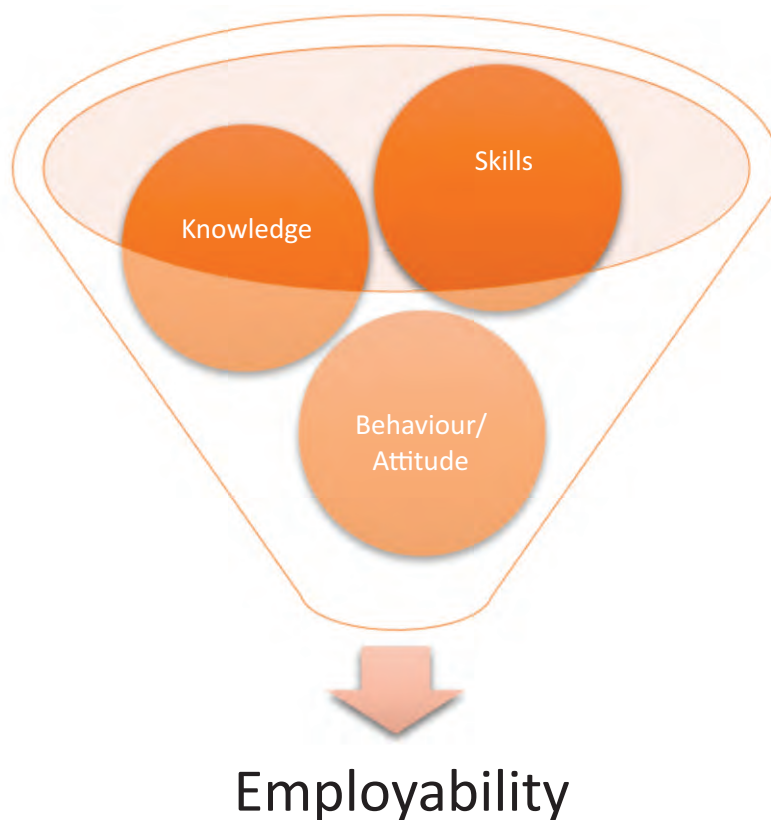
Fig. 1.18 Career and professional development

Attitude: This defines a person's disposition for hard work, helpful nature, initiative, discipline, following instructions, paying attention to detail, etc. Indicators of a good attitude are punctuality, politeness in interactions, being helpful and respectful towards others, completing tasks diligently, meeting deadlines, etc.

Knowledge: This refers to knowledge of the field of work, the organisation, the industry, etc.

Skills: This refers to the person's ability of carrying out tasks on a particular level of expertise, and achieve the desired results.

Promotion and career growth:

Workers are usually evaluated on their performance by their supervisors and managers. The evaluation in many organisations is called performance appraisal, which takes a view of the past performance of employees, and supports decisions regarding:

- Employees' training needs
- Employees' performance incentives
- Development of common understanding of employees' performance, and providing feedback

Candidates who develop and demonstrate capabilities to undertake higher responsibilities usually get noticed and may get considered for promotion however, this depends on the availability of job positions in an organisation.

Most professionals aim at growth over career. This growth usually entails taking on an increased scope of responsibilities and jobs that are higher in profile, status and remuneration.

Training and development

1. All professionals need greater amount of learning that translates into better performance for growth

2. Learning is usually both practical and knowledge oriented. Therefore, every professional must develop/ enhance his/ her knowledge for climbing the career ladder.

3. Knowledge, skills and attitude can be developed through a range of methodologies:

    - Education or professional qualifications
    - Training by employers
    - On-the-job experience
    - Informal learning from peers, seniors and others
    - Self-study and practice

Lifelong learning is very important for a successful and sustainable career. There are many craft bakers who normally get comfortable with their current level of performance, and stop learning. This may result in unemployment after a certain period of time or getting stuck in the same job role for long.

Classroom learning

On-the-job training

Formal qualification

Self learning

Fig. 1.19 Different types of learning

Performance review and development plans at work

Each organisation has a system of performance review of employees, which is aimed at identifying strengths and areas of improvement for performance enhancement in future. This is beneficial for both the employee and the organisation.

In addition to formal reviews, an employee must seek informal feedback on his/ her improve knowledge, skills and attitude.

A personal development plan should be prepared to identify areas of development, and have a structured approach to it. If an employee is unable to do so, he/ she must seek guidance from seniors and colleagues. One must track progress on the plan, and constantly seek feedback on the progress made from peers and supervisors.

Tips to remember for personal development:

- Organise work and have the confidence to ask for guidance.
- Participate earnestly in performance reviews and training.
- Act on feedback related to personal performance.
- Use feedback from customers to improve customer service skills in line with the brand/ organisational standards.
- Use technology responsibly as per organisational requirements.
- Keep a track of the developments in the sector and of the specific job role.
- Develop skills and techniques to improve work.
- Agree on a development plan with the relevant person.

Barriers to learning

While professionals recognise the importance of learning, they also realise they have to overcome the barriers to learning for improved performance.

Barriers to learning are factors because of which one can be disinclined or disinterested to learn.

These include:

- Lack of awareness of importance of learning.

- Lack of awareness of avenues to learning.

- Preferring restricted avenues of learning, and ignoring other opportunities. For e.g., people only want formal learning as opposed to on-the-job learning or peer learning or vice versa.

- Lack of immediate benefit of learning. For e.g., sometime people want learning to bring them immediate benefits such as, promotions or monetary benefits.

- Believing that one is too busy to take out time to learn.

- Unable to draw plan for learning.

- Getting carried away by peers who are not interested in learning or distract and discourage them from learning.

Fig. 1.20 Barriers to learning

UNIT 1.4 - Employment and Entitlements

Unit Objectives 🎯

At the end of this unit, you will be able to:

1. Identify types of employment

2. Explain applicable salary and leave

1.4.1 Employment

Nature of employment and work shifts

An organisation offers employment based on work performance needs within the guidelines of financial and regulatory framework of operation. Similarly, individuals may take on employment in various forms based on their convenience, needs, constraints and opportunities.

Types of employment

Contractual employment: A contractual employment is where the employer signs a contract with the employee, and defines terms and conditions of employment therein, which are usually different from regular/ permanent employees.

An employer may offer these as workload fluctuates and the worker may be needed only for a limited period. Sometimes, such offers are made to save costs, meet compliance requirements, etc. Contract workers can help to meet work needs of the organization without increasing staff numbers and incurring employment expenses such as, employee insurance, provident fund, pension, vacation pay, and other employee benefits. The nature of such contracts varies from organisation to organisation, and must be evaluated accordingly.

Salaried/ permanent employment: Permanent or regular employees or directly employed persons are paid directly by an employer. In addition to wages, employees receive benefits, like subsidized health care, provident fund (based on eligibility), paid vacations, holidays, sick leave or contribution to a retirement plan. They may be eligible to join a union, and may enjoy both social and financial benefits of their employment.

Part-time employment: This may be permanent or contractual, but usually involves a person being employed for a few hours a day or a few days in a week, month or year. An employee does not work full working hours over the year in this form of employment. This is usually offered by employers due to seasonal nature of work or limited duration of work. It suits employees who do not want or are unable to work full time due to other commitments or responsibilities during the rest of the day or year. The benefits may be packaged as per the contract terms of employment.

Full-time employment: Full-time employment is employment in which a person works a minimum number of hours defined as such by his/ her employer, which is usually between 8-9 hours a day in an unbroken shift and 13 continuous hours of a broken shift in a day. Full-time employment often comes with benefits that are not typically offered to part-time, temporary or flexible workers such as, annual leave, sick leave, and health insurance.

Internship: These are work arrangements similar to apprenticeships where an employee may work on paid or unpaid terms with the objective of learning the job or demonstrating their suitability for it. The employer gets cheaper manpower, and can use the opportunity to evaluate the 'intern' for suitability of employment. This arrangement is usually for a limited time and without any additional benefits that are given to a permanent/ salaried employee.

Apprenticeship: This is a formal training arrangement between the trainee and the employer subsidised in cost by the government where the employer offers on-the-job training opportunities to trainees in a particular trade. The duration may vary though usually is between 1-2 years. The government provides costs reimbursements to the employer during this time and the employer pays the 'apprentice' a stipend (instead of a salary). The employer has no obligation to hire the apprentice after the completion of training although there are incentives from the government to do the same. Also, an apprentice gets a government recognized certificate for the training acquired.

1.4.2 Salary and Entitlements

Some key rewards and benefits

Salary and wages: The amount paid for work as per contract with an employer. Wages are usually paid daily or weekly, whereas salary is paid on a monthly basis. These are paid in arrears i.e. at the end of the work period (day, week or month).

Tax: Income tax is what the government charges to people and organisations who earn an income. An income is chargeable only above a certain level for benefitting people earning a low income. Some employers deduct taxes while others leave it for employees to pay their own taxes.

Employers usually deduct TDS (Tax Deducted at Source) for income earned by the employee, and provide Form 16 to employees as an evidence of tax deducted and deposited with the government.

Some components of the salary and benefits are fully taxable while others may be exempt up to a certain level as prescribed by the government. The government announces changes in tax slabs and rates from time to time.

Fig. 1.21 Salary and wages paid in cash

Fig. 1.22 Income Tax Calculation

Salary components

    1. Basic salary: This is the basic amount given by an employer for the work performed. This usually covers the entitled holidays, leave and weekly off. Any unauthorised and unentitled day off is deducted by the employer.

2. HRA (House Rent Allowance): Most employees receive HRA as part of their salary. The intention is to meet cost of a rented accommodation that one may be living in. In case one pays rent, a portion of the HRA may be exempt from tax. If one does not live in a rented house, the entire amount will be taxed as part of the salary each month at an applicable tax rate.

3. Gross pay: The sum total of all payments under salaries before making any deductions of provident fund (PF) and tax.

4. Net pay: Gross payless deductions (tax and PF).

5.Provident fund (PF): Provident fund contribution or EPF has two components – the employer's contribution and employee's contribution. This is usually 12 per cent of the basic salary. However, this contribution is not paid out. It is directly deposited in the PF account of an employee, and is paid after retirement or resignation of an employee. The employee's contribution to PF is deducted from the monthly salary and deposited in the PF account.

Employers with more than 20 employees are allowed to deduct provident fund as per the current guidelines (2016)

In addition to the salary components, an employer may offer various other allowances to employees:

1. **Retirement benefits:** This includes pension plans, gratuity, etc.

2. **Leave travel allowance:** Salaried employees of companies which offer Leave Travel Allowance (LTA) can avail tax exemption for a trip within India under Leave Travel Allowance. The exemption is only for shortest distance on a trip. This allowance can only be claimed for a trip taken with your spouse, children and parents, but not with other relatives.

3. **Medical allowance:** This is a fixed pay provided by an employer every month, which is fully taxable. Employees can claim a tax benefit of up to Rs 15,000 under medical reimbursement (payments for bills or supporting documents) under current norms (2016).

4. **Conveyance allowance:** Conveyance allowance is given to employees to meet travel expenses from their residence to work. This is tax exempt up to a certain limit as announced by the government. This may not be provided if the employer is providing for paid transportation to and fro the workplace.

5. **Incentives or bonuses:** This is usually given to employees based on their performance in a particular period of time. This may be as per pre-defined amounts and scales or ad hoc bonuses at the discretion of an employer. These are fully taxable.

6. **Paid time off/ leave encashment:** A common employee benefit programme in India is paid time off/ leave encashment. Many employers in India have a leave policy where they either allow employees to carry forward their untaken leave to the next year or get money in lieu of the unclaimed leave. This is paid to employees at the end of the year.

7. Other allowances include **special allowance/ city compensatory allowance, telephone allowance, medical insurance, etc.** These may or may not be offered by all employers.

An employer is not bound by law to offer all benefits. Employers can choose the suite of benefits they want to offer employees.

Other entitlements of an employee include:

Pay slip: A pay slip is a document/ record issued by an employer to an employee which shows the earned money and the amount of tax or insurance etc. deducted. Employees are entitled to get pay slips from their employers and this can also be used as proof of employment.

Appointment letter: An appointment letter is a legally binding document that confirms that an organisation has offered a certain position to a person. The appointment letter is signed by both parties to agree to the terms and conditions of employment.

Leaves: Employees across all industries in India are entitled to a certain number of leaves per year aside from holidays and days off. The number and type of leave depends on the industry, employer and state as per the Factories Act and State's Shop and Establishment Act. Every state has different leave entitlement and leave policies on which the leave policy of a company is based.

In India, three types of leaves are generally followed namely earned leave, sick leave and casual leave. An employee can avail these without loss of pay.

Fig. 1.23 Casual leave

Casual leave is provided to take care of urgent and unseen matters in the family. For example, call from an employee's child's school.

Fig. 1.24 Sick leave

Sick leave is provided in case employee falls sick.

Fig. 1.25 Earned leave

Privilege leave or earned leave is availed for planned long leaves for the purpose of travel, vacation, exams, etc.

Summary

A. Food processing industry establishments

Bakery is a part of the food processing sector. Food processing is one of the largest sectors in India in terms of production, growth, consumption, and export. India's food processing sector covers fruit andvegetables, spices, meat and poultry, milk and milk products, alcoholic beverages, fisheries, plantation, grain processing and other consumer product groups like confectionery, chocolates and cocoa products, soya-based products, mineral water, high protein foods, etc.

B. Different types of bakery products

Breads	Crackers
Buns	Biscuits
Cakes	Pizza base
Croissants	Pastries
Cookies	Other local products (like rusk, matthi, etc.)

C. Key responsibilities of craft baker

- Procurement, receipt and inventory management
- Quality checks including health, safety and hygiene
- Productivity and efficiency
- Planning and Preparation
- Production
- Maintenance and troubleshooting
- Innovation

D. Various roles in a bakery

Pastry chef or Pâtissier	Production manager
Baker	Sales and marketing manager and Executive
Glacier	Quality control
Food service managers	Food safety and hygiene
Cake decorator	Maintenance
Bakery technologist	Research and development
Bakery sanitation manager	Counter executive and cashier

Summary

E. Tips to remember for personal development

- Organise work and have the confidence to ask for guidance.

- Participate earnestly in performance reviews and training.

- Act on feedback related to personal performance.

- Use feedback from customers to improve customer service skills in line with the brand/ organisational standards.

- Use technology responsibly as per organisational requirements.

- Keep a track of the developments in the sector and of the specific job role.

- Develop skills and techniques to improve work.

- Agree on a development plan with the relevant person.

F. Barriers to learning

- Lack of awareness of importance of learning.

- Lack of awareness of avenues to learning.

- Preferring restricted avenues of learning, and ignoring other opportunities. For e.g., people only want formal learning as opposed to on-the-job learning or peer learning or vice versa.

- Lack of immediate benefit of learning. For e.g., sometime people want learning to bring them immediate benefits such as, promotions or monetary benefits.

- Believing that one is too busy to take out time to learn.

- Unable to draw plan for learning.

- Getting carried away by peers who are not interested in learning or distract and discourage them from learning.

G. Types of employment

Contractual employment	Full-time employment
Salaried/ permanent employment	Internship
Part-time employment	Apprenticeship

H. Salary components

- Basic salary

- HRA (House Rent Allowance)

- Gross pay

- Net pay

Exercise

Q1. Name the sub-sectors in which the below listed products are manufactured.

Sub-sectors	Products
	Potato wafers, beverages, juices, pulps, slices, frozen products, pickles, etc.
	Frozen and packed meat, egg powder, etc.
	Flour, starch glucose, cornflakes, malted foods, grain based alcohol and beer, etc.
	Fish oil, frozen and canned products
	Ice cream, butter, ghee, cheese, milk powder, skimmed milk powder, condensed milk, etc.
	Biscuits, breads, buns, cakes, confectionery, pastries, cookies, etc.

Q2. Mention the description of the following bakery products:

Products	Description
Pizzas	
Buns	
Tortillas	
Doughnuts	
Muffins	
Rusks	

Exercise

Q3. List any two functions for the categories given below.

Category	Function 1	Function 2
Procurement, receipt and inventory management		
Quality checks including health, safety and hygiene		
Productivity and efficiency		
Planning and Preparation		
Production		
Maintenance and troubleshooting		
Innovation		

Q4. Match the following:

1	Pastry Chef or Pâtissier	Responsible for organizing, managing and coordinating daily functions	☐
2	Baker	Decorates cakes	☐
3	Glacier	Manages and analyses R&D projects	☐
4	Food Service Managers	Responsible for general sanitation	☐
5	Cake Decorator	Responsible for making various kinds of ices	☐
6	Bakery Technologist	Is also called Boulanger	☐
7	Bakery Sanitation Manager	Is in charge of the dessert menu	☐

Exercise

Q5. Fill in the blanks.

1. _____ is a person's disposition for hard work and helpful nature.

2. Evaluation of an employee's performance is called _____.

3. Knowledge, skills and attitude can be developed through these two methodologies- _____ and _____.

4. Barriers to learning are factors because of which one can be _____ or _____ to learn.

Q6. Name the type of employment according to the description given below:

1. This may be permanent or contractual, but usually involves a person being employed for a few hours a day or a few days in a week, month or year. _____

2. The employer signs a contract with the employee, and defines terms and conditions of employment therein. _____

3. This is a formal training arrangement between the trainee and the employer subsidised in cost by the government. _____

4. Employees may be eligible to join a union, and may enjoy both social and financial benefits of their employment. _____

Q7. Name the three types of leave.

Exercise

Q8. Indicate whether the below given statements are true or false.

1. The untaken leaves can only be carried forward. _____

2. Employees have to cover breakfast and dinner or lunch and dinner service in a broken/ brake shift. _____

3. Only the employee's contribution to PF is deposited to the PF account. _____

4. All employers are bound by law to offer all benefits to employees. _____

2. Basic Mathematics for Craft Baker

Unit 2.1 – Basic Mathematics

Unit 2.2 – Baker's Percentage

Unit 2.3 – Baker's Units

Key Learning Outcomes 💡

At the end of this module, you will be able to:

1. Perform basic math operations useful in a baker's profession

2. Analyze baker's percentage

3. Calculate baker's percentage

4. Convert baker's units and carry out measurements using various units

UNIT 2.1 - Basic Mathematics

Unit Objectives

At the end of this unit, you will be able to:

1. Explain basic math operations useful in a baker's profession
2. Perform basic operations of maths

2.1.1 Basic Mathematics for Craft Baker

Craft bakers use formula to prepare baker products. All bakery products' quality depends on the proportion of ingredients. Craft baker should have the basic knowledge of math to perform his/ her task perfectly. He/ she should know the skill to calculate ingredients in right proportions. Math related to bakery is known as baker's math.

Baker's math is a method of breaking down ingredients into proportions so that these can be scaled up and down as needed. A baker, once proficient with the proportions can add/ remove ingredients to make new recipes. or is contributing through various sub sectors. Some of the significant sub-sectors are listed below

2.1.2 Baker's Addition and Subtraction

A baker needs to understand how to add and subtract ingredients as per the need. Addition and subtraction of ingredients follow the rule of adding and subtracting numbers, like in mathematics .

Addition is one of the four basic operations of arithmetic. It is the sum of the total quantities/ numbers. Addition is signified by the symbol (+).

Subtraction is another basic arithmetic operation that represents operation of removing objects from a collection. It is signified by the symbol (-).

Example:

Addition (+)		
	Ingredient	**Quantity**
	Sugar	100 gram
	Solid milk	20 gram
	Flour	250 gram
	Added quantity	370 gram

Subtraction (-)		
	Ingredient	**Quantity**
	Flour	500 gram
	Flour	325 gram
	Subtracted quantity	175 gram

Note: *Baker can use addition and subtraction skills to use ingredients in proper quantity*.

2.1.3 Baker's Ratio and Proportion

When a baker prepares recipes to bake products, he/ she uses ratio and proportion to get his/her ingredients in the right quantity.

Ratio

Ratio is a relationship between two numbers indicating how many times the first number contains the second.

• The ratio of two quantities a and b is in the same units.

• If we represent a and b as a/b , it will be called fraction.

• This can also be represented as $a:b.$

• *a:b is called ratio.*

In the ratio $a:b$, we call a as the first term or **Numerator** and b, the second term or **Denominator.**

Example:

A fruit bowl contains eight plums and six oranges, then the ratio of plums to oranges is eight to six i.e. 8:6.

The ratio 8:6 can also be represented as 8/6 where 8 is numerator and 6 is denominator.

Proportion

Proportion is the ratio of one quantity to another. It is the statement of equality between two ratios.

The equality of two ratios is called proportion.

If a:b = c:d, we write a:b **::** c : d. This means a, b, c, d are in proportion.

Here a and d are called **extremes**, while b and c are called **mean terms**.

Product of means = Product of extremes.

a:b **::** c:d

$(b \times c) = (a \times d)$

Ratio and proportion: relevance in Baking

In any given recipe, the ingredients have a relationship to each other. If a recipe calls for 2 eggs and 4 cups of flour, the relationship of eggs to cups is 2 to 4. It can be represented as either 2:4 or 2/4. Altering the ratio may be not give the desired results.

Also, all recipes are meant to serve a certain number of people. A baker may have the recipe for 1 dozen cookies, but what if he/she wants to bake 3 or 4 dozen cookies? It is very important to understand how to increase or decrease the quantity without spoiling the ratio of the ingredients. This is where the relevance of proportion lies in baking. While two equal ratios give the desired result, two unequal ratios, on the other hand will ruin the recipe.

Some of the advantages of using rationing in baking are:

- No need of working with scales.
- Recipes can be scaled up and down.
- Ingredients can be easily substituted.

Example:

A baker knows the recipe to bake a cake for 8 persons. This will require 4 cups of flour. He/she wants to know how much flour will be used for 40 persons.

Now, the above text can also be represented as:

4 Cups = 8 Persons

? = 40 Persons

This can be calculated as:

4/? = 8/40

Or

8 x ? = 4 x 40

? = 4 x 40/8

? = 160/8

Answer = 20 cups of flour needed to bake cake for 40 persons.

Fig. 2.1 Mathematical calculation (ratio & proportion)

UNIT 2.2 - Baker's Percentage

Unit Objectives ⊚

At the end of this unit, you will be able to:

1. Understand baker's percentage

2. Explain and calculate baker's percentage

2.2.1 Baker's Percentage

Baker's percentage is a formula which applies to calculate the requirement of different ingredients to prepare any product in a bakery. It is a baker's notation method indicating the flour relative proportion of an ingredient when making breads, cakes, pastries, etc. Every baker must be familiar with baker's percentage.

Percentage is denoted by (%) sign.

Important Points About Baker's Percentage

- Baker's percentage is not the same as true percentage.

- In true percentage, the total of the ingredients always adds up to 100%.

- In baker's percentage, weight of the flour in the formula equals 100%.

- All the other ingredients are calculated in proportion to the weight of the flour.

2.2.2 Baker's Percentage Formula

Ingredient Percentage = Ingredient Weight/ Total Flour x 100

Baker's percentage is a formula which applies to calculate requirement of different ingredients to prepare any product in a bakery. It is a baker's notation method indicating the flour relative proportion of an ingredient when making breads, cakes, pastries, etc. The baker's percentage is very important to know for every craft baker. Percentage denoted by (%) sign.

Use of the Formula:

Here is a recipe for making simple bread with the following ingredients:

	Ingredient	Quantity
	Flour	500 gram
	Water	80 gram
	Dry Yeast	2 gram
	Salt	5 gram

All the ingredients are in grams. The baker's percentage formula will be applied for the above recipe.

The total amount of flour in the recipe is 250 gram. Consider each ingredient one by one. How much of each ingredient is relative to 250 gram of flour?

Formula is:

Ingredient Percentage (%)   =   Ingredient Weight/ Total Flour x 100

Take flour first, and put value in the formula

	Ingredient	Formula	Percentage
	Flour	250/250 x 100	100%
	Water	80/250 x 100	32%
	Yeast	2/250 x 100	8%
	Salt	5/250 x 100	2%

By using the baker's percentage formula, a baker can calculate percentage of ingredients used in a recipe of any product.

Baker's Percentage for Water

Baker's percentage for water or other liquid ingredients, like milk, alcohol, juice, etc. is known as 'hydration'. It indicates the stickiness of the dough and crumb of the bread. Hydration is an important factor in mixing and the final appearance of a product. This can help a baker predict the texture of the crumb.

However, it is important to note that different types of flour absorb water differently because of their gluten protein percent. A baker is required to adjust the dough consistency accordingly.

The hydration percent of dough can also be calculated as per the baker's percentage.

Example:

	Ingredient	Percentage
	Flour	100
	Water	50
	Yeast	3
	Salt	2

The hydration of the dough is 50% since that's the percentage of water in the formula.

Hydration levels range from lower to higher, such as:

Lower hydration level ranges from 50-57%. This is also known as *stiff*.

Medium hydration level ranges from 58-65%. This is also known as *standard*.

Higher hydration level ranges over 65%. This is also known as *rustic*.

Various products made from different hydration levels are:

Hydration Level	Nature of Product	Product
Lower	Stiff, firm and dry	Bagels and pretzels
Medium	Not sticky	Sandwich bread and rolls
Higher	Wet and sticky	Ciabatta bread and focaccia pizza

2.2.3 Uses of Baker's Formula

Some of the advantages of using the baker's formula are:

- To easily scale recipes for making the exact amount of dough needed for production.
- To check the balance of ingredients.
- To make an estimate/ guess about the kind of product derived from the formula

Since each ingredient is weighed, the formula enables to work with precision using only one unit of measure. The baker's percent also allows to scale a formula up or down. It also acts as a common language for bakers. It not only helps them communicate, but also enable them to quickly assess a formula by seeing the percentages used.

Baker's formula can also be used for comparing recipes. For example: dry, sweeter, saltier, etc. A baker can predict the recipe, alter the percentage of a single ingredient without changing the percentage of other ingredients. It is also useful in scaling different batch sizes accurately.

Regular use of baker's percentage increases baker's skills. Not only does it help in resizing/ scaling existing formulas, but enable bakers to create new formulas. It plays a significant role in baking different styles of bread since changing the water content using the formula can result in different types of bread dough.

UNIT 2.3 - Baker's Units

Unit Objectives 🎯

At the end of this unit, you will be able to:

1. Explain baker's units

2. Convert baker's units and carry out measurements using various units

2.3.1 Baker's Units

A baker use different units to measure different quantities. Liquid and solid both ingredients are used to prepare bakery products like water, nuts, flour, yeast etc. All the ingredients are measured in specific units, like gram, ml, cup and teaspoon.

Unit systems

All bakers must briefly know about the Metric system and SI system of measurement.

1. **Metric system**

   Metric system is a **system of measuring**. It has three main units:

m - **metre** for length
kg - **kilogram** for mass
s - **second** for time

2. **SI system**

   SI system is an international system of measuring. It has the following units:

Base Quantity	Name	Symbol
length	meter	m
mass	kilogram	kg
time	second	s
electric current	ampere	A
thermodynamic temperature	kelvin	K

2.3.2 Temperature

Temperature in the metric system is usually measured in degrees Celsius (°C).

Temperature	Description
0^0C	Water freezing temperature
21^0C	Room temperature
30^0C	Temperature of a beach weather
37^0C	Body temperature
100^0C	Water boils temperature
200^0C	Temperature of a hot oven

2.3.3 Celsius to Fahrenheit Conversion

Celsius, also known as centigrade, is a scale and unit of measurement for temperature. It is an SI derived unit.

Fahrenheit is also a temperature scale. It is used in some cases to represent temperature

Celsius can be converted into the Fahrenheit by using following formula:

- 0^0 C = 32^0 F
- 1^0 C = 33.8^0 F

Formula for Conversion

$T_{(°F)} = T_{(°C)} \times 1.8 + 32$ (*T represents temperature*)

Example:

Convert 30^0C into F

$T_{(°F)} = 30^0$C × 1.8 + 32 = 86^0F

Fig. 2.2 Fahrenheit scale

Some other measurements also used in bakery, they are mentioned briefly below:

Measurements	Metric System
1 teaspoon	5 ml
1 tablespoon	15 ml
½ cup	120 ml
¼ cup	60 ml
1 cup	140 ml
1 cup	226 gram
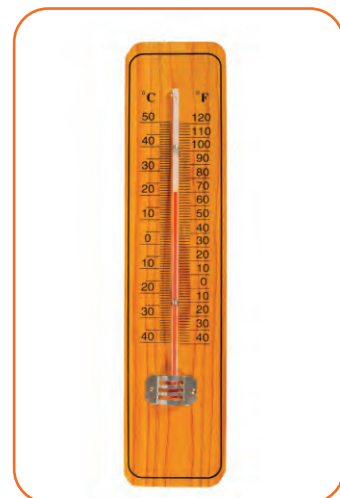
Note: Quantity measured from tea-spoon, table spoon and cup varies as per the nature of the ingredients. A list of examples is given in the table below:

Ingredients	Metric Quantity	Quantity in Metric System
Butter	1 tablespoon	14.175 grams
	1 cup	226 grams
Sugar	1 cup of raw sugar	250 grams
	1 cup of brown sugar	220 grams
Honey	1 tablespoon	21.25 grams
	¼ cup	80 grams
	1 cup	340 grams
Salt	¼ teaspoon	1.42 grams
	½ teaspoon	2.84 grams
	1 teaspoon	5.69 grams
	½ tablespoon	8.53 grams
	1 tablespoon	17.07 grams
Yeast	1 teaspoon (dry yeast)	3.1 grams
	1 tablespoon (dry yeast)	9.3 grams
Flour		125 grams
	1 cup whole wheat flour	120 grams
	1 cup bread flour	127 grams
	1 tablespoon of flour	Around 9 grams
Cream	1 cup	240 grams
	½ cup	120 grams
	1 tablespoon	15 grams

Fig. 2.3 Weighing machine

Internationally some recipes are represented in US or British system units.

US units are as follows:

Measured Units	Represented by (abbreviation)
Pound	lb
Ounce	oz
Quart	qt
Gallon	gal
Pint	pt
Fluid ounce	fl oz
Tablespoon	tbsp
Teaspoon	tsp
Inch	in
Foot	ft
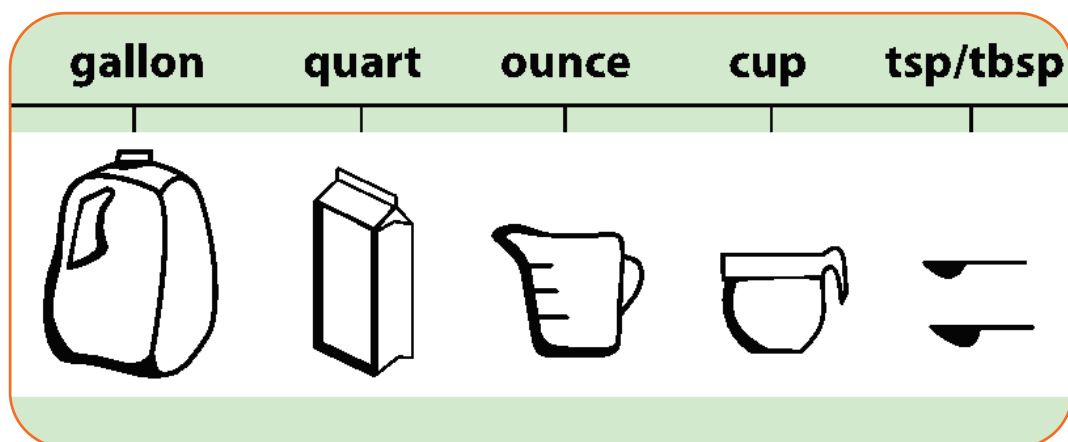
Fig. 2.4 Units for measurement

Conversion of Units

1 ib   = 16 oz
1 gal = 4 qt
1 qt = 2 pt = 4 cups = 32 fl oz
1 pt = 2 cups = 16 fl oz
1 cup = 8 fl oz
1 fl oz = 2 tbsp
1 tbsp = 3 tsp
1 ft = 12 in

Fig. 2.5 Measuring cup

Conversion of Units

1 oz	28.35 grams
1 gram	0.035 oz
1 lb	454 grams
1 kg	2.2 lbs
1 fl oz	29.57 ml
1 ml	0.034 fl oz
1 cup	237 ml
1 qt	946 ml
1 ltr	33.8 fl oz
1 in	25.4 mm
1 cm	0.39 in
1 mtr	39.4 in

Fig. 2.6 Measuring cup

Fig. 2.7 Measuring cup

Summary

A. Baker's Addition and Subtraction

Addition is one of the four basic operations of arithmetic. It is the sum of the total quantities/ numbers. Addition is signified by the symbol (+).

Subtraction is another basic arithmetic operation that represents operation of removing objects from a collection. It is signified by the symbol (-).

B. Baker's Ratio and Proportion

Ratio is a relationship between two numbers indicating how many times the first number contains the second.

- The ratio of two quantities a and b is in the same units.
- If we represent a and b as a/b, it will be a/b is called fraction.
- This can also be represented as a:b.
- a:b is called ratio.

In the ratio a:b, we call a as the first term or **Numerator** and b, the second term or **Denominator.**

Proportion is the ratio of one quantity to another. It is the statement of equality between two ratios.

The equality of two ratios is called proportion.

If a:b = c:d, we write a:b **::** c : d. This means a, b, c, d are in proportion.

Here a and d are called **extremes**, while b and c are called **mean terms**.

Product of means = Product of extremes.

a:b **::** c:d

(b x c) = (a x d)

C. Important Points About Baker's Percentage

- Baker's percentage is not the same as true percentage.
- In true percentage, the total of the ingredients always adds up to 100%.
- In baker's percentage, weight of the flour in the formula equals 100%.
- All the other ingredients are calculated in proportion to the weight of the flour.

D. Baker's Percentage Formula

Ingredient Percentage   =   Ingredient Weight/ Total Flour x 100

Summary

E.   Unit systems

Metric system

   Metric system is a system of measuring. It has three main units:

m - **metre** for length
kg - **kilogram** for mass
s - **second** for time

SI system

   SI system is an international system of measuring. It has the following units:

Base Quantity	Name	Symbol
length	meter	m
mass	kilogram	kg
time	second	s
electric current	ampere	A
thermodynamic temperature	kelvin	K

F.   Temperature and its Description

Temperature	Description
0^0C	Water freezing temperature
21^0C	Room temperature
30^0C	Temperature of a beach weather
37^0C	Body temperature
100^0C	Water boils temperature
200^0C	Temperature of a hot oven

Exercise

Q1. Add the following quantities:

Ingredients	Quantity
Sugar	150 gram
Solid milk	30 gram
Flour	300 gram
Chocolate powder	10 gram
Added quantity	

Q2. Subtract the following quantities:

Ingredients	Quantity
Flour	500 gram
Salt	20 gram
Sugar	5 gram
Milk powder	75 gram
Added quantity	

Q3. If 5 cups of flour will bake a cake for 10 persons. How many cups of flour will bake a cake for 50 persons?

Exercise

Q4. Find the percentage of the below given ingredients using the baker's formula.

Ingredients	Quantity	Percentage
Flour	300 gram	
Water	90 gram	
Yeast	10 gram	
Salt	2 gram	
Sugar	15 gram	

Q5. Write the abbreviation of the following:

Measure Units	Abbreviation
Pound	
Ounce	
Quart	
Gallon	
Pint	
Fluid ounce	
Tablespoon	
Teaspoon	
Inch	
Foot	

Exercise

Q6. Match the following

S.No	Temperature	Description	Answers
1	0^0 C	Temperature of a hot oven	
2	21^0 C	water freezing temperature	
3	30^0 C	Body temperature	
4	37^0 C	Room temperature	
5	100^0 C	Temperature of a beach weather	
6	200^0 C	Water boils temperature	

3. Raw Materials

Unit 3.1 – Overview: Raw Materials and Ingredients

Unit 3.2 – Details of Raw Materials and Ingredients

Key Learning Outcomes 💡

At the end of this module, you will be able to:

1. List preferred quality parameters for raw materials and ingredients

2. Identify raw materials and ingredients

Key Learning Outcomes 💡

UNIT 3.1 - Overview: Raw Materials and Ingredients

Unit Objectives

At the end of this unit, you will be able to:

1. Explain preferred quality parameters for raw materials and ingredients
2. Identify raw materials and ingredients

3.1.1 Basic Quality Parameters of Raw Materials and Ingredients

A craft baker bakes products such as, breads, puffs, cookies, cakes/ pastries, desserts, special baked products, etc. The quality of these products depends on the quality of the raw materials used. There is a wide variety of raw materials used to produce the aforementioned products. Hence, it is imperative for a craft baker to know the physical parameters of raw materials being used in the production process.

Basic quality parameters of raw materials

The table below shows most common physical parameters that can help a craft baker to choose the right kind of raw materials for the production process.

Physical parameters	Description
Appearance	
Colour	
Taste	
Odour	
Weight	

Adulterant	
Contaminants	

3.1.2 Raw Materials and Ingredients

Some of the most common raw materials used by a craft baker are:

- Flour
- Yeast
- Water
- Salt
- Sugar
- Milk and milk products
- Eggs
- Baking powder

Flour		
		Fig. 3.1 Flour
Yeast		
		Fig. 3.2 Yeast

Water		Fig. 3.3 Water
Salt		Fig. 3.4 Salt
Sugar		Fig. 3.5 Sugar
Milk and milk products		Fig. 3.6 Milk and milk products
Eggs		Fig. 3.7 Egg

UNIT 3.2 - Details of Raw Materials and Ingredients

Unit Objectives 🎯

At the end of this unit, you will be able to:

1. Explain the preferred quality parameters for raw materials and ingredients used

2. Identify raw materials and ingredients

3.2.1 Flour

Flour is the most common raw material used in the production of bakery items. There are various types of flour. Some of them are listed below:

- Bread flour
- Buckwheat flour
- Cake flour
- Coconut flour (gluten free)
- Corn flour (gluten free)
- Instant flour
- Millet flour (gluten free)
- Oat flour (gluten free)
- Organic flour
- Pastry flour
- Rice flour (gluten free)
- Almond flour
- Barley flour (low gluten)
- Sorghum flour (gluten free)
- Soy flour (gluten free)
- Whole–wheat flour (low gluten)

Fig. 3.8 Different types of flour

Gluten is one form of protein. It is found in grains such as, wheat, barley, rice, etc. Gluten gives consistency to the dough.

Gluten causes inflammation in the small intestine if an individual is suffering from celiac disease. It is the primary cause of celiac disease. It is recommended to avoid gluten if one is susceptible or suffering from related diseases.

Some common types of flour used in baking are:

All-purpose flour (Maida)

- Blend of soft and hard wheat.

- 8-11% of gluten is present in all-purpose flour.

- All-purpose flour is broadly classified as bleached and unbleached.

- Bleached all-purpose flour is used for the production of cookies, quick breads, waffles, etc.

- Unbleached flour is used to produce yeast breads, pastry, strudel, cream puffs, etc.

Self-rising flour

- White flour to which baking powder is already added.

- Sometimes, salt is also added to it.

- Baking powder is distributed uniformly in it.

- However, since different recipes require different amount of baking powder, one has to use it wisely and make adjustments as per the recipe.

Whole-wheat flour

- Usually made with grinding the entire wheat kernel (grain) including the bran and germ.

- This has higher fat content and therefore can spoil faster as the fat deteriorates and goes rancid.

- Bread made with whole-wheat flour is heavier than white bread. Sometimes, it is mixed with white flour.

Bran flour

- This is flour to which bran flakes have been added.

- The bran may be added for nutritive value to add fibre to the products or this may be to achieve the right product texture and look. It may also be used to balance a recipe.

- The bran may be fine or coarse depending up on the specification.

Fig. 3.9 Bran flour

Storage of flour

The following points must be kept in mind for storing flour:

- It must be stored in a cool and dry place.

- The flour should be stored in refrigerators during summer.

- Whole-wheat flour should be stored in the refrigerator round the year. Natural oils react with whole-wheat flour, making it unsuitable for use over the time.

- It is not advisable to mix old and new flour.

- Do not store flour near soap powder, onions or other food items and products with strong odours.

- If freezer space is available, flour can be repackaged in airtight, moisture-proof containers, labelled and placed in the freezer at 0 degrees F.

- Flour should never be stored for a long time.

3.2.2 Water

Water acts as a solvent in dough preparation. Measured volume of water should be added to get the right kind of dough. More or less water will definitely affect the quality of the dough.

Water is classified based on its characteristics, such as:

- Soft water

- Hard water

- Alkaline water

- Acidic water

Role of water in dough preparation

Water or a substitute liquid is usually an integral part of baked goods. The role of water in baked goods is as follows:

- Aids in the formation of gluten.

- Gluten controls consistency of dough.

- Acts as a solvent and dispersing agent (for salt, sugar, and yeast).

- It is necessary for yeast fermentation and reproduction. Softer doughs will ferment more quickly than dry doughs.

- The temperature of water can be varied in order to obtain dough of the correct temperature.

Various parameters of water and its impact on baked goods is listed below:

Hardness of water

- Hardness or softness of water represents the amount of calcium and magnesium ions in water, expressed in parts per million (ppm).

- Hard water has over 200 ppm of ions.

- Soft water has less than 50 ppm of ions.

- Water of medium hardness, with about 100 to 150 ppm of minerals, is best suited to bread baking.

- Minerals in water provide food for the yeast, and therefore can benefit fermentation.

- If water is excessively hard, there will be a tightening effect on the gluten, as well as a decrease in the fermentation rate (minerals make water absorption more difficult for the proteins in the flour).

- If water is excessively soft, lack of minerals will result in a dough that is sticky and slack.

- Most water is usually neither too hard or too soft, and if water is drinkable, it is considered suitable for bread baking.

Degree of acidity

The degree of acidity, expressed as pH (potential hydrogen), also has an effect on fermentation. In terms of alkaline or acidity, the pH is measured on a scale of 0 to 14. The lower the pH, the more acidic the solution. The higher the pH, the more alkaline (or base) the solution.

Pure water is neutral. When an acid is dissolved in water, the pH will be less than 7. When a base or alkaline is dissolved in water, the pH will be greater than 7.

- Hard water is more alkaline than soft water, and can decrease the activity of yeast.

- Water that is slightly acidic, (pH a little below 7) is preferred for bread baking.

3.2.3 Yeast

Yeast is the leavening agent. Leavening is the process of fermentation that causes the dough to expand or rise. Fermentation is the process by which yeast acts on sugars (added and already in the flour), and releases carbon dioxide gas and alcohol. The release of carbon dioxide produces leavening action in yeast products. The alcohol evaporates during and after baking. Yeast also adds flavour to the product.

Yeast is available in three forms:

1. **Fresh or compressed yeast**, usually available in cake form. It is moist and has a low shelf life. This is preferred by professional bakers.

2. **Instant yeast,** also called quick rise yeast, is dry and in the form of granules. This is used as it is in the product and has high absorption rate due to which it does not need to be dissolved in water before use as is done in the third form of yeast, active dry yeast.

3. **Active dry yeast** is also dry and in the form of granules. It must be dissolved in water before use. Usually this dissolved yeast and water are directly added to the product as indicated in the recipe. The water quantity in the recipe will have to be adjusted according to the water used along with the yeast to not overhydrate.

Fig. 3.10 Forms of yeast

Other leavening agents include baking soda or sodium bicarbonate, baking powder, air, steam, etc.

3.2.4 Salt

Salt is a very important ingredient in baked products. Apart from being a seasoning that impacts taste, it inhibits yeast growth, thereby preventing over fermentation of the dough. It also helps achieve the right texture as it strengthens the gluten structure and makes it more stretchable. It is important therefore not only to arrive at the right amount of salt to put in the dough, but also when it should be put into it.

3.2.5 Sugar

Sugar has the following impact on baked products:

1.   Adds sweetness to the taste.

2.   Provides food to the yeast causing fermentation to take place.

3.   Impacts the colour through caramelization.

4.   Weakens the gluten structure, therefore impacts texture of the product.

5.   Sugar is hygroscopic i.e. it attracts and retains moisture. This helps in keeping a product fresh.

6.   It also acts as a creaming or foaming agent to dissolve and support egg formations.

Sugar is commonly available and used in bakery products in different forms, such as:

1.   Granulated sugar

2.   Fine or very fine sugar

3.   Powdered or icing sugar

4.   Brown or demerara sugar

Fig. 3.11 Forms of sugar

Sugar may also be used as a syrup in some cases or caramelized. In some recipes, other syrups are used with or in place of sugar. These may be corn syrup, honey, malt syrup, glucose syrup, etc.

3.2.6 Milk and Milk Products

Milk is the other liquid used most commonly in a bakery. Milk not only contributes to the product texture, flavour and colour, but also to the nutritive value of the products.

Milk is available in different forms and with different fat specifications. This is important for a baker to know as this impacts and changes recipe composition.

Buffalo milk and cow milk are the most common. Buffalo milk is high on fat, almost twice as high as that of cow milk. It is higher in saturated fat and overall calories. Cow milk has 3.5-4% fat and buffalo milk up to 8%.

Milk is usually available with the following specifications:

1. **Full cream or whole milk:** Usually 3.5% fat and 8.5% non-fat milk solids and 88% water.

2. **Toned milk:** This refers to milk obtained by the addition of skim milk powder and water to whole milk. Under PFA (Prevention of Food adulteration) rules, toned milk should contain a minimum of 3.0% fat and 8.5% non-fat solids.

3. **Double toned milk:** This refers to milk obtained by the addition of skim milk powder and water to whole milk. Under PFA (Prevention of Food adulteration) rules, Double toned milk should contain a minimum of 1.5% fat and 9% non-fat solids.

4. **Skimmed milk:** This has almost all its fat content removed, usually 0.5% or less.

5. **Fortified milk:** Usually with vitamin D or other additions.

6. **Condensed milk:** This is sweetened, and has water evaporated.

7. **Dried milk:** This is available in powder form.

Other milk products used commonly in a bakery are cream, butter, butter milk, yoghurt or curd, cheese, etc.

Cream

Cream is a dairy product composed of higher-butterfat layer skimmed from the top of milk. Some of the types of cream used in bakeries include:

- Double cream is cream with a fat content of around 48%. This is used for pouring over fruit and puddings. Also used in cooking or whipped and incorporated into dishes or served separately.

- Whipped cream is made by whisking or mixing air into cream with more than 30% fat to turn the liquid cream into a soft solid.

- Sour cream, common in many countries including the U.S., Canada and Australia, is cream (12 to 16% or more milk fat) that has been subjected to a bacterial culture that sours and thickens it.

- Crème fraiche, contains 28% milk fat, is slightly soured with bacterial culture, but not as sour or thick as sour cream.

Butter

Butter is made by churning cream to separate the butterfat and buttermilk. This can be done by hand or by machine. Butter usually comes in the form of salted or unsalted, and may be pasteurized or unpasteurized. While using salted butter, one has to factor in the impact of salt as well. Butter is usually substituted for other shortening fats, which achieve the same objective.

Shortenings is a term given to any group of solid fats that are especially used for baking, generally including vegetable and animal fats. The main function of butter or shortenings is to:

- provide flavour

- moisten the product and give it a tender and soft texture

- improve quality

- provide flakiness through layering, for example, puff pastry

- serve as a creaming agent and support leavening

A common form of shortening is margarine, which is available for different purposes, such as baking cakes and pastries.

Buttermilk

This can be natural (by-product of making butter) or made by adding a bacterial culture to skimmed milk. This is used in products where there may be a need to add sour milk.

Fig. 3.12 Buttermilk

Yoghurt or Curd

These are made by adding bacterial culture to milk. These may have additions of milk solids and may be flavoured, salted or sweetened.

Cheese

Cheese is derived from milk, and is of a wide range of flavours, textures, and forms. Cheese may be classified based on type of milk, hardness, age, place of origin, etc. It is produced by coagulation of the milk protein casein. It comprises proteins and fat from milk, usually the milk of cow, buffalo, goat or sheep.

Various kinds of cheese include:

Milk based cheese

- Cow's milk cheese – Ricotta
- Goat's milk cheese – Boursault, Chevre
- Ewe's milk cheese – Feta
- Buffalo's milk – Mozzarella
- Raw milk cheese
- Skimmed milk cheese
- Pasteurised milk cheese

Fig. 3.13 Different types of cheese

Texture and hardness based cheese

- Soft cheese – Camembert and Brie
- Medium soft – Monterey Jack, Mozzarella, Gouda and Colby
- Medium hard – Cheddar, Edam, Emmenthal, Gruyere and Raclette
- Hard cheese – Parmesan, Pecorino and Romano
- Blue vein cheese – Gorgonzola, Stilton and Roquefort

Country wise cheese

- Netherlands or Holland – Edam and Gouda
- Italy – Ricotta, Parmesan, Gorgonzola, Mascarpone and Mozzarella
- England – Cheddar and Stilton
- France – Brie, Roquefort and Camembert
- Switzerland – Emmenthal, Gruyere and Raclette
- Greece – Feta
- American – Monterey Jack, Philly and Colby

Other categories

- Fresh cheese – Ricotta, Cottage Cheese, Paneer and Mascarpone
- Processed cheese – Plain or flavoured (herbs, pepper, etc.)
- Stretched cheese – Mozzarella

Commonly available brands are Amul, Britannia, Go, etc.

3.2.7 Eggs

Eggs usually used in bakeries are from chicken hens. A whole egg consists of a yolk, egg white, a membrane and a shell. Eggs are usually considered in recipes according to the the following specifications:

Fig. 3.14 Egg

Weight of whole egg	47 -50 gm
Egg yolk	28 gm
Egg white	19 gm

Various functions of eggs in various baked products apart from adding flavour and impacting taste include:

- Help in emulsification i.e. producing well-mixed and smooth batters and pastes for a good volume and a smooth, even texture.

- Act as leavening agents when beaten, trapping air.

- Egg protein when coagulates, toughens up to help give a stronger structure to the products.

- Provide moisture to baked products, which helps in keeping them fresh and improving quality.

- Give a lustrous look and colour when used in glazes, etc.

- Add to nutritional values of the products.

3.2.8 Baking Powder

Baking powder is a common leavening agent used in many bakery products. Baking powder usually includes baking soda, starch and an acid component. Baking powder are of different varieties - one where heat is required and the other where mere moisture is enough to release the gas. They go by the name of double acting and single acting baking powders respectively.

Fig. 3.15 Baking powder

3.2.9 Spices

Various spices are used in small quantities in many baked products. These are quite important ingredients as they help to improve the taste, texture and the visual appeal of the products.

A baker can add a variety of tastes to the baked products by choosing fresh and high quality spices.

Different spices and uses:

Name of the Spices	Uses
Cinnamon	
Cardamom seed	
Nutmeg	
Mace	
Poppy seeds	
Caraway seeds	
Sesame seeds	

3.2.10 Fruits

Variety of dried and preserved, nuts and fruits are often used in baked products to produce different types of flavours.

Dried fruits:

Dried fruits	Uses
Grape (Raisins)	
Currants	
Sultanas	
Dates	
Sugar preserved fruits and peels	
Glace cherries	
Crystallized cherries	
Crystallized fruits	

Angelica	
Ginger root	
Crystallized flowers	

Handling of dried fruits

- It is usually necessary to wash dried fruits before

- Care must be taken so that the fruit does not absorb too much water and become soft

- If fruit absorbs too much water it will break down during mixing and discolour the dough The flavour also diminishes if the fruit is soaked too long

- After washing the fruits should be drained in sieve

- After draining the fruits should be carefully picked over by spreading the fruit on a dry cloth to remove the excess moisture

- The fruit should always be added last to ensure even distribution throughout the batter / dough with minimum damage

3.2.11 Nuts

Nuts offer various flavour, texture, bite and appearance in baked products especially in cookies. There are several nuts available in various shapes and all have a high food value. Most of the nuts are expensive which restricts their use only in specialty items. List of nuts often use in bakery production are listed below;

Nuts	Properties
Almonds	
Walnuts	

	64
Pistachio nuts	
Cashew nuts	
Groundnuts (monkey nuts or peanuts)	
Coconuts	

Cocoa and chocolate are used very widely in the production and finishing of cakes, pastries, pies and cookies. They provide for variety of products and the characteristic flavour and colour in the product and also supply body and bulk to the cake mix or icing.

3.2.12 Food Colours

- The use of colour is important as the use of flavour
- The visual appeal of the product is enhanced by the use of colour
- The correct colour should be used to directly complement the flavour added in the product

Summary

A. **Basic quality parameters of raw materials:**

Physical parameters
Appearance
Colour
Taste
Odour
Weight
Adulterant
Contaminants

B. **Common raw materials used by a craft baker:**

Raw materials
Flour
Yeast
Water
Salt
Sugar
Milk and milk products
Eggs
Baking powder

C. **Classification of water:**

Soft water
Hard water
Alkaline water
Acidic water
Saline water

Summary

D. Types of flour:

Bread flour	Whole–wheat flour (low gluten)
Buckwheat flour	Soy flour (gluten free)
Cake flour	Sorghum flour (gluten free)
Coconut flour (gluten free)	Barley flour (low gluten)
Corn flour (gluten free)	Almond flour
Instant flour	Rice flour (gluten free)
Millet flour (gluten free)	Pastry flour
Oat flour (gluten free)	Organic flour

E. Various kinds of cheese:

Milk based cheese	Texture and hardness based cheese	Country wise cheese
Cow's milk cheese – Ricotta	Soft cheese – Camembert and Brie	Netherlands or Holland – Edam and Gouda
Goat's milk cheese – Boursault, Chevre	Medium soft – Monterey Jack, Mozzarella, Gouda and Colby	Italy – Ricotta, Parmesan, Gorgonzola, Mascarpone and Mozzarella
Buffalo's milk – Mozzarella	Hard cheese – Parmesan, Pecorino and Romano	France – Brie, Roquefort and Camembert
Raw milk cheese	Blue vein cheese – Gorgonzola, Stilton and Roquefort	Switzerland – Emmenthal, Gruyere and Raclette

Exercise

Q1. Match the following

1	Flour	Provide strength and flavour to any bakery product	☐
2	Yeast	Main solvent that provides solubility, and impacts the consistency of the dough or batter	☐
3	Water	Controls yeast fermentation and toughens the dough	☐
4	Salt	Produces carbondioxide (CO_2) to raise the dough	☐
5	Sugar	Improves texture of bakery products	☐
6	Milk and milk products	Major raw material required for any bakery product	☐
7	Eggs	Provides golden brown appearance of any bakery product	☐

Q2. Fill in the blanks.

a. Appearance comprises physical parameters such as, _____, _____, _____ and _____.

b. It is important to avoid raw materials with that smell _____

c. _____ weight raw materials should be selected for baked products.

d. Contaminants are defined as _____ substances.

Q3. Place the appropriate options in the correct category.

Used to produce yeast breads, pastry, strudel, cream puffs, etc. - - May be fine or coarse - - Baking powder is distributed uniformly in it - - Bread made with it is heavier than white bread - - Adds fibre to the products - - Blend of soft and hard wheat - - Salt is also added to it - - Has higher fat content

Exercise

All-purpose flour	Self-rising flour	Whole-wheat flour	Bran flour

Q4. Label the different types of yeast in the picture below.

Q5. List the specification of different types of milk .

Skimmed milk	
Condensed milk	
Double toned milk	

Exercise

Full cream or whole milk	
Fortified milk	
Dried milk	
Toned milk	

Q6. Match the following.

1	Netherlands or Holland	Brie, Roquefort and Camembert	☐
2	Italy	Emmenthal, Gruyere and Raclette	☐
3	England	Feta	☐
4	France	Monterey Jack, Philly and Colby	☐
5	Switzerland	Cheddar and Stilton	☐
6	Greece	Ricotta, Parmesan, Gorgonzola, Mascarpone and Mozzarella	☐
7	American	Edam and Gouda	☐

Exercise

Q7. List any three functions of shortenings.

Q8. Indicate whether the below given statements are true or false.

a. Baking powder is a common leavening agent used in many bakery products. _____

b. Eggs harden the batter. _____

c. Crème fraiche is as sour or thick as sour cream. _____

d. Hard water has over 200 ppm of ions. _____

e. It is not necessary to store flour in refrigerators during summer. _____

4. Bakery Equipment

Unit 4.1 – Equipment and Tools Used In Bakery

Key Learning Outcomes 💡

At the end of this module, you will be able to:

1. List and Identify commonly used equipment to prepare bakery products

2. Use equipment for production

3. State precautions and safety measures to be followed while handling bakery equipment

UNIT 4.1 - Equipment Used in Bakery

Unit Objectives 🎯

At the end of this unit, you will be able to:

1. State factors to be considered while selecting the equipment

2. Classify bakery equipment

3. Select right kind of equipment for production

4.1.1 Bakery Equipment

A Craft Baker use different equipment to prepare bakery products. Usage of equipment depends on the type, size and quantity of products. However, several factors have to be considered while selecting the equipment:

- Working performance
- Purpose
- Maintenance
- Skill to use
- Handling
- Cost and storage

Bakery equipment can be classified into:

Large equipment

Examples: Spiral Dough Mixer, flour mixer, Proofing cabinet or box, bun divider / rounder, flour sheeter and / or bench sheeter, Rotary oven with roll in racks, Other ovens (gas fired, electronically controlled convection ovens), etc.

Small equipment

Examples: Baker's scale, measuring cups and spoons, Flour sifters, Strainers, Rolling baker's racks, sheet pans, Stainless Steel bowls, Bread molds, loaf pans, muffin tins.

Utensils

Examples: Baker's Dough Knife, Knives (paring knife, palette knife (offset handle type), bread knife, carving knife, large chopping knife, filleting knife, etc.), Brushes (round, rectangular), Pastry bags, Tubes and Nozzles (open star tips, closed star tips, fluted tips, plain tips), stainless steel whip or whisk, 6-wheel adjustable dough divider, Roller Docker, Pastry wheel, Bench brush.

Bakery Equipment and Use		
Mixers	 *Fig. 4.1 Planetary mixer*	
Dough sheeter	 *Fig. 4.2 Dough sheeter*	
Dough moulder	 *Fig. 4.3 Dough moulder*	
Sifter	 *Fig. 4.4 Sifter*	

Divider or rounder	Fig. 4.5 Divider	
Proof box or proofers	Fig. 4.6 Proofers	
Laminator	Fig. 4.7 Laminator	
Baking oven	Fig. 4.8 Baking oven	

Depositors	Fig. 4.9 Depositors	
Dusters	Fig. 4.10 Dusters	
Cooling conveyor	Fig. 4.11 Cooling conveyor	
Packaging machinery	Fig. 4.12 Packaging machinery	

Parchment paper	Fig. 4.13 Parchment paper	
Cake boards	Fig. 4.14 Cake boards	
Sharp knife	Fig. 4.15 Sharp knife	
Cake pan	Fig. 4.16 Cake pan	

Off-set spatula		
	 Fig. 4.17 off-set spatula	
Bench scraper	 *Fig. 4.18 Bench scraper*	
Turntable	 *Fig. 4.19 Turntable*	
Fondant rollers	 *Fig. 4.20 Fondant rollers*	

Fondant smoothers	 Fig. 4.21 Fondant smoothers	
Paint brush	 Fig. 4.22 Paint brush	
Tart pan	 Fig. 4.23 Tart pan	
Loaf pan	 Fig. 4.24 Loaf pan	

Whisk	*Fig. 4.25 Whisk*	
Piping bag and nozzles	*Fig. 4.26 Piping bag and nozzles*	
Cooling rack	*Fig. 4.27 Cooling rack*	
Baking trays	*Fig. 4.28 Baking tray*	

Types of Ovens

Ovens are the most important equipment required in the baking process. Different types of baking products require different baking processes. Hence, different types of ovens are used. The following are the ovens used in the baking industry.

Cabinet type

- Rack ovens and deck convection ovens
- Large sheet pans can be wheeled for baking in various heights

Mechanical

- Reel oven and continuous tunnel convection
- The product moves on a conveyor belt inside the oven.
- Useful for uniform baking of biscuit

Note:

- Small and medium size bakeries use rack, deck, and reel ovens for baking.
- Large bakeries use continuous convection ovens as they are economical.

Masonry

- Wood fire ovens
- Used in private shops and cafes
- Optimum temperature of 450°C is maintained
- These are of two types Black Ovens and White Ovens
    - o **Black ovens:**

        Heated by burning wood in chamber

        The product is cooked in the same chamber
    - o **White ovens:**

        Heated by heat transfer

        The product is baked in a different   chamber

Precautions and safety measures to follow while handling baking equipment:

- Avoid direct spillage of water on electrical components.
- Clean the tools and equipment before and after each operation.
- Ensure regular maintenance of machinery
- Do not open machines with sharp knives during operation. It is safe to open a machine when it is   unplugged from an electrical source.
- Regularly check machines like ovens for efficiency of valves.
- Ensure the build-up of heat for such machines is always under control.
- Ensure all controls of all the machines are set to prescribed limits.

Summary

A. Selection of equipment

A craft baker use different equipment to prepare bakery products. Several factors have to be considered while selecting the equipment:

- Working performance
- Purpose
- Maintenance
- Skill to use
- Handling
- Cost and storage

B. Classification of bakery equipment

Large Equipment

Examples: Spiral Dough Mixer, flour mixer, Proofing cabinet or box, bun divider / rounder, flour sheeter and / or bench sheeter, Rotary oven with roll in racks, Other ovens (gas fired, electronically controlled convection ovens), etc.

Small Equipment

Examples: Baker's scale, measuring cups and spoons, Flour sifters, Strainers, Rolling baker's racks, sheet pans, Stainless Steel bowls, Bread molds, loaf pans, muffin tins

Utensils

Examples: Baker's Dough Knife, Knives (paring knife, palette knife (offset handle type), bread knife, carving knife, large chopping knife, filleting knife, etc.), Brushes (round, rectangular), Pastry bags, Tubes and Nozzles (open star tips, closed star tips, fluted tips, plain tips), stainless steel whip or whisk, 6-wheel adjustable dough divider, Roller Docker, Pastry wheel, Bench brush

C. Types of ovens

The following are the ovens used in the baking industry.

- Cabinet type ovens
- Mechanical ovens
- Masonry ovens

D. Precautions and safety measures

- Avoid direct spillage of water on electrical components.
- Clean the tools and equipment before and after each operation.

Summary

- Ensure regular maintenance of machinery

- Do not open machines with sharp knives during operation. It is safe to open a machine when it is   unplugged from an electrical source.

- Regularly check machines like ovens for efficiency of valves.

- Ensure the build-up of heat for such machines is always under control.

- Ensure all controls of all the machines are set to prescribed limits.

Exercise

Q1. Match the following

1	Dough Sheeter	It is used to evenly spread icing on the cake	☐
2	Proofer	It is of two types vertical and horizontal	☐
3	Rounder	It is a sealed space that provides the right environment and encourages fermentation of dough by yeast	☐
4	Laminator	Its primary purpose is to roll out with the required thickness	☐
5	Off set spatula	It is used to divide dough into equal proportions	☐

Q2. State which of the following are precautions to be observed while handling baking equipment? Tick all that apply

- Clean the tools and equipment before and after each operation. ☐

- Ensure the build-up of heat for such machines is always under control. ☐

- Ensure regular maintenance of machinery ☐

- Ensure all controls of all the machines are set to prescribed limits. ☐

Q3. Write the right name of the equipment against the photograph.

Exercise

5. Production

Unit 5.1 – Bread Making

Unit 5.2 – Making Buns, Rolls and Pastry Products

Unit 5.3 – Making and Decorating Cakes

Unit 5.4 – Some Other Common Bakery Products

Key Learning Outcomes 💡

At the end of this module, you will be able to:

1. Identify steps involved in bread making process

2. Use different methods to make breads

3. Identify bread faults and their causes

4. Use given recipes to produce common breads

5. Make sweet buns, pav, pizza and dinner rolls

6. Make baked goods from laminated pastry dough

7. Make baked goods from non-laminated pastry dough

8. Identify faults in baked goods made from pastry and their causes

9. Make a variety of cakes using different methods

10. Decorate cakes using a number of different types of icing

11. Identify cake faults and relate it to respective reasons

12. Identify and determine specific gravity requirements for cake baking

13. Make and use marzipan and pastillage for decoration purposes

14. Make cookies using different methods

15. Make doughnuts as per recipe

16. State stages of caramelization based on sugar syrup consistency

17. Make common custard, creams and syrups used in bakery

UNIT 5.1 - Bread Making

Unit Objectives ◎

At the end of this unit, you will be able to:

1. Explain the bread making process

2. Use different methods to make breads

3. Identify bread faults and their causes

4. Use given recipes to produce common breads

5.1.1 Bread Making

Bread is prepared from a dough of flour, yeast and water, usually by baking. Ingredients that are usually found in bread are: flour, salt, sugar, yeast, fat, water or other liquids such as, milk powder, milk, etc.

Other ingredients used in breads are:

Calcium propionate - Calcium propionate is a preservative that contains propionic acid. Calcium propionate is used as a bread mold inhibitor. It works against spore-forming bacteria and decreases the chance of spoilage.

Bread improvers - Bread improvers reduce the time that the bread takes to rise during fermentation, but also improves its texture and volume. This is done by the action of enzymes included in starch and gluten.

Types of bread

There are different types of bread. While one way to classify them is based on the ingredients, another way is based on the process followed.

Generally, bread based on ingredients may be classified as per type of flour used, such as:

- Wheat flour bread – (whole wheat, refined flour, etc.)
- Rye flour
- Multi-grain bread

Bread classified as per the process is:

1. Soft bread or rich dough products

2. Hard bread or lean dough products

3. Flaky bread or rolled in yeast dough bread

5.1.2 Bread Making Process

Bread making process involves the following steps:

1. **Selection of ingredients:** Based on the requirements to select flour, yeast and other ingredients as per the recipe. In case there is variation from the recipe of any ingredient type, its impact must be understood and other changes may have to be made to compensate.

2. **Weighing or scaling ingredients:** This involves weighing ingredients as per recipe i.e. adjusting the quantities as per variation in any ingredient and other factors that may impact the bread.

3. **Mixing:** This involves mixing of ingredients, which is done through different methods:

    Straight dough method, where all ingredients are mixed at the same time.

    Modified straight dough method - Yeast is soaked in water. All ingredients but flour and yeast are mixed to form an even mixture and then the flour and yeast are combined with these to make a smooth dough.

    Sponge method – This is a two-stage method. Yeast, flour and sugar are mixed first and then the dough is punched down and rest of the ingredients are added after fermentation. A smooth dough is then formed. Dough is stretched to work the gluten at this stage.

4. **Fermentation:** Yeast acts on the sugars in the mix to produce alcohol and carbon dioxide, expanding the dough. An under fermented dough mix will not have the desired volume and may become heavier and coarser in texture. Dough that over ferments becomes sticky, sour and hard to work with. High temperatures (60°C) kills the yeast and arrests fermentation. Remember: all the processes to follow before the actual baking allows fermentation to continue.

Fig. 5.1 Fermented dough

5. **Punching:** This is the process of deflating the dough by puncturing it to help the carbon dioxide escape, and make it even.

6. **Scaling:** This refers to the process of dividing the dough into sizes appropriate for baking, taking into account the moisture loss and final product requirements. This may be done manually or through a machine. About 50-60 grams per 500 grams of dough is a suitable for most breads.

Fig. 5.2 Scaling

7. **Rounding:** Bread is shaped in small rounds for uniformity. Some bakeries also use machines machines for this purpose.

8. **Benching:** The shaped dough is rested for follow-on fermentation and gluten relaxation.

9. **Make-up and panning:** This is shaping the dough into desired shape of the end product and putting it in the respective pans for baking. Pans should be greased for easy removal and even heating from the base.

10. **Proofing:** The pans are left for the dough to rise and fermentation to take place to get the desired volume. Dough should be protected from undesired collapsing at this stage which might accidentally happen due to rough handling of pans. Also, this requires the desired temperature and humidity, which may be controlled in proofers. Some bakeries use special while others may use trays and tables.

11. **Scoring or slashing the crust:** The top of the bread, especially hard breads is slashed by giving one or more cuts with a knife before baking. This is done so that bread does not crack on the sides when it stretches. This may be done only for appearance on some breads.

12. **Baking:** Bread is then baked in various types of oven, with varying time and temperatures as required by the recipe and type of product. It is important to not over or under bake either in terms of time or temperature. Fermentation gets arrested by baking, gluten solidifies, crust is formed and colour changes. Most breads depending on their type are baked from $175^{\circ}C - 220^{\circ}C$.

Fig. 5.3 Scoring or slashing breads

13. **Glazing:** Bread may be glazed after baking with egg wash (beaten eggs and water/ milk) or other glaze to give the crust a shine, and for keeping it moist.

14. **Cooling:** Bread once baked is then cooled to allow excess moisture to escape. It is preferred to cool bread on racks as that allows air circulation, which prevents the bottom of the bread from turning soggy.

Fig. 5.4 Cooling tray

15. Storing: Bread is then stored. It must be ensured that bread is stored without any weight on them. Bread must be wrapped or packaged in case it has to be stored for a long duration.

16. Slicing and Packaging: Bread may be sliced or unsliced depending on the type of bread and purpose. Slicing machines are used for slicing bread for evenness. The packaging machine may be used for packaging. This may be done manually for smaller quantities or due to shape constraints. It is important to bear in mind that there should be no moisture inside the packaging. For this very purpose, bread is cooled down before being packed. Generally hard crusted breads require air circulation therefore, are not wrapped, but sold in open packages otherwise their crust becomes elastic and soft.

Fig. 5.5 Sliced bread

Sour dough method: This method of bread making uses a sour dough starter also known as a natural starter for fermentation. Earlier, craft bakers were known to use this method only for baking breads, but in contemporary times, various yeast and other additives are used by craft bakers as well.

A sour dough starter uses wild yeast and bacteria to ferment the dough, and this was used as a perpetual starter culture where the liquid was replenished from time to time to keep the starter alive. This method produces higher acidity levels, and the dough may be used to leaven other doughs.

5.1.3 Bread Faults and Causes

A faulty bread not only results in customer dissatisfaction, but loss of revenue and image. It is important that causes for faults are understood and corrected or else losses can perpetuate and get magnified.

Faults can be of the following categories:

1. Flavour faults

2. Crust faults

3. Shape and structure faults

4. Texture faults

5. Other faults such as, contamination

S. No.	Factor	Condition	Resulting faults
1	Salt	Too much	Poor volume, too dense and improper taste
		Too little	Increased volume, collapsing of dough, improper taste, poor texture and crumbly bread
2	Yeast	Too much	Too much volume, collapsing of dough, improper taste, too coarse and open texture/ crumb
		Too little	Poor volume, too dense and heavy
3	Sugar	Too much	Too dark a crust and improper taste
		Too little	Pale crust, improper taste and thick crust
4	Liquid	Too much	Blisters on crust, too dark, too coarse, open texture/ crumb and poor shape
		Too little	Too dense and heavy, poor volume and pale crust
5	Flour	Weak	Poor volume and poor shape
6	Steam	Too much	Poor shape
		Too little	Splits, thick crust and dark crust
7	Fermentation	Under	Poor flavour, too dense and heavy, poor and coarse texture and too dark
		Over	Increased volume, collapsed structure, poor texture, pale crust and blisters on crust
8	Proofing	Under	Poor shape, too little volume, dense and heavy
		Over	Too much volume, collapsed structure, poor texture, too pale crust and blisters on crust
9	Temperature	Too hot	Poor volume, split crust, gray crumb and too dark
		Too low	Too pale, poor and crumbly texture
10	Pan	Too Big	Coarse and open texture and irregular shape
11	Handling	Improper	Collapse of dough, poor volume and irregular shape
12	Mixing	Improper	Too coarse texture and uneven crumb
13	Baking Time	Too long	Too dark and thick crust
		Too little	Poor crust, too pale and poor flavour
14	Shaping	Improper	Blisters on crust and poor shape
15	Sanitation	Poor	Undesirable inclusions and poor flavour

5.1.4 Bread Recipes

I. White pan bread or white bread

Ingredients

S.no	Ingredients	Weight (in gms)
1	Flour	1000
2	Sugar	80
3	Salt	20
4	Yeast (variable)	20
5	Fat (variable)	20
6	Calcium Propionate (CP)	5
7	Milk powder	10
8	Bread improver	1
9	Water (variable)	600

Mixing method:

- Dissolve yeast, sugar, salt, milk powder, CP and bread improver in 500 ml of water.
- Add flour, remaining water, and then add fat.
- Mix in slow speed for 2 mins.
- Mix in high speed for 5 mins.
- Maintain final dough temperature at 26^0C.
- Relax the dough for 30 mins.
- Knock back and divide.
- Proof for 1 hour (approx).
- Bake at 225 – 250^0C for 30 mins.
- Cool and slice when the bread reaches 41^0C.

Fig. 5.6 White bread

I. Milk bread

Ingredients

S.no	Ingredients	Weight (in gms)
1	Flour	1000
2	Sugar	200
3	Salt	20
4	Yeast (variable)	30
5	Fat (variable)	50
6	Calcium Propionate (CP)	5
7	Milk powder	20
8	Bread improver	1
9	Water (variable)	650

Mixing method:

- Dissolve yeast, sugar, salt, milk powder, CP and bread improver in 500 ml of water.
- Add flour, remaining water, and then add fat.
- Mix in slow speed for 2 mins.
- Mix in high speed for 5 mins.
- Maintain final dough temperature at 26^0C.
- Relax the dough for 30 mins.
- Knock back and divide.
- Proof for 1 hour (approx).
- Bake at $225 - 250^0$C for 30 mins.
- Cool and slice when the bread reaches 41^0C.

Fig. 5.7 Milk bread

III. French bread

Ingredients

S.no	Ingredients	Weight (in gms)
1	Flour	1000
2	Sugar	20
3	Salt	20
4	Yeast (variable)	20
5	Fat (variable)	20
6	Calcium Propionate (CP)	5
7	Milk Powder (MP)	10
8	Bread Improver (BI)	1
9	Gluten	10
10	Water (variable)	600

Mixing method:

- Dissolve yeast, sugar, salt, milk powder, CP and BI, gluten in 500 ml of water.
- Add flour, remaining water, and then add fat.
- Mix in slow speed for 2 mins.
- Mix in high speed for 5 mins.
- Maintain final dough temperature at 26^0C.
- Relax the dough for 15 mins.
- Divide the dough into 350 gms & round.
- Shape the dough in a long roll of 18 inches and deposit in french bread moulds.
- Score the bread with fine blade with 5 cuts & Proof for 1 hour.
- Bake at $225 - 250^0$C for 30 mins.

Fig. 5.8 French bread

IV. Raisin bread

Ingredients

S.no	Ingredients	Weight (in gms)
1	Flour	1000
2	Sugar	200
3	Salt	20
4	Yeast (variable)	25
5	Vegetable Fat	50
6	Calcium Propionate (CP)	5
7	Bread Improver (BI)	1
8	Raisins	100
9	Water (variable)	100
10	Liquid Milk	600
11	Cinnamon Sugar	500

Mixing method:

- Dissolve yeast, sugar, salt, CP and BI in 500 ml of milk
- Add flour, remaining water, and then add fat.
- Mix in slow speed for 2 mins.
- Mix in high speed for 5 mins.
- Maintain final dough temperature at 26^{0}C.
- Relax the dough for 15 mins.
- Divide the dough into 350 gms & round.
- Flatten the dough lengthwise.
- Apply melted butter, sprinkle cinnamon sugar & raisins.
- Proof for 1 hour.
- Bake at 225 – 250^{0}C for 30 mins.

Fig. 5.9 Raisin bread

V. Brown bread

Ingredients

S.no	Ingredients	Weight (in gms)
1	Flour	500
2	Wheat flour	500
3	Sugar	50
4	Salt	20
5	Yeast (variable)	25
6	Vegetable fat	20
7	Calcium Propionate (CP)	5
8	Milk Powder (MP)	10
9	Bread Improver (BI)	1
10	Water (variable)	600

Mixing method:

- Dissolve yeast, sugar, salt, CP and BI in 500 ml of milk
- Add flour and wheat flour remaining water.
- Mix in slow speed for 2 mins.
- Mix in high speed for 5 mins.
- Maintain final dough temperature at 26^0C.
- Relax the dough for 15 mins.
- Divide the dough into 450 gms & round.
- Mould the dough.
- Proof for 1 hour.
- Bake at 225 – 250^0C for 30 mins.

Fig. 5.10 Brown bread

VI. Multigrain bread

Ingredients

S.no	Ingredients	Weight (in gms)
1	Flour	600
2	Wheat flour	400
3	Sugar	50
4	Salt	20
5	Yeast (variable)	30
6	Vegetable fat	20
7	Calcium Propionate (CP)	5
8	Milk Powder (MP)	10
9	Bread Improver (BI)	1
10	Soy Flour	20
11	Oats	20
12	Barley	10
13	Sesame seeds	5
14	Water (variable)	600

Mixing method:

- Dissolve yeast, sugar, salt, CP and BI in 500 ml of milk
- Add flour & wheat flour remaining water.
- Mix in slow speed for 2 mins.
- Mix in high speed for 5 mins.
- Maintain final dough temperature at 26^0C.
- Relax the dough for 15 mins.
- Divide the dough into 450 gms & round.
- Mould the dough.
- Proof for 1 hour.
- Bake at 225 – 250^0C for 30 mins

Fig. 5.11 Multigrain bread

UNIT 5.2 - Making Buns, Rolls and Pastry Products

Unit Objectives 🎯

At the end of this unit, you will be able to:

1. Make sweet buns, pav, pizza and dinner rolls

2. Make baked goods from laminated pastry dough

3. Make baked goods from non-laminated pastry dough

4. Identify faults in baked goods made from pastry and their causes

5.2.1 Job Making Sweet Bun, Pav, Dinner Roll

Common bread rolls used in India include pav, sweet bun and dinner roll. Increasingly, pizza is also becoming an acceptable food item in common households.

Fig. 5.12 Sweet bun

Fig. 5.13 Pav bun

Fig. 5.14 Dinner roll

Some of the common recipes that one can prepare with the following ingredients:

I. Sweet bun

Ingredients

S.no	Ingredients	Weight (in gms)
1	Flour	1000
3	Sugar	250
4	Salt	20
5	Yeast	30
6	Fat	50
7	Calcium Propionate (CP)	5
8	Milk Powder (MP)	20
9	Bread Improver (BI)	1
10	Water (variable)	600-700

Mixing method:

- Dissolve yeast, sugar, salt, MP, CP and BI.
- Mix in slow speed for 2 mins.
- Mix in high speed for 5 mins.
- Maintain final dough temperature at 26^0C.
- Relax dough for 15 mins.
- Divide dough into 60 gm & round.
- Proof for 1 hour (approx).
- Bake at 225^0C for 15-20 mins.

Fig. 5.15 Sweet bun

II. Burger/Pav bun/Pizza base

Ingredients

S.no	Ingredients	Weight (in gms)
1	Flour	1000
3	Sugar	50
4	Salt	20
5	Yeast	20
6	Fat	50
7	Calcium Propionate (CP)	5
8	Milk Powder (MP)	10
9	Bread Improver (BI)	1
10	Water (variable)	600

Mixing method:

- Dissolve yeast, sugar, salt, MP, CP and BI.
- Mix in slow speed for 2 mins.
- Mix in high speed for 5 mins.
- Maintain final dough temperature at 26^0C.
- Relax dough for 15 mins.
- Divide dough into 80 gm & round.
- Proof for 1 hour (approx).
- Give the desired shape. Use a roller for pizza base on a flour dusted surface, dock (punch holes) using a fork on the base to avoid uneven surface risings.
- For pav bun, ensure the distance is such that the proofed dough balls are touching at the edges on all sides.
- Apply water wash and sprinkle sesame seeds where required
- Bake at 225^0C for 15-20 mins.

Fig. 5.16 Pav bun

III. Dinner roll

Ingredients

S.no	Ingredients	Weight (in gms)
1	Flour	1000
2	Sugar	100
3	Salt	20
4	Yeast	30
5	Vegetable Fat	50
6	Butter	50
7	Calcium Propionate (CP)	5
8	Milk Powder (MP)	20
9	Bread Improver (BI)	1
10	Water (variable)	600
11	Egg	1 no.

Mixing method:

- Dissolve yeast, sugar, salt, MP, CP and BI.
- Mix in slow speed for 2 mins.
- Mix in high speed for 5 mins.
- Maintain final dough temperature at 26^0C.
- Relax dough for 15 mins.
- Divide dough into 60 gm.
- Shape the dough into different shapes.
- Proof for 1 hour (approx).
- Bake at 225^0C for 15-20 mins.

Fig. 5.17 Braided dinner roll preparation

IV. Filled bun

Ingredients

S.no	Ingredients	Weight (in gms)
1	Flour	1000
2	Sugar	100
3	Salt	20
4	Yeast	30
5	Fat	100
6	Milk Powder (MP)	20
7	Bread Improver (BI)	1
8	Water (variable)	600
9	Egg	1 no.

Mixing method:

- Dissolve yeast, sugar, salt, MP and BI.
- Mix in slow speed for 2 mins.
- Mix in high speed for 5 mins.
- Maintain final dough temperature at 26^{0}C.
- Relax dough for 15 mins.
- Divide dough into 60 gm, and give different shapes with fillings.
- Proof for 1 hour (approx).
- Bake at 225^{0}C for 15-20 mins.

Method to prepare different fillings for bun

Lemon Curd

Ingredients

- 1/2 cup fresh lemon juice
- 2 teaspoons finely grated fresh lemon zest
- 1/2 cup sugar
- 3 large eggs
- 3/4 stick (6 tablespoons) unsalted butter, cut into bits

Method

1. Whisk juice, zest, sugar, and eggs all together in a heavy saucepan.

2. Stir in butter and cook over moderately low heat, whisking frequently for about 6 minutes until curd is thick enough to hold marks of whisk and first bubble appears on surface.

3. Transfer lemon curd to a bowl and chill. Its surface to be covered with plastic wrap until cold at least for 1 hour.

Fresh Strawberry Compote

Ingredients

- 1 pint fresh strawberries, washed, hulled and sliced
- 1/3 cup sugar
- 1/4 cup water
- 2 tsp. cornstarch
- Icing/ confectioners' sugar for garnish

Method

1. Combine all ingredients in a saucepan.

2. Stir well, then bring mixture to a boil.

3. Mash strawberries lightly using a masher to break up a bit.

4. Allow to boil for 3-4 minutes, then pour in to a bowl.

5. Allow to cool a bit at room temperature, then cover and refrigerate for cooling.

5.2.2 Laminated Pastry Dough

Laminated pastry dough can be of two types - with and without yeast. Products made from laminated dough (with yeast) include Danish pastry, croissants, etc. Laminated dough (without yeast) is called a puff pastry and various patties, cream horns, etc. are products made from these.

Making a laminated pastry dough

Lamination dough can be made by hand or by machine. The pictures below illustrate the process for making laminated pastry dough:

Steps: Preparation of Laminated Pastry Dough

Fig. 5.18 Preparation of laminated pastry dough using laminator

Common method for making laminated pastry dough by hand brings in the use of a rolling pin to flatten the dough. The dough pieces are sheeted with a rolling pin to uniform thickness and a size of approximately 16 x 36 inches (less for smaller dough pieces). The roll-in fat is evenly distributed over 2/3 of this area (16 x 24 inches). The uncovered portion is then folded over the centre third followed by the remaining third that has been covered with fat. This now gives three layers of dough separated by two layers of roll in fat. The dough pieces then turn 90, and sheeted to a uniform thickness with square corners measuring approximately 20 x 48 inches.

After brushing the excess dusting flour, the two end sections of the dough sheet are folded again over the centre section so that the final dough pieces consist of seven dough layers separated by six fat layers. This is the first threefold which is also called "half turn" by bakers. The dough is then placed on a flour dusted sheet pad for 20-30 minutes' rest time in refrigerator. Now the pastry is ready for final makeup into various products.

Steps: Pastry Preparation Manually

STEP 1: Obtain dough and fat

STEP 2: Apply 50% fat to 2/3 dough, and fold

STEP 3: Sheet dough into a rectangle of 4 mm thickness

STEP 4: Cut into desired shape and fill with various fillings

Fig. 5.19 Pastry preparation manually

Danish pastry

Ingredients

S.no	Ingredients	Weight (in gms)
1	Flour	1000
2	Sugar	200
3	Salt	20
4	Yeast	50
5	Fat	50
6	Folding fat	500
7	Water (variable)	450

Mixing method:

- Dissolve yeast, sugar, salt, and then add flour followed by fat.
- Mix in slow speed for 2 mins.
- Mix in high speed for 5 mins.
- Maintain final dough temperature at 20^0C.
- Relax dough for 15 mins.
- Sheet dough into a rectangle.
- Apply 50% fat to 2/3 dough, and fold.
- Rest dough for 20 mins.
- Apply the remaining dough for 2/3 dough, and fold.
- Rest dough for 20 mins.
- Sheet dough into a rectangle of 4 mm thickness.
- Cut into desired shape and fill with various fillings.
- Wash with water/ egg.
- Bake at 250^0C for 20 mins.

Fig. 5.20 Danish pastry

Croissant

Croissants are defined by their shape rather than by the type of dough they are made from. Croissants are basically made from Danish pastry dough. A medium rich Danish dough is excellent for croissant production. Croissant dough is laminated like regular Danish pastry dough.

Various types of croissants include:

- Butter croissants
- Chocolate croissants
- Vegetable croissants

S.no	Ingredients	Weight (in gms)
1	Flour	1000
2	Sugar	75
3	Salt	20
4	Yeast	30
5	Egg	1 no
6	Bread Improver	2
7	Mixing fat	50
8	Folding fat	150
9	Butter	150
10	Water	500

Mixing method

- Knead flour, sugar, salt, yeast, egg, bread improver and mixing fat with chilled water.
- Chill dough for 20 mins.
- Sheet dough to a uniform thickness, which depends on the size of the finished product.
- Cut triangular shaped pieces from dough, with the base slightly shorter than the two sides coming from the base.
- Roll the triangular shaped keeping the point on the inside and placing down.
- Egg wash after sufficient proofing.
- Bake in a temperature of 204.4 degrees Celsius
- Sheet dough to final thickness after 20 minutes.

- Cut into decided shapes and sizes.

- Fill with appropriate fillings and toppings.

- Egg wash (50 g milk + 50 g egg) the products after sufficient proofing the products.

- Bake at 204 – 218.3 degrees Celsius for the smaller pieces and 193.5 degrees Celsius for larger pieces for 15-20 minutes.

Baking tips

The temperature indicator in oven may not reflect the true temperature and the baker must use common sense when he/ she bakes any high quality bakery item. The fermentation temperature should be under the melting point of the roll-up fat. The number of turns should depend on the amount of roll-up fat. The roll-out height should not be less than 0.7 mm.

Steps: Croissant Preparation

STEP 1: Cut triangular shaped pieces from dough

STEP 2: Roll the triangular shaped keeping the point on the inside and placing down

STEP 3: Egg wash after sufficient proofing

STEP 4: Cut into decided shapes and sizes

STEP 5: Bake at 204 -216 .3^{0}C

Fig. 5.21 Croissant preparation

Puff pastry

Puff pastry does not include any leavening agent, but can rise up to eight times its original size when baked

Ingredients

S.no	Ingredients	Weight (in gms)
1	Flour	1000
2	Sugar	50
3	Salt	20
4	Fat	50
5	Folding fat	500
6	Cold water (varibale)	500
7	Egg	1 no.

Mixing method

- Dissolve yeast, sugar, salt and then add flour followed by fat.
- Mix in slow speed for 2 mins.
- Mix in high speed for 5 mins.
- Maintain final dough temperature at 15^0C.
- Relax dough for 20 mins.
- Sheet dough into a rectangle.
- Apply 50% fat to 2/3 dough, and fold
- Rest dough for 20 mins.
- Apply the remaining dough for 2/3 dough, and fold.
- Rest dough for 20 mins.
- Sheet dough into a rectangle of 4 mm thickness.
- Cut into desired shape and fill with various fillings.
- Wash with water/ egg.
- Bake at 250^0C for 20 mins.

Fig. 5.22 Puff pastry

Steps: Sausage Roll Preparation (Puff Pastry Product)

STEP 1: Cut triangular shaped pieces from dough

STEP 2: Apply 50% fat 2/3 dough and fold

STEP 3: Rest dough for 20 minutes

Fig. 5.23 Sausage roll preparation (puff pastry product)

STEP 3: Bake dough at 250°C for 20 minute

S.no	Error	Cause
1	Puff pastry fat smears while turning	• Bakery is too warm • Puff pastry fat has been worked on too strong
2	Fat comes out of the dough	• Too high fermentation temperature
3	Fat runs out of the dough while baking	• Less turns had been given
4	Layers flake off from the baked foods	• Too thin rolled out while turning
5	Pastries are rough and dry	• Too cool temperature while baking
6	Pastry is not loose	• Less fat has been rolled up
7	Layers are nearly not seen	• Too thin rolled out while turning
8	Pastries are too small and too soft	• Too many turns had been given

5.2.3 Non Laminated Pastry Dough

Non-laminated dough is when the fat, normally butter, shortening or lard is "cut-in" or sometimes rubbed into the flour. Non-laminated pastry dough includes short crust pastry, choux pastry and pie dough (normal and sweetened).

Basic pie dough

Ingredients

S.no	Ingredients	Weight (in gms)
1	Flour	1000
2	Sugar	50
3	Salt	20
4	Fat	700
6	Cold water (varibale)	300

Mixing method

- Sift the flour into a bowl.
- Add fat.
- Rub or cut shortening with flour to get bread crumb like consistency of the mixture.
- Dissolve salt and sugar in water and the same to the mixture.
- Mix until it is absorbed by the mixture in a gentle manner without overworking the dough.
- Place dough in refrigerator for at least 4 hours.
- Scale the portions of dough, as needed

Rich pie pastry dough

Ingredients

S.no	Ingredients	Weight (in gms)
1	Flour	1000
2	Sugar (omit for savoury items)	165
3	Salt	10
4	Fat	700
5	Cold water (varibale)	250
6	Butter	500
7	Egg yolks	80

Mixing method

- Sift the flour and mix with sugar in a bowl.
- Add butter.
- Rub or cut shortening with flour and sugar till there are no lumps.
- Add yolks, water and salt.
- Mix until it is absorbed by the mixture in a gentle manner without overworking the dough.
- Place dough in refrigerator for at least 4 hours.
- Scale the portions of dough, as needed.

Steps: Procedure for Baking Pie with Lattice Top Crust

Fig. 5.24 Procedure for baking pie with lattice top crust

Procedure for making tarts and tartlets

1. Use a short crust (pie dough, rich pie dough) to make tarts and tartlets.

2. Remove dough from refrigerator. Let it stand for a few minutes till it is slightly pliable.

3. Roll dough on a flat surface, which has been dusted with flour, approximately 3-5mm thick.

4. Use a rolling pin to wrap dough around it and place the dough in a buttered tart pan by unfolding it. Press dough at the edges to line the pan/mould accurately.

5. Trim excess edges off.

6. Dock dough with a fork, to allow gases to escape so that the surface remains even.

7. Line the shell with parchment/butter paper and fill with dry beans. The weight keeps the shell from rising and/or blistering.

8. Bake at 200 degrees Celsius for 20 minutes till slightly brown.

9. Remove the paper and beans and bake for another few minutes.

10. Remove from oven and cool the tart shell completely.

Fig. 5.25 Blind baked tart

Fig. 5.26 Tart with beans for blind baking

11. Fill in any filling of your choice. Some fillings can be put in an unbaked tart such as for Apple tart.

For example:

Lemon curd

Fig. 5.27 Lemon curd

Apple tart

Ingredients

S.no	Ingredients	Weight (in gms)
1	Cooking apples	1000
2	Sugar	100 gm
3	Cinnamon powder	5 gm
4	Unbaked tart shell	1 no.
5	Raisins and walnuts	(Optional)
6	Glaze	as needed

Mixing method

- Clean, peel, deseed and cut apples into thin slices.
- Sprinkle them with cinnamon powder and sugar. Nuts and raisins can be used as well.
- Arrange them neatly in a ring pattern in the tart shell.
- Bake at 200 degrees Celsius for 45 minutes.
- Cool and brush with glaze.

Steps: Apple Tart Preparation

STEP 1: Clean, peel, deseed and cut apples into thin slices

STEP 2: Roll dough on a flat surface

STEP 3: Apply butter to the tart pan

Steps: Apple Tart Preparation (contd.)

STEP 4: Use a rolling pin to wrap dough rounded and place dough in a buttered tart pan by unfolding it. Press dough at the edges to line the pan/mould accurately

STEP 5: Trim excess edges

STEP 6: Dock dough with a fork to allow gases to escape

STEP 7: Bake at 200 C for 20 minute till slightly brown

Fig. 5.28 Apple tart preparation

Choux pastry

Also known as éclair paste, choux pastry is the fastest to make. It is a non-laminated pastry.

Ingredients

S.no	Ingredients	Weight (in gms)
1	Flour	750
2	Sugar (for sweet products)	30
3	Salt	10
4	Butter	500
5	Water or milk, or both equally	1000
6	Eggs	1250

Mixing method

- Combine liquid, butter and salt in a heavy saucepan and boil the mixture.
- Remove the pan from heat and add all the flour.
- Return the pan to moderate heat and stir until dough forms a ball and leaves the sides of the pan.
- Use a mixer or a bowl to cool dough to 60 degrees Celsius.
- Beat eggs lightly and fold into the mixture a quarter at a time. Mix dough and blend in eggs.
- Mix until all eggs are absorbed by the mixture. When all eggs are absorbed, dough is ready.
- Scale the portions of dough, as needed.

Fig. 5.29 Choux pastry

Choux pastry product

Éclair

Ingredients

- Éclair paste
- Choice of filling
- Confectioners' sugar

Mixing method

- Line baking tray with parchment paper.
- Fit a large pastry bag with a plain tube. Fill the bag with éclair paste.
- Pipe out dough into strips about 2 cm wide and 8-10 cm long.
- Bake at 215 degrees Celsius for 10 mins.
- Lower heat and bake at 190 degrees Celsius until crisp and brown.
- Remove from oven and cool slowly in a warm place.
- Fill baked cooled eclairs with pastry cream by making a small hole at one end and using a piping bag to fill in the cream.
- Dip the tops of eclairs in chocolate fondant.

Fig. 5.30 Éclair preparation with choux pastry

UNIT 5.3 - Making and Decorating Cakes

Unit Objectives 🎯

At the end of this unit, you will be able to:

1. Make a variety of cakes using different methods

2. Decorate cakes using a number of different types of icing

3. Identify cake faults and relate it to respective reasons

4. Identify and determine specific gravity requirements for cake baking

5. Make and use marzipan and pastillage for decoration purposes

5.3.1 Mixing Cakes

Cakes are sweet and rich products that contain high fat and sugar content. The important part of baking is to create a structure that supports these ingredients and yet makes the product delicate and light. Different types of cakes are made with different methods, but every cake follows some simple rules and principles. Every experienced baker understands and uses these to produce cakes as per requirement.

Cake ingredients

- Structural ingredients such as, flour and eggs that provide structure to the cake. These also tend to absorb moisture.

- Shortening agents such as, fats including butter, sugar, and chemical leaveners.

- Liquids that provide moisture such as, water, milk, syrups, liquid sugars and eggs.

There are various methods of mixing or preparing the batter for a cake. Some of them are listed below:

1	Creaming method	• All ingredients must be at room temperature. Cream the butter, add sugar and beat until light and fluffy. If chocolate is used, add melted chocolate. Add eggs a little at a time and continue to beat until they are assimilated. Mix until light and fluffy. Add the dry and liquid ingredients alternatively in batches to maintain consistency. Ensure even mixing. The batter is ready for baking. • This method is used for butter cakes.
2	Two-stage method	• This has been named two-stage due to addition of liquid in two stages. This is a pouring consistency batter, more liquid than the creaming method batter. Ensure all ingredients are at room temperature. Add flour, baking powder, baking soda, salt and shortening. With the paddle attachment, mix for 2 minutes, stop and scrape the sides and then mix for another 2 minutes. Add melted chocolate at this stage, if required. Mix the remaining dry ingredients and add part of the liquids (milk and/ or water). Continue to mix at a low speed for 3-5 minutes. Scrape the sides from time to time in an even manner. Add the remaining liquids and lightly beaten eggs. Gradually add this mixture to the original batter. Mix the batter for 5 minutes.

3	Sponge method	• Mix sugar, eggs and salt in a stainless steel bowl. Place the bowl on top of a double boiler and warm the mixture to 43 degrees Celsius. Whip the mixture till it is light and foamy. Add milk or water or flavouring to the mixture. Fold in the flour without collapsing the foam in batches till all the flour is folded in. If the recipe calls for butter, then add melted butter and mix gently to assimilate. Transfer batter to a baking pan and bake immediately while caring to not bang the pan that may cause loss of volume. In some cases, the egg white and sugar are whipped separately and added to the batter toward the end before panning the batter.
4	Chiffon method	• Whip egg whites and sugar till they form firm peaks. Mix flour, baking powder, part of the sugar and salt in a mixer. Add oil into the mixer gradually followed by eggs, water and other flavouring. Ensure uniform mixing. Gently fold the whipped egg whites into the mixture. Pan and bake the batter immediately.
5	Angel food method	• Add flour, part of the sugar and mix evenly. Beat egg whites and rest of the sugar along with salt and cream of tartar. Whip till firm white foam peaks are formed. Gently fold in the flour mixture. Pan the batter and bake immediately.

Fig. 5.31 Beaten egg white

Fig. 5.32 Batter mixing

Fig. 5.33 Whipped cream

5.3.2 Cake Recipes

Following are recipes for some cakes that are consumed on a large scale:

Pound, Fruit, Cup, Date & Walnut cakes

S. no	Ingredients	Pound cake	Fruit cake	Cup cake	Date & Walnut cake
1.	Flour	1000 g	1000 g	1000 g	1000 g
2.	Sugar	1000 g	1000 g	1000 g	1000 g
3.	Fat	1000 g	1000 g	1000 g	1000 g
4.	Egg	20 nos.	20 nos.	20 nos.	20 nos.
5.	Milk powder	20 g	20 g	20 g	20 g
6.	Cake gel (optional)	50 g	50 g	50 g	50 g
7.	Baking powder	20 g	20 g	20 g	20 g
8.	Calcium propionate	4 g	4 g	4 g	4 g
9.	Vanilla essence	20 ml	20 ml	20 ml	20 ml
10.	Orange essence	10 ml	10 ml	10 ml	10 ml
11.	Lemon essence	10 ml	10 ml	10 ml	10 ml
12.	Choco chips			400 g	
13.	Deseeded dates				500 g
14.	Walnut				350 g
15.	Dry fruits		250 g		

Baking instructions

- Pound cake: Baking temperature – 210 C for 25 – 30 mins (approximately).
- Cupcake: Baking temperature – 210 C for 20 – 25 mins (approximately).
- Date & walnut: Baking temperature – 210 C for 20 – 25 mins (approximately).
- Fruit cake: Baking temperature – 210 C for 20 – 25 mins (approximately).

Fig. 5.34 Pound cake
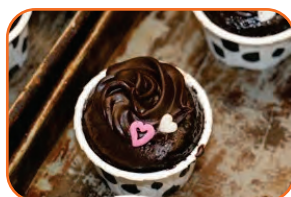
Fig. 5.35 Cup cake

Fig. 5.36 Date & walnut cake

Fig. 5.37 Fruit cake

Muffin and Vanilla sponge

S. no	Ingredients	Vanilla muffins	Chocolate muffins	Vanilla sponge
1	Flour	1000 g	825 g	1000 g
2	Sugar	1000 g	1000 g	1000 g
3	Egg	1000 g	1000 g	1400 g
4	Cake gel (optional)	50 g	50 g	50 g
5	Cake margarine	900 g	900 g	-
6	Butter	100 g	100 g	-
7	Milk powder	10 g	10 g	10 g
8	Baking powder	20 g	20 g	20 g
9	Calcium propionate	4 g	4 g	4 g
10	Vanilla essence	20 ml	20 ml	20 ml
11	Orange essence	10 ml	-	10 ml
12	Lemon essence	10 ml	-	10 ml
13	Water	-	-	100 ml
14	Refined oil	-	-	100 ml
15	Chocolate essence	-	10 ml	-
16	Cocoa powder	-	175 g	-

Muffins Procedure:

Mix the fat, sugar, salt, spice and milk powder and cream together in a mixer. Add eggs in phases. Mix together the rest of the dry ingredients including flour and baking powder. Mix together the liquid ingredients. Add these two mixtures to the mixer in batches, and continuously mix so that these are well blended. Repeat until all ingredients are mixed. Scrape down the sides periodically for even and complete mixing. Grease the muffin tins. Fill tins too half or two-thirds. Bake at 200 degrees Celsius for about 20-30 minutes.

Alternatively:

Mix together dry ingredients and mix together liquid ingredients including the fat. Add the liquid mixture to the dry mixture. Grease the muffin tins. Fill tins too half or two-thirds. Bake at 200 degrees Celsius for about 20-30 minutes.

Cake making methods

Sponge cake/ Chocolate sponge cake

- Whip eggs and sugar until sugar dissolve.
- Add flour, baking powder, calcium propionate, cake gel, essence and water and whip at high speed.
- Check specific gravity (0.50) and pour in baking tins.
- Bake at 182^0C for 25-27 minutes.

Fig. 5.38 Sponge cake

Pound cake (sugar shortening method)

- Cream margarine and sugar.
- Add egg one by one.
- Fold flour, baking powder and flavours.
- Check specific gravity (0.80) and pour in baking tins.
- Bake at 180^{0}C for 30-45 minutes.

Pound cake (flour shortening method)

- Beat flour, baking powder, calcium propionate and fat separately.
- Whip egg, flavours and sugar separately.
- Pour egg mixture in flour-fat mixer.
- Pour in baking tins.
- Bake at 180^{0}C for 30-45 minutes.

Eggless cake

- Beat fat and sugar
- Add condensed milk, baking powder, sodium bicarbonate, salt, vanilla, liquid glucose, cake gel,
- and beat the mixture.
- Fold in flour.
- Pour in baking tins.
- Bake at 180^{0}C for 25-30 minutes.

Eggless cake with premix

- Beat water and gel.
- Pour premix and beat.
- Pour into baking tins.
- Bake at 180^{0}C for 30 minutes.

Notes about specific gravity

Three of the most important criteria for controlling the quality of cakes are:

1. Batter temperature
2. Batter specific gravity
3. Finished product pH

Specific gravity

Why is Specific Gravity important?

Specific gravity affects:

- Final cake volume
- Cake symmetry
- Grains and texture
- Palatability/ mouth feel

Approximate specific gravity for cake varieties

Cake Variety	Approx. Sp. Gr.
Angel food	0.30
Chiffon	0.40
Sponge	0.50
Pound	0.80
Yellow layer	0.90

Preparation of mould batter for cake

1. Grease moulds and dust with flour.
2. Avoid excessive greasing of moulds as it may have a frying effect at the bottom of cake. This may give a greasy feel to the cake.
3. Turn the moulds upside down and tap gently to remove excess flour. If excess flour isn't removed, it will have an adverse effect on the appearance of cake.
4. Put the ready batter in moulds in large portions as adding batter in smaller portions can lead to creation of air pockets, which will create holes in the cake.
5. Fill only 2/3rd part of the moulds so that there is enough space for the cake to expand. Weigh the moulds and send for baking.

Process precautions and tips

1. Pre-heat the oven before baking. This ensures the product evenly gets the right temperature for the right time.
2. Make sure the oven and shelves are levelled and do not result in batter sliding and collecting more on one side causing uneven thickness.
3. Do not open the oven before it has set as this may lead to cooling and collapsing of cake. Do not handle the pan before it is set as this too may cause collapse.

4. Bake at the correct temperature as too high a temperature will cause the cake to set before it has risen and will also darken the colour. Too low temperatures will result in poor volume and texture as the cake doesn't set, and will collapse.

5. Adjust the recipe if baking at high altitudes (2000 or 3000 ft) as gases expand faster and moisture loss is greater at high altitude. These conditions therefore require more liquids, less leavening and less shortening.

Cake faults

Cake faults can result from texture, crust colour, taste, volume and shape.

Factor	Faults
Flour	• Too little flour causes poor volume. • Wrong kind of flour makes the texture too crumbly. • Too much flour will make the cake tough and dense. It may also crack the cake.
Eggs	• Too little egg will make the cake texture too coarse. • Too much egg will make the cake taste too eggy. • Cake becomes dense and tough.
Fat or shortening	• Improper shortening will make the cake crumbly or heavy and dense.
Sugar	• Too much sugar will make the cake too dark. • It will also make the cake dense, heavy and crumbly. • Too little sugar will make the cake crust too pale and the cake texture tough.
Temperature	• Too hot an oven will make the cake dark. • It will also cause poor volume, and may crack or burst open the cake. • Too low temperatures will make the cake too pale, too light, dense and heavy.
Liquid	• Too much liquid causes poor volume of the cake, making it dense and heavy. • Too little liquid will cause the cake to crack and burst open.
Mixing	• Uneven mixing can cause the cake texture to be crumbly or coarse. • The shape can also become uneven. • Cake may also crack or burst open.

	• Over mixing can make the cake tough and it can lose volume.
Handling	• Improper handling can collapse the cake. • Cake may lose volume. • Cake may look uneven in shape.

5.3.3 Cake Decoration

The appeal of cakes apart from its taste lies in its visual appeal. Cake decoration can range from simple to highly creative and complex pieces of work.

Cake decorations have the following purpose:

• Enhance the look and appearance.

• Protect and improve keeping qualities.

• Add flavor, richness and variation.

• Convey and support a theme, and can be customised.

• Generate interest for both the maker and customer.

Cake decorations are commonly of the following type:

1	Fondant	• Sugar syrup crystalized into a smooth, white mass providing a shiny coating to the cake. Glucose or cream of tartar may be added to invert sugar to get the right kind of crystallisation.
2	Butter cream	• Butter cream icings are light, smooth mixtures of fat and sugar, sometimes containing eggs. These are available in a few variations including those made with meringue, fondant and boiling sugar syrup. These are very versatile as they can be mixed with many colours and flavouring.
3	Fresh cream	• This is a mixture of fresh cream, whipped with sugar.
4	Foam type icings	• These are made from meringues that are made with boiling syrup, applied as twirls and peaks on a cake. Stabilising agent like gelatin may be added to retain its freshness.
5	Fudge type icings	• Heavy and rich icings made with sugar, butter liquid, salt and flavouring.
6	Confectioners icing	• Made with sugar, water and egg whites, making it hard and brittle when dry. Usually used exclusively for decoration work.
7	Flat icing	• Mixture of water and confectioners' sugar with added flavouring or corn syrup. This is used in Danish pastries, coffee cakes, etc.
8	Glazes	• Thin sugar syrup or corn syrup based coating to give shine to products. These may also have chocolate or gelatin based glazes with fruit preserves or syrups.

Equipment used for decoration includes piping bags, nozzles, pallete knife, serrated knife, icing screens or grates, turntable, icing comb, scraper, brushes, sugar dredger, cake rings, parchment paper, etc.

Other items used for decorative work include:

Marzipan and Pastillage

Marzipan: This is a paste made of almonds and sugar that is worked to a plastic consistency for working and cutting into different shapes. Marzipan sheets are useful for covering cakes and other items like petit fours. These may be coloured, patterned, streaked and rolled out in different thicknesses. This makes it very useful for decorative work.

Ingredients:

Almond paste	1000 g
Glucose	180 g
Confectionaries' sugar	1000 g

In a mixer or bowl blend the almond paste and glucose, until smooth. Add sugar gradually and mix ensuring smooth consistency and assimilation. The marzipan should be stiff and workable. Ensure it is not too dry, or it will result in cracking. One may add colour if required.

Fig. 5.39 Marzipan block and decorations

Pastillage: This is a sugar paste that is hard and brittle and rarely eaten. It is primarily used for display pieces and as a board for writing on cakes.

Ingredients:

Gelatin	1000 g
Cold water	180 g
Confectionaries' sugar	1000 g
Cornstarch	125 g
Cream of tartar	1 g

Mix the gelatin with water till it is dissolved. Combine sugar, starch and cream of tartar. In a mixer add the sugar mixture to the gelatin at a low speed, till it becomes a smooth pliable paste. Keep the paste covered at all times. Roll out the paste with a pin and as it dries out it will harden. Keep turning sides as it so as to dry evenly. Use as required.

Some tips to follow when decorating a cake:

- Always decorate cake with a flat top. Check the temperature of oven with an oven thermometer before beginning the decoration. If the oven temperature is high, cake will develop a rounded top.

- If cake has developed a small rounded top, put a plate on top of the cake as soon as you take it out from the oven. Push the plate gently downwards.

- Line your pan with parchment paper so that the cake comes out of the pan easily.

- If you wish to decorate cake with nuts, gently pat the nuts with your hand onto the sides.

- Before you start icing the cake, line the edges of the cake stand with 3-inch strips of waxed paper. This will keep the cake stand clean. Place the first layer of the cake over the strip. When you finish icing the cake, remove the strips one by one.

- Before writing on the icing of the cake, make sure you outline the letters with a toothpick.

- Make use of the basket weave tip, open star tip, closed star tip, round tip, leaf tip, drop flower tip and other smaller tools for beautifully decorating the cake.

UNIT 5.4 - Some Other Common Bakery Products

Unit Objectives 🎯

At the end of this unit, you will be able to:

1. Make cookies using different methods
2. Make doughnuts as per recipe
3. Explain stages of caramelization based on sugar syrup consistency
4. Make common custard, creams and syrups used in bakery

5.4.1 Making Cookies

Cookies come in variety of shapes and sizes. Cookies are crisp or soft, may have different flavourings.

Cookies are classified as the following:

- Dropped – Portions of soft dough are dropped on to a sheet using a spoon or a by hand. These are then baked to make cookies.

- Rolled – Left over dough is reused after being rolled and cut using a cutter. This is generally harder than other cookies.

- Molded – Cookies are stamped or flattened using a weight. Sometimes, a prepared mold is used to achieve this effect.

- Bar – The dough is baked in flattened, cylindrical sheets and cut after baking.

- Stencil – Batter is spread on a cardboard or plastic stencil. The stencil is removed after baking for the desired shape.

- Sheet – Dough is spread on sheets and after baking cut into desired shapes.

- Refrigerated – Rolls of dough are made in advanced and refrigerated. Cookies are cut and baked as needed.

- Bagged – Made by using a pastry bag and piped on to the baking tray.

Basic short dough for cookies

Ingredients

S.No	Ingredient	Weight (in gm)
1	Butter	1000 g
2	Sugar	500 g
3	Salt	15 g
4	Eggs	190 g
5	Vanilla extract	15 g
6	Flour	750 g

Mixing method

- Place the fat, sugar, salt and spices in a mixing bowl.

- Cream these at low speed. For lighter cookies cream until the mixture is light and fluffy. For denser cookies blend into a smooth paste.

- Add eggs and liquid and mix at a low speed.

- Fold in flour and then deposit on a prepared baking tray, as required.

- Add various flavours such as, lemon, cinnamon, almond, coconut, etc. while mixing.

- Garnish dough before or after baking, as appropriate.

Fig. 5.40 Different Cookies

5.4.2 Making Doughnuts

Doughnuts are cooked by deep frying unlike other bakery items mentioned previously. Doughnuts are a popular bakery item.

Here is the procedure to making doughnuts:

Ingredients

S.No	Ingredient	Weight (in gm)
1	Flour	1000
2	Sugar	135
3	Salt	20
4	Yeast (variable)	25
5	Fat	100
6	Baking Powder (BP)	5
7	Calcium Propionate (CP)	5
8	Milk Powder (MP)	20
9	Bread Improver (BI)	1
10	Water (variable)	600
11	Egg	1 no.

Mixing method

- Dissolve yeast, sugar, salt, MP, CP, BP and BI.
- Mix in slow speed for 2 mins.
- Mix in high speed for 5 mins.
- Maintain final dough temperature at 26C.
- Relax dough for 15 mins.
- Shape dough and cut with doughnut cutter.
- Proof and fry in hot oil of 190-195 degree Celsius.
- Garnish with chocolate sauce and nuts.
- Fill round donuts with jam (berliner).

Fig. 5.41 Doughnuts being fried

Fig. 5.42 Freshly fried doughnuts

Fig. 5.43 Decorated doughnuts

5.4.3 Syrup, Creams and Custard

In bakeries, some additional items used with other baked items are syrups, sauces, creams and custard. Following are few basic products which will add to craft baker's knowledge:

Sugar Syrup

Sugar syrup can be of different consistencies based on the proportion of water and sugar and the duration for which it is boiled for water to evaporate.

Various stages of sugar cooking include:

Stage	Temperature (in Celsius)
Thread	110
Soft ball	115
Firm ball	118
Hard ball	122-127
Small crack	130-132
Crack	135-138
Hard crack	143-155
Caramel	160-170

Simple Syrup

- Combine water (500ml) and sugar (500g) and boil the mixture over moderate heat.
- Cook and stir till sugar is dissolved.
- Remove any scum.
- When desired consistency is reached, remove from heat, cool and store.

Whipped Cream

It is one of the most useful toppings, fillings and ingredients in many desserts. Cream with fat content of 35% or more can be whipped into foam. Commonly, vanilla flavoured whipped cream is known as crème chantilly.

Crème Chantilly

Ingredients

Heavy cream	250 g
Confectionaries' sugar	40 g
Vanilla extract	2 ml

Fig. 5.44 Whipped cream

Procedure

In clean chilled utensils add chilled cream. Add sugar gradually and whip using a whisk or the machine mixer. Add the vanilla extract. Whip till stiff peaks are formed. Do not over whip or the cream will split.

Pastry cream

Pastry cream is used for filling. This has a stabilising agent and eggs added to the mixture.

Ingredients

Milk	1 litre
Sugar	250 g
Egg yolks	4 yolks
Whole eggs	2 eggs
Cornstarch	75 g
Butter	60 g
Vanilla extract	15 ml

Procedure

- Dissolve half the sugar and milk in a heavy saucepan.
- With a whip, beat egg yolks and whole egg in a bowl.
- Add cornstarch and half the sugar to eggs.
- Beat and whip until smooth.
- Add hot milk into egg mixture slowly and keep beating.
- Return mixture to heat and bring to a boil, stirring continuously.
- When mixture thickens, remove from heat.
- Add butter and vanilla.
- Mix until butter is completely blended in.
- Pour out onto a clean pan, dust lightly with sugar and cover with butter paper.
- Cool and chill as soon as possible.

Crème Anglais or vanilla custard sauce

Ingredients

Egg yolks	12 yolks
Sugar	250 g
Milk	1 litre
Vanilla extract	15 ml

Procedure

- Combine yolks and sugar in a bowl and whip till thick.
- Scald the milk on boiling water bath.
- Add vanilla extract to milk.
- Gradually, pour milk on egg mixture while stirring constantly with the whip.
- Set bowl over a double boiler and stir till mixture thickens to coat the back of a spoon.
- Remove from heat and set in a pan of cold water to stop cooking.

Meringues

Meringues are whipped egg whites sweetened and supported by sugar. They are used in pie toppings, pastries, desserts and cookies.

Ingredients

Egg whites	250 g
Fine Sugar	500 g

Procedure

- Beat egg whites at medium speed and then high speed until soft peaks are formed.
- Add half the sugar gradually and keep whipping.
- Stop when firm stiff peaks are formed.
- Fold in the remaining sugar gently with a spatula.

If hot sugar syrup is used instead of sugar, the meringue variation is called Italian Meringue.

Summary

A. Process of making bread

1.	Selection of ingredients	9.	Make-up and panning
2.	Weighing or scaling ingredients	10.	Proofing
1.	Mixing	11.	Scoring or slashing the crust
2.	Fermentation	12.	Baking
3.	Punching	13.	Glazing
4.	Scaling	14.	Storing
5.	Rounding	15.	Cooling
6.	Benching	16.	Slicing and Packaging

B. Bread faults and causes

S. No.	Factor	Condition	Resulting faults
1	Salt	Too much	Poor volume, too dense and improper taste
		Too little	Increased volume, collapsing of dough, improper taste, poor texture and crumbly bread
2	Yeast	Too much	Too much volume, collapsing of dough, improper taste, too coarse and open texture/ crumb
		Too little	Poor volume, too dense and heavy
3	Sugar	Too much	Too dark a crust and improper taste
		Too little	Pale crust, improper taste and thick crust
4	Liquid	Too much	Blisters on crust, too dark, too coarse, open texture/ crumb and poor shape
		Too little	Too dense and heavy, poor volume and pale crust
5	Flour	Weak	Poor volume and poor shape
6	Steam	Too much	Poor shape
		Too little	Splits, thick crust and dark crust
7	Fermentation	Under	Poor flavour, too dense and heavy, poor and coarse texture and too dark
		Over	Increased volume, collapsed structure, poor texture, pale crust and blisters on crust
8	Proofing	Under	Poor shape, too little volume, dense and heavy
		Over	Too much volume, collapsed structure, poor texture, too pale crust and blisters on crust
9	Temperature	Too hot	Poor volume, split crust, gray crumb and too dark
		Too low	Too pale, poor and crumbly texture

Summary

10	Pan	Too Big	Coarse and open texture and irregular shape
11	Handling	Improper	Collapse of dough, poor volume and irregular shape
12	Mixing	Improper	Too coarse texture and uneven crumb
13	Baking Time	Too long	Too dark and thick crust
		Too little	Poor crust, too pale and poor flavour
14	Shaping	Improper	Blisters on crust and poor shape
15	Sanitation	Poor	Undesirable inclusions and poor flavour

C.   General faults and their causes while baking Danish and puff pastry and croissants

S. no.	Error	Cause
1.	Puff pastry fat smears while turning	Bakery is too warm Puff pastry fat has been worked on too strong
2.	Fat comes out of the dough	Too high fermentation temperature
3.	Fat runs out of the dough while baking	Less turns had been given
4.	Layers flake off from the baked foods	Too thin rolled out while turning
5.	Pastries are rough and dry	Too cool temperature while baking
6.	Pastry is not loose	Less fat has been rolled up
7.	Layers are nearly not seen	Too thin rolled out while turning
8.	Pastries are too small and too soft	Too many turns had been given

D.   Methods of mixing and preparing batter

Creaming method
Two-stage method
Sponge method
Chiffon method
Angel food method

Summary

E.   Types of cake decorations

Fondant	Fudge type icings
Butter cream	Confectioners icing
Fresh cream	Flat icing
Foam type icings	Glazes

F.   Classification of cookies

Dropped	Stencil
Rolled	Sheet
Molded	Refrigerated
Bar	Bagged

G.   Various stages of cooking sugar

Stage	Temperature (in Celsius)
Thread	110
Soft ball	115
Firm ball	118
Hard ball	122-127
Small crack	130-132
Crack	135-138
Hard crack	143-155
Caramel	160-170

H.   Preparation of mold batter for cake

- Grease molds and dust with flour.
- Avoid excessive greasing of molds as it may have a frying effect at the bottom of cake. This may give a greasy feel to the cake.
- Turn the molds upside down and tap gently to remove excess flour. If excess flour isn't removed, it will have an adverse effect on the appearance of cake.
- Put the ready batter in molds in large portions as adding batter in smaller portions can lead to creation of air pockets, which will create holes in the cake.
- Fill only 2/3rd part of the molds so that there is enough space for the cake to expand.
- Weigh the molds and send for baking.

Exercise

Q1. List the steps involved in making bread. Mention only the titles in the table below.

Q2. Mention the resulting fault under the specified condition.

S. no.	Factor	Condition	Resulting faults
1	Salt	Too much	
2	Yeast	Too little	
3	Sugar	Too little	
4	Liquid	Too much	
5	Flour	Weak	
6	Steam	Too much	
7	Fermentation	Over	
8	Proofing	Under	
9	Temperature	Too hot	
10	Shaping	Improper	

Exercise

Q3 . Describe the process for making filled bun.

Q4. How many types of croissants are available? List the same

Q5. Fill in the blanks

1. _____ dough is when the fat, normally butter, shortening or lard is "cut-in" or sometimes rubbed into the flour.

2. Puff pastry does not include any _____ agent.

3. _____ are basically made from Danish pastry dough.

4. Laminated pastry dough can be of two types - with and without _____.

Exercise

Q6. List the three types of ingredients that are required to make a cake.

Q7. Give the description of the methods listed below:

Two-stage method	
Chiffon method	
Angel food method	

Exercise

Q8. Fill in the missing steps for making an eggless cake.

I)   Beat fat and sugar

ii) Add condensed milk, baking powder, sodium bicarbonate, salt, vanilla, liquid glucose, cake gel, and beat the mixture.

iii) _____.

iv) Pour in baking tins.

v)   Bake at 180C for _____.

Q9. Name the decoration material based on the description given below:

	These are available in a few variations including those made with meringue, fondant and boiling sugar syrup. These are very versatile as they can be mixed with many colours and flavouring.
	This is a mixture of fresh cream, whipped with sugar.
	Made with sugar, water and egg whites, making it hard and brittle when dry. Usually used exclusively for decoration work.
	Mixture of water and confectioners' sugar with added flavouring or corn syrup. This is used in Danish pastries, coffee cakes, etc.
	Thin sugar syrup or corn syrup based coating to give shine to products. These may also have chocolate or gelatin based glazes with fruit preserves or syrups.

Q10. Name any five equipment used for decorating cakes.

Exercise

Q11. Indicate whether the following tips are true or false.

1. Always decorate cake with an uneven top. _____

2. Line the pan with parchment paper so that the cake comes out of the pan easily. _____

3. Before icing the cake, line the edges of the cake stand with 3-inch strips of waxed paper. _____

4. Writing on the icing can be done without outlining the letters. _____

Q12. Name the products made from the following ingredients:

1. _____

Icing sugar	500 g
Gelatine	10 g
Water	30 ml
Liquid glucose	15 g

2. _____

Icing sugar	500 gm
Cake margarine	250 gm

Q13. Name the different types of cookies made in bakeries

Exercise

Q14. List the various ingredients used to make doughnuts.

Q15. Mention the stage of sugar cooking from the temperature shown below:

Stage	Temperature
	110 degrees Celsius
	118 degrees Celsius
	135-138 degrees Celsius
	160-170 degrees Celsius

Q16. What are Meringues? List the ingredients required to make Meringues.

Exercise

Q17. Mention the quantity of the ingredients given below:

S. no.	Ingredients	Vanilla muffins	Chocolate muffins
1	Flour	1000 g	825 g
2	Sugar	1000 g	
3	Egg		1000 g
4	Cake gel (optional)	50 g	50 g
5	Cake margarine	900 g	
6	Butter		100 g
7	Milk powder	10 g	
8	Baking powder	20 g	20 g
9	Calcium propionate		4 g
10	Vanilla essence	20 ml	

Q18. List the four specific gravity effects.

Q19. What is the purpose of decorating a cake?

6. Preparation and Maintenance of Work Area

Unit 6.1 – Introduction to Cleaning and Disinfection

Unit 6.2 – Food Safety Standards and Regulations

Key Learning Outcomes

At the end of this module, you will be able to:

1. State the importance of cleaning and disinfection in the production area

2. Define the terms 'cleaning', 'disinfection' and 'sanitization'

3. Select appropriate cleaning agent based on the purpose

4. Carryout cleaning, disinfection and sanitization activities

5. Identify hazards and corrective actions to be taken while handling hazardous chemicals

6. Interpret warning signs

7. Name the authority responsible for Food Safety and Standards in India

8. State the importance of FSSAI license

9. Interpret FSSAI standards and regulations

UNIT 6.1 - Introduction to Cleaning and Disinfection

Unit Objectives

At the end of this unit, you will be able to:

1. Explain the importance of cleaning and disinfection in the production area
2. Define the terms 'cleaning', 'disinfection' and 'sanitization'
3. Select appropriate cleaning agent based on the purpose
4. Carryout cleaning, disinfection and sanitization activities
5. Explain hazards and corrective actions to be taken while handling hazardous chemicals
6. Interpret warning signs

6.1.1 Introduction

It is the primary duty of the employees of a bakery/ restaurant/ hotel to provide hygienic food to customers. Unhygienic food can affect the health of customers, and tarnish the brand image of a bakery/ restaurant/ hotel.

The process of maintaining hygiene starts from the production unit. It is very important to clean the work area before actual production. The work area should remain clean, tidy and pest free throughout the production process.

Food Safety and Standards Authority of India (FSSAI) has proposed some guidelines for food safety standards. Good housekeeping practice should be followed and adapted in day to day activities.

Where would you like to work?

6.1.2 Cleaning and Disinfection

Some important actions/ steps should be followed to maintain a clean and hygienic workplace:

- **Cleaning** is the process of removing toxic/harmful substances from the work area and equipment.

- Suitable /recommended cleaning agents should be used for this process.

- **Disinfection** is the process of eliminating nearly all microorganisms with the use of chemicals, heat or ultra violet rays.

- **Sanitization** is more powerful than disinfection, wherein almost all living organisms are eliminated.

- Identify the '**food contact surface**' and '**non-food contact surface**', and use relevant method to clean/disinfect the work area and equipment.

- Food contact surface include - work tables, utensils, equipment, tools and machines.

- Structure, surrounding area, walls, ceiling, refrigerator etc. are the non-food contact surface.

- The **work area** and **equipment** used for production should be cleaned or disinfected based on the Standard Operating Procedure (SOP).

- A check sheet can be created to ensure the cleanliness of the work area and equipment.

Cleaning agents:

- A suitable cleaning agent should be used for cleaning food contact surfaces including work area and equipment.

- The table below provides details of chemicals used in the cleaning process.

Cleaning agent	Description
Water	
Heavy duty detergents (highly alkaline detergents)	
Potassium hypochlorite, Sodium hypochlorite and Calcium hypochlorite	
Liquid chlorine	
Hydrogen peroxide	

Cleaning process:

- Cleaning process in the production unit is broadly categorized as **Work Area Cleaning** and **Equipment cleaning**

```
                    Cleaning Process

      Work Area Cleaning        Equipment Cleaning
```
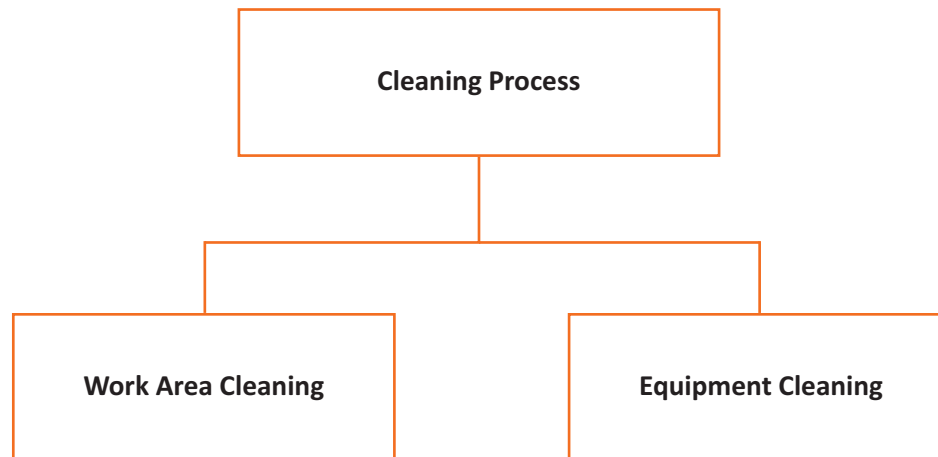
Work Area Cleaning Process:

Following is the procedure to clean the work area:

| Clean the work area by sweeping |
| Mop the work area using suitable sanitizers |
| Remove dust and unwanted material from the work area |
| Dispose waste as per the procedure |
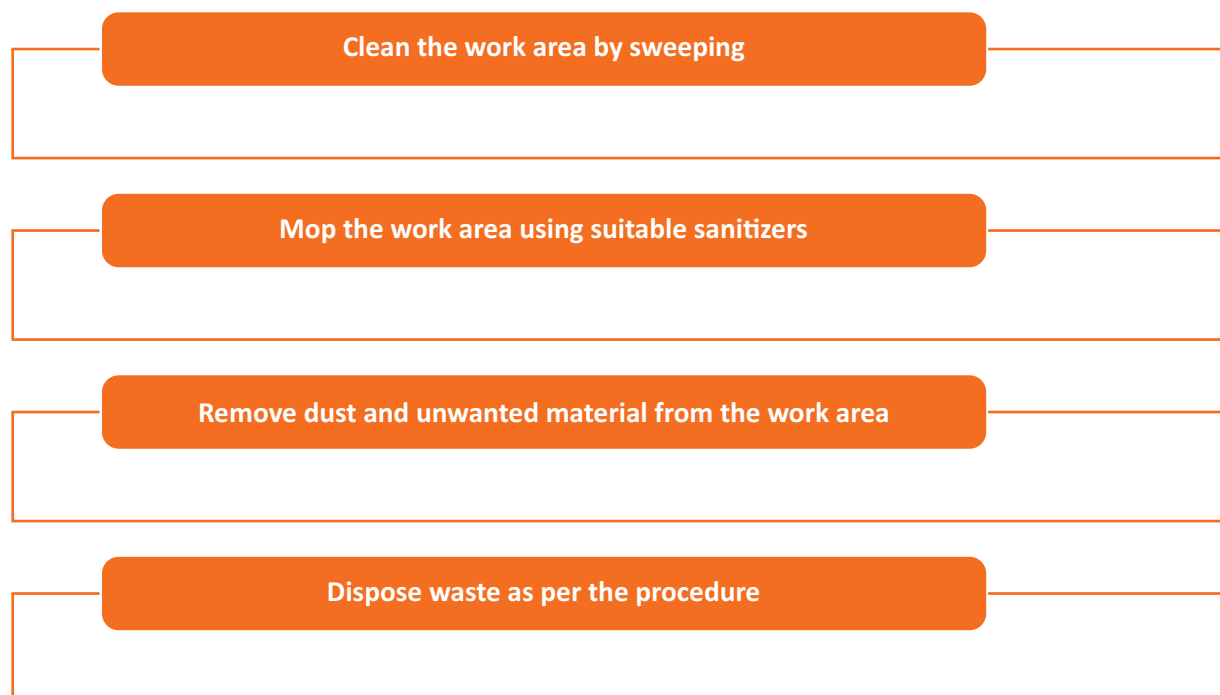
Fig. 6.1 Work area cleaning process

Please note:

1. Standard pest control methods should be followed.

2. Ensure that fly catchers, fly proofing doors, windows etc. are in good working condition.

3. Waste water is directed to ETP (Effluent Treatment Plant).

4. Solid waste is sent to solid waste treatment plant or for organic composting.

Equipment cleaning process:

Following is the general cleaning and sanitizing process:

| Preparation | Cleaning | Sanitizing | Drying |

Fig. 6.2 General cleaning and sanitizing process

Following is the procedure to clean equipment:

Collect required tools, equipment and machinery for cleaning and maintenance

Choose CIP/COP/air pressure method for cleaning based on the requirement

Sanitize using suitable sanitizers

Attend to minor repairs and faults if any
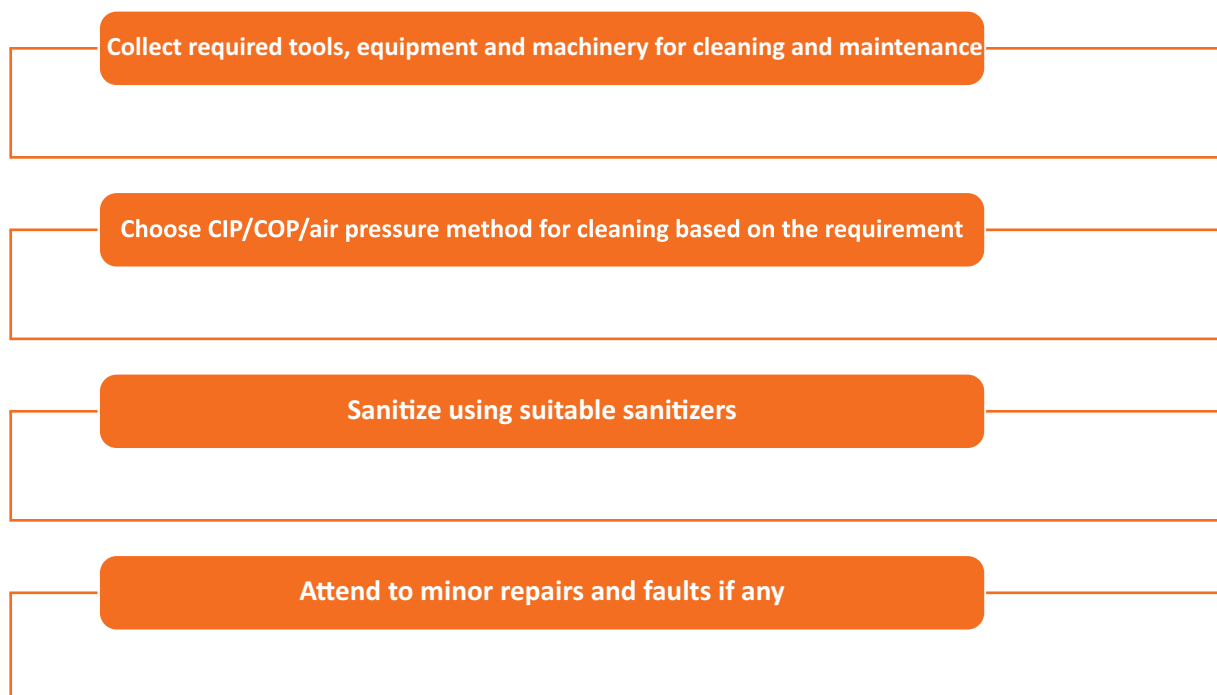
Fig. 6.3 Equipment cleaning process

6.1.3 Chemical Hazards and Risks

Many harmful chemical agents are used in the cleaning process. Chemicals should be handled, stored and disposed as per the laid down procedure.

Potable water after the cleaning activity become acidic in nature. Use of this water is harmful for health. Waste water should be sent to ETP (Effluent Treatment Plant) for treatment. Chemically treated water can be used for gardening.

Solid wastes are also produced during cleaning. Solid wastes are sent to solid waste treatment plant or for organic composting.

The table given below lists the side effects of chemicals used in the cleaning activity.

Alkaline solution	Skin irritation, itching
Hypochlorite	Burns, skin irritation, pain, blisters, nausea, vomiting, inflammation etc.
Liquid chlorine	Irritation in respiratory system if inhaled

Preventive measures:

Following are some of the preventive measures that can be taken to avoid hazards due to harmful chemicals:

Using hazardous materials	
Storing hazardous materials	
Remedial measures in case of exposure to toxic materials	

Warning signs:

Flammable materials	Toxic	Explosion risk
Corrosive	Biohazard	Radiation hazard

Fig. 6.4 Warning signs

UNIT 6.2 - Job Food Safety Standards and Regulations

Unit Objectives 🎯

At the end of this unit, you will be able to:

1. Name the authority responsible for Food Safety and Standards in India

2. Explain the importance of FSSAI license

3. Interpret FSSAI standards and regulations

6.2.1 Introduction

The Food Safety and Standards Authority of India (FSSAI) was established in the year 2008 to handle food related issues in various Ministries and Departments FSSAI has been created for laying down science based **standards** for articles of food and to **regulate** their manufacture, storage, distribution, sale and import to ensure availability of safe and wholesome food for human consumption.

A license by FSSAI means high degree of consumer confidence in quality and safety of food. To obtain the license for a product, the industry has to meet all standards and regulations laid by FSSAI.

For a baker, knowledge of the FSSAI standards and regulations is beneficial..

6.2.2 FSSAI Standards and Regulations

Following   are some of the sanitary hygienic requirements for a food manufacturer / processor / handler:

- The premises should be located in a sanitary place, which is free from filthy surroundings and and maintain overall hygienic environment. All new units should be set up away from environmentally polluted areas.

- A food business should have adequate space for manufacturing and storage to maintain overall hygienic environment.

- Apart from cleanliness, the premises should be adequately lighted, ventilated and spacious

- Floors, ceilings and walls must be maintained in a sound condition. They should be smooth and easy to clean with no flaking paint or plaster

- The floor and skirted walls should be washed as per requirement with an effective disinfectant.

- The premises should be kept free from insects. No spraying should be done during business hours. Fly swats/ flaps should be used to kill spray flies. Windows, doors and other openings should be fitted with net or screen as appropriate to make the premises insect free.

- Water used in the manufacturing should be potable. A chemical and bacteriological examination of the water should be done at regular intervals at any recognised laboratory

- A regular supply of potable water should be ensured in the premises. In case of intermittent water supply, adequate storage should be done for food preparation, cleaning and washing.

- Equipment and machinery when employed should be of such design which will permit easy cleaning. Arrangement for cleaning of containers, tables, working parts of machinery, etc. should be provided.

- No vessel, container or other equipment, the use of which is likely to cause metallic contamination should be employed in the preparation, packing or storage of food. Copper or brass vessels should have proper lining.

- All equipment should be kept clean, washed, dried and stacked at the close of business to avoid the growth of mould/ fungi and infestation.

- All equipment should be placed well away from the walls to allow proper inspection.

Fig. 6.5 Oven cleaning

Fig. 6.6 Personal protective equipment

- There should be an efficient drainage system to provide adequate disposal of refuse.

- Workers working in processing and preparation should wear clean aprons, hand gloves and head wear.

- Persons suffering from infectious diseases should not be permitted to work. Any cuts or wounds should remain covered at all times, and the person should not be allowed to come in direct contact with food.

- All food handlers should keep their finger nails trimmed, clean and wash their hands with soap, or detergent and water before commencing work and after using the toilet. Scratching body parts and head should be avoided while handling food.

- All food handlers should avoid wearing fake nails, loose jewellery or other items that may fall into the food. They should also avoid touching their face or hair.

Fig. 6.7 Nail clipping

Fig. 6.8 No spitting

- Eating, chewing, smoking, spitting and nose blowing should be prohibited within the premises, especially while handling food.

- All articles that are stored or are intended for sale should be fit for consumption, and have proper cover to avoid contamination.

- The vehicles used to transport food items should be maintained in good repair and kept clean.

-

- Food items while in transport in packaged form or in containers should maintain the required temperature.

- Insecticides/ disinfectants should be kept and stored separately and away from food manufacturing/ storing/ handling areas.

Cleaning and maintenance:

- A cleaning and sanitation programme should be drawn up and observed and the record there of should be properly maintained. This will indicate specific areas to be cleaned, cleaning frequency and procedure to be followed along with the equipment and materials to be used for cleaning.

- Equipment used in manufacturing should be cleaned and sterilized at set frequencies.

- Cleaning chemicals should be handled and used carefully in accordance with the instructions of the manufacturer and stored separately away from food materials in clearly identified containers to avoid any risk of food contamination.

Fig. 6.9 Cleaning agents

Pest control systems:

- Food establishment including equipment and building should be kept in good repair to prevent pest access and to eliminate potential breeding sites.

- Holes, drains and other places where pests are likely to gain access should be kept in sealed condition or fitted with mesh/ grills/ claddings or any other suitable means as required.

- Animals, birds and pets should not be allowed to enter into the food establishment areas/ premises.

- Food materials should be stored in pest-proof containers stacked above the ground and away from walls.

- Pest infestations should be dealt with immediately and without adversely affecting food safety or suitability.

Fig. 6.10 Pest control warning

- Treatment with permissible chemical, physical or biological agents within the appropriate limits should be carried out without posing a threat to the safety or suitability of food.

- Records of pesticides/ insecticides used along with dates and frequency should be maintained.

Personal cleanliness:

- Food handlers should maintain a high degree of personal cleanliness. The food business should provide to all food handlers adequate and suitable clean protective clothing, headwear, face mask, gloves and footwear. The food business should also ensure that all food handlers wear only clean protective clothes, headwear and footwear every day at work.

- Food handlers should always wash their hands with soap and clean potable water, disinfect their hands and then dry with hand drier or clean cloth towel or disposable paper before beginning any food handling activities. This procedure should also be followed immediately after handling raw food or any contaminated material, tools, equipment or work surface or using the toilet, which can result in contamination of food items.

- Food handlers engaged in food handling activities should refrain from smoking, spitting, chewing, sneezing or coughing over food whether protected or unprotected and eating in food preparation and food service areas.

- Food handlers should trim their nails and hair periodically, and do not encourage or practice unhygienic habits while handling food.

Steps: Hand Washing

STEP 1: Palm to palm

STEP 2: Between Fingers

STEP 3: Back of Hands

STEP 4: Fingernails

STEP 5: Wrists

STEP 6: Rinse and dry

Fig. 6.11 Hand washing procedure

Summary

A. Cleaning processes

1. **Cleaning** is the process of removing toxic/ harmful substances from the work area and equipment.

2. **Disinfection** is the process of eliminating nearly all microorganisms with the use of chemicals, heat or ultra violet rays.

3. **Sanitization** is more powerful than disinfection, wherein almost all living organisms are eliminated.

4. Identify the '**food contact surface**' and '**non-food contact surface**', and use relevant method to clean/ disinfect the work area and equipment.

5. The **work area** and **equipment** used for production should be cleaned or disinfected based on the Standard Operating Procedure (SOP).

B. Effective cleaning agents

1. Water

2. Heavy duty detergents (highly alkaline detergents)

3. Potassium hypochlorite, sodium hypochlorite and calcium hypochlorite

4. Liquid chlorine

5. Hydrogen peroxide

C. Work area cleaning process and equipment cleaning process

Work area cleaning process	Equipment cleaning process
Clean the work area by sweeping	Collect required tools, equipment and machinery for cleaning and maintenance
Mop the work area using suitable sanitizers	
Remove dust and unwanted material from the work area	Sanitise using suitable sanitisers
Dispose waste as per the procedure	Attend to minor repairs and faults, if any

D. FSSAI standards and regulations

- The premises should be located in a sanitary place, which is free from filthy surroundings and maintain overall hygienic environment. All new units should be set up away from environmentally polluted areas.

- Floors, ceilings and walls must be maintained in a sound condition. They should be smooth and easy to clean with no flaking paint or plaster.

Summary

- The premises should be kept free from insects. No spraying should be done during business hours.

- Water used in the manufacturing should be potable. A chemical and bacteriological examination of the water should be done at regular intervals at any recognised laboratory.

- No vessel, container or other equipment, the use of which is likely to cause metallic contamination should be employed in the preparation, packing or storage of food. Copper or brass vessels should have proper lining.

- All equipment should be kept clean, washed, dried and stacked at the close of business to avoid the growth of mould/ fungi and infestation.

- There should be an efficient drainage system to provide adequate disposal of refuse.

- Workers working in processing and preparation should wear clean aprons, hand gloves and head wear.

- Persons suffering from infectious diseases should not be permitted to work. Any cuts or wounds should remain covered at all times, and the person should not be allowed to come in direct contact with food.

- All food handlers should keep their finger nails trimmed, clean and wash their hands with soap, or detergent and water before commencing work and after using the toilet. Scratching body parts and head should be avoided while handling food.

- Eating, chewing, smoking, spitting and nose blowing should be prohibited within the premises, especially while handling food.

- The vehicles used to transport food items should be maintained in good repair and kept clean.

Exercise

Q1. Fill in the blanks.

a. _____ is the process of removing toxic/ harmful substances from the work area and equipment.

b. _____ is more powerful than disinfection, wherein almost all living organisms are eliminated.

c. The primary function of _____ is to carry detergent or sanitizer to the surface and carry soils and contamination from the surface.

d. _____ is used for eliminating bacteria, pathogens and other microorganisms.

e. Cleaning process in the production unit is broadly categorized as _____ and _____.

Q2. Place the appropriate option in the correct category:

> Dispose waste as per the procedure - - Collect required tools, equipment and machinery for cleaning and maintenance - - Remove dust and unwanted material from the work area - - Choose CIP/ COP/ air pressure method for cleaning based on the requirement - - Mop the work area using suitable sanitizers - - Sanitise using suitable sanitisers - - Clean the work area by sweeping - - Attend to minor repairs and faults, if any

Work area cleaning process	Equipment cleaning process

Exercise

Q3. Label the pictures.

Q4. Match the following:

1	Alkaline solution	Irritation in respiratory system, if inhaledt	
2	Hypochlorite	Skin irritation, itching	
3	Liquid chlorine	Burns, skin irritation, pain, blisters, nausea, vomiting, inflammation, etc.	

Q5. What does FSSAI stand for?

....

....

Exercise

Q6. What are the preventive measures that should be taken for the following:

1. Exposure to toxic materials

2. Using hazardous materials

3. Storing hazardous materials

Exercise

Q7. What do these warning signs signify? Label them.

(flammable sign)	(toxic/skull sign)	(explosive sign)
(corrosive sign)	(biohazard sign)	(radiation sign)

Q8. Indicate whether the following statements are true or false:

1. The floor and skirted walls should be washed only using water. _____

2. Eating, chewing, smoking, spitting and nose blowing is allowed while handling food. _____

3. The premises should be kept free from insects. No spraying should be done during business hours. _____

4. Food materials should be stored in pest-proof containers stacked above the ground and away from walls. _____

5. Cleaning and sanitation programme can be conducted at irregular intervals. _____

7. Planning for Production

Unit 7.1 – Production Order

Unit 7.2 – Production Sequence

Unit 7.3 – Record Keeping

Key Learning Outcomes 💡

At the end of this module, you will be able to:

1. Plan production in terms of resources including material, time and manpower for achieving objectives

2. Plan production tasks and sequence of activities for efficient production

3. Analyze production sequence

4. Calculate batch size

5. Calculate requirement for raw materials

6. State the necessity for record keeping or documentation

7. Identify various records maintained by a craft baker

UNIT 7.1 - Production Order

Unit Objectives

At the end of this unit, you will be able to:

1. Plan production in terms of resources including material, time and manpower for achieving objectives

2. Plan production tasks and sequence of activities for efficient production

7.1.1 Production and Planning

Production Planning is an essential part in any food processing operation including processing of bakery products.

- Planning has to be done at all stages to meet with production quantity and quality in time.

- Pre-production planning is as important as actual production, and a craft baker should possess the necessary skills and knowledge to prepare a plan and execute the same to achieve production targets.

- Production planning starts after receiving production order or once the production target is known.

After the production order is known, an appropriate or designated team calculates quantities, duration and dates to meet the timeline as mentioned in the order.

Sector like bakery can't afford over production due to perishability of products, production budget of owner/ entrepreneur and of the consumer. Production should be exactly as per the order received from owner/ supervisor or as per sales forecast . A plan is required in such situations.

Importance of production order

Demand of bakery products is not uniform . It varies every day. Therefore, a production order provides:

- projection to meet daily sales and market demand

- estimated quantity of raw materials

- skilled manpower in the bakery based on the demand indicated in production

- orders

Traditional bakeries do not receive production order because their production and sales takes place in the same premises.

7.1.2 Post Production Order Activities

Once a craft baker receives production order , he/ she needs to perform the following tasks:

- Check the availability of raw materials, packaging materials, equipment and manpower.

- Plan production sequence.

- Calculate batch size, requirement for raw material, packaging material and manpower for completing the order.

- Estimate machine/ equipment production capacity.

UNIT 7.2 - Production Sequence

Unit Objectives ⌖

At the end of this unit, you will be able to:

1. Explain production sequence

2. Calculate batch size

3. Calculate requirement for raw materials

7.2.1 Production Sequence

Production sequencing helps a baker to carry out his/ her responsibilities perfectly in time to meet the production target.

Production sequencing includes:

- Calculate product output requirements as per production order.

- Select quality raw materials for production.

- Calculate production time for every part of process to meet daily demand(s).

- Determine the start and end time for production on a day.

- Assign responsibility to support staff to meet demand(s).

- Prioritise production as per the urgency of an order.

7.2.2 Batch (or lot)

In simple terms, batch is a specific quantity of product(s) produced in a given time.

Batch size

The production order and machine capacity are considered to decide batch size. It can be defined by two ways:

1) Fixed quantity: Fixed quantity can be understood by the following example:

Let's assume a production unit produces 100 kg bakery products in a day. So, the batch size is 100 kg or it can be divided (100 kg) in parts to form smaller batch sizes, like 20, 25, 50, etc.

2) Fixed time: Fixed time can be understood by the following example:

Let's assume a production unit produces 100 kg bakery products in 8 hours. So, the batch size for 8 hours is 100 kg or time can be divided to reduce the batch size, like batch of 25 in 2 hours, 50 in 4 hours, etc.

7.2.3 Types of Production Process in a Bakery

Two types of production process are followed in a bakery i.e. **continuous production** and **batch production.**

The table given below explains the difference between continuous and batch production process:

Continuous Production	Batch Production
A mechanical process which runs continuous till production is complete	A process which is carried out step by step
Automatic machines are used	Semi-automatic machines are used
No manual labour is involved. Saves labour cost.	Manual labour is involved
Proofing is done in a flow as a part of production.	Proofing is done in groups of intervals.
Machine controls are set in the beginning of the entire production cycle.	Machine setting is required for each batch.
Biscuits, cookies, etc. are baked using this production process	Bread, cake, etc. are baked using this process

Production rate

Production rate refers to the number of items labour/ machine can produce in a specific time period.

7.2.4 Raw Material and Manpower Requirement

Once the total volume of production is decided as per the order, a baker then needs to calculate the quantity of ingredients required to bake particular product(s).

The following points have to be considered to decide the quantity of raw materials:

- Recipe of product
- Possible size of waste and losses during production process

Manpower/ staff

The number and types of workers needed to operate a baking unit depend on the amount of production and on the degree of mechanisation of the process. However, a baker needs to carefully consider the skills required for production, availability of total number of people and their requirement at different stages of production.

Ways to use manpower efficiently:

- Train workers as and when required.
- Allocate different jobs to each worker.
- Prepare activity chart for workers.
- Update the chart regularly.

Example: Calculation of raw materials (based on assumption)

Order received to produce 50 kg bread.

Recipe

Flour	1000 g (1kg)
Salt	100 g
Sugar	250 g
Margarine	100 g
Water	250 ml/ g
Total amount of ingredient	1700 g

We need to make 50 kg bread so the total amount of each ingredient's proportion will be calculated using the formula:

$$\frac{\text{Ingredient's volume used in recipe}}{\text{Production target}} \times \text{Total} = \text{Total volume ingredients used in recipe}$$

As per the above formula, following volume of ingredients will be required to produce 50 kg bread:

Wheat flour	(1000/1700)	x	50 kg	=	29.42 kg
Salt	(100/1700)	x	50 kg	=	2.94 kg
Sugar	(250/1700)	x	50 kg	=	7.35 kg
Margarine	(100/1700)	x	50 kg	=	2.94 kg
Water	(250/1700)	x	50 kg	=	7.35 kg

Total - 50 kg

7.2.5 Packaging Material Calculation

Packaging for foodstuff comes in different forms based on technical requirements throughout the supply chain as well as marketing needs (like brand identity or consumer information) and other criteria.

The layer that is in direct contact with food is called 'food contact material'. Three layers of packing are required to pack bakery products or any other processed food, which are:

- **First layer or Primary packaging:** It is seen at the point of sale. It needs to contain and protect food product(s) as well as display it and provide information.

- **Second layer or Secondary packaging:** It is the middle layer of packaging. For e.g., a cardboard box with a number of identical products inside.

- **Third layer or Transit packaging:** It is the outer container that allows easy handling during transit between factory, distribution centres and retailers.

Materials required to complete three layers of packaging

Three layers of packaging is completed with the help of paper sheet, plastic bags, silver foil made pouches, etc. The requirement of raw materials for packaging always depends on the quantity of production and size of packet(s) as per the order. Packaging can be done for small (grams) to large (kilograms) sizes.

Requirement of raw materials can be calculated as explained in the following example:

Example:

A baking unit produces 50 kg bread per day.

As per the order, 100 g bags have to be packed with 50 packs in each cardboard distribution box.

- Total 100 gram bags required   - 500 bags
- Total number of cardboard distribution box required - 10 boxes (50 bags in each)

Packaging: Packaging material should be airtight in order to avoid moisture and strong/ rigid to protect flakes from breaking. Opaque packaging materials are recommended.

7.2.6 Performance of Equipment

Equipment used in a bakery should be effective in order to carry out production as per standards and fixed production deadlines. Before executing any production order☞ a baker must ensure that equipment is properly oiled, lubricated and rechecked as per the checking schedule. A technician should always initiate preventive maintenance of equipment.

Steps to ensure effective performance

1. Initiate preventive measures to ensure proper working of equipment and machinery.

2. Follow maintenance schedule strictly.

3. Regularly check physical condition of equipment and machineries.

4. Maintain a record of production capacity of each and every equipment and machinery.

5. Communicate to the designated authority/ person/ staff about status of machinery and its production capacity.

6. Keep an alternative plan ready in case of breakdown in production process.

It is required to ensure optimum utilisation of machines and equipment to avoid financial loss during production by calculating the process time

Equipment and machines are used in every stages of pickling. Process stages for pickling can be divided into four categories:

- Shorting

- Cleaning

- Processing

- Packaging

7.2.7 Process Time in Bakery

Machines and manpower are required for the above mentioned stages hence calculation of process time for all stages will help to determine the production target on hour/ daily basis.

> **Example:**
>
> To calculate process time for effective utilisation, assume the following:
>
> First - Baker has got a job to produce 50 kg bread through production order. (For production of said quantity, baker needs to ensure sorting, cleaning, processing and packaging process. Each process will require time to complete, but proper management of process and manpower will ensure effective utilisation of machines and equipment.)
>
> Second – One hour will be required to carry out sorting for raw materials for 10 kg. Total number of hours required - 5 hours (assume 8 working hours in a day). (Capacity of sorting machine is 10 hours)

Third - 30 mins will be required to clean the sorted raw materials for 5 kg bread. For 50 kg, total number of hours required - 5 hours (assume 8 working hours in a day). (Capacity of cleaning machine is 10 hours)

Fourth – One hour will be required to carry out processing of sorted and cleaned raw materials to produce 50 kg bread. Total number of hours required - 10 hours to produce 50 kg bread. (Capacity of processing machine is 10 hours)

Fifth – One hour required to pack 10 kg processed bread in appropriate sizes. For 50 kg bread, total number of working hours required - 5 hours (assume 8 working hours in a day).

After considering the machines' capacity, working hours, deadline to meet the production target and quantity of product, baker should make a plan for production and determine the batch size of production.

UNIT 7.3 - Record Keeping

Unit Objectives ⦿

At the end of this unit, you will be able to:

1. Explain the necessity for record keeping or documentation

2. Identify various records maintained by a craft baker

7.3.1 Introduction

Introduction:

- Raw materials and ingredients are required to produce bakery items using machines.

- A craft baker will collect raw materials and ingredients from the store and the record of issue has to be maintained by a craft baker.

- Craft baker is also responsible for enhancing the productivity of the bakery; record of all the items produced during the day has to be maintained. This helps in monitoring productivity and plan for further expansion/business.

Necessity for documentation:

Documentation or record keeping helps in the following activities

- Production planning and control

    — Bakery items to be produced in a day/month/year

    — Requirement of raw material and ingredients based on the target

    — Consumption of raw materials and ingredients on daily basis

    — Establish packing requirement

    — Workforce planning / rotation

- Production monitoring - production Vs target

- Scheduling of preventive or periodical maintenance for machines

- Financial planning

    — Production cost monitoring

    — Investment plan to procure raw materials, ingredients and advanced machines

- Quality Monitoring and statutory compliance

    — Statutory compliance with respect to work area and equipment can be established with the help of records

    — Product rejection rate can be easily calculated based on the records and corrective actions can be planned

7.3.2 Documents

The below table lists some of the activities for which documentation may be required.

Activity	Document description
Issue and consumption of raw materials and ingredients	
Work area cleanliness and equipment maintenance	
Production and packing	
Personal hygiene	
Daily production activity	

Summary

A.   Importance of production order

- Project to meet daily sales and market demand.

- Estimate quantity of raw materials.

- Indicate requirement of skilled manpower in the bakery based on the demand.

- orders

B.   Post production order activities

- Check the availability of raw materials, packaging materials, equipment and manpower.

- Plan production sequence.

- Calculate batch size, requirement for raw material, packaging material and manpower for completing the order.

- Estimate machine/ equipment production capacity.

C.   Production sequencing

- Calculate product output requirements as per production order.

- Select quality raw materials for production.

- Calculate production time for every part of process to meet daily demand(s).

- Determine the start and end time for production on a day.

- Assign responsibility to support staff to meet demand(s).

- Prioritise production as per the urgency of an order.

D.   Ways to define batch size

- **Fixed quantity**:   Fixed quantity can be understood by the following example:Let's assume a production unit produces 100 kg bakery products in a day. So, the batch size is 100 kg or it can be divided (100 kg) in parts to form smaller batch sizes, like 20, 25, 50, etc.

- **Fixed time**: Fixed time can be understood by the following example: Let's assume a production unit produces 100 kg bakery products in 8 hours. So, the batch size for 8 hours is 100 kg or time can be divided to reduce the batch size, like batch of 25 in 2 hours, 50 in 4 hours, etc.

E.   Layers of packaging

- **First layer or Primary packaging:** It is seen at the point of sale. It needs to contain and protect food product(s) as well as display it and provide information.

- **Second layer or Secondary packaging:** It is the middle layer of packaging. For e.g., a cardboard box with a number of identical products inside.

- **Third layer or Transit packaging:** It is the outer container that allows easy handling during transit between factory, distribution centres and retailers.

Summary

F. Types of production process

Continuous Production	Batch Production
A mechanical process which runs continuous till production is complete	A process which is carried out step by step
Automatic machines are used	Semi-automatic machines are used
No manual labour is involved. Saves labour cost.	Manual labour is involved
Proofing is done in a flow as a part of production.	Proofing is done in groups of intervals.
Machine controls are set in the beginning of the entire production cycle.	Machine setting is required for each batch.
Biscuits, cookies, etc. are baked using this production process	Bread, cake, etc. are baked using this process

G. Steps to ensure effective performance of equipment

- Initiate preventive measures to ensure proper working of equipment and machinery.
- Follow maintenance schedule strictly.
- Regularly check physical condition of equipment and machineries.
- Maintain a record of production capacity of each and every equipment and machinery.
- Communicate to the designated authority/ person/ staff about status of machinery and its production capacity.
- Keep an alternative plan ready in case of breakdown in production process.

I. Record keeping in business activities

- Production planning and control
  - Production monitoring - production Vs target
  - Scheduling of preventive or periodical maintenance for machines
  - Financial planning
  - Quality monitoring and statutory compliance

Exercise

Q1. List the five steps involved in production sequencing.

Q2. Name the type of production from the description given below.

Description	Type of production
Saves labour cost.	
Biscuits, cookies, etc. are baked using this production process	
Manual labour is involved	
A process which is carried out step by step	
Proofing is done in groups of intervals	
Automatic machines are used	

Q3. List the three layers of packaging.

Exercise

Q4. Indicate whether the statements given below are true or false.

1.	Initiate preventive measures to ensure proper working of equipment and machinery. _____

2.	Maintenance schedule can be followed at irregular intervals. _____

3.	One needs to maintain a record of production capacity of only the machineries used. _____

4.	Other staff members don't have to be informed about the status of machinery. _____

5.	Breakdown in machinery stops the entire production process. _____

Q5. Name the stages involved in calculating the process time to determine production target.

Exercise

Q6. What are the two ways to define batch size? Describe them.

Q7. Fill in the blanks.

1. It is required to ensure optimum utilisation of machines and equipment to avoid
   _____ during production.

2. Before executing any production order, a baker must ensure that equipment is properly
   _____, _____ and _____ as per the checking
   schedule.

3. The requirement of raw materials for packaging always depends on the _____ of
   production and _____ of packet(s) as per the order.

4. Sector like bakery can't afford over production due to _____ of products.

Q8.What is record keeping system? Why is it important?

Exercise

Q9. Calculate the quantity of raw materials required for 100 kg bread as per the following recipe:

Recipe

Flour	1200 g
Salt	100 g
Sugar	270 g
Margarine	200 g
Water	300 ml/ g

8. Food Safety, Hygiene & Sanitation for Processing Food Products

Unit 8.1 – Basic Food Microbiology

Unit 8.2 – Storage of Materials

Unit 8.3 – Good Manufacturing Practices (GMP)

Unit 8.4 – Hazard Analysis and Critical Control Point (HACCP)

Unit 8.5 – Fire Safety

FIC/N9001

Key Learning Outcomes 💡

At the end of this module, you will be able to:

1. Define the term 'Food Microbiology'

2. State the factors that affect growth of microorganisms

3. Classify microorganisms

4. State food spoilage process

5. Classify food items based on spoilage

6. Choose the right kind of food preservative method based on the product

7. Identify 'Perishable' and 'Non-Perishable' ingredients and finished products

8. Explain FIFO and FEFO methods for storage of raw materials, ingredients and products

9. Follow storage procedures for ingredients and finished products

10. State the importance of good manufacturing practices

11. Apply good manufacturing practices in day-to-day work

12. State the principles of HACCP

13. Identify source of fire at workplace

14. interpret mechanism of fire

15. Choose the right type of fire extinguisher based on the source/ type of fire

16. Operate a fire extinguisher

17. Identify safety signs correctly

UNIT 8.1 - Basic Food Microbiology

Unit Objectives 🎯

At the end of this unit, you will be able to:

1. Define the term 'Food Microbiology'

2. Explain the factors that affect growth of microorganisms

3. Classify microorganisms

4. Explain food spoilage process

5. Classify food items based on spoilage

6. Choose the right kind of food preservative method based on the product

8.1.1 Introduction

Bakery products have limited shelf life because of proliferation of microorganisms during storage. While some microorganisms aid in the production of bakery items, there are some which spoil products during storage.

A number of techniques have been used to extend the shelf life of products, like adding preservatives, quality packing, freezing and pasteurisation.

It is important for a craft baker to know basic food microbiology to extend the shelf life of bakery products. **Food microbiology** is the study of microorganisms found in food products.

Factors that play an important role in proliferation of microorganisms are listed below:

- Temperature at which the product is stored

- pH of the product

- Moisture content of the product

- Type of microorganism already present in the product

- Initial contamination of the product

- pH value is an indicator of acidity or alkalinity.
- Acidity: pH value ranges from 0 to 6
- Neutral: pH value is 7
- Alkalinity: pH value ranges from 8 to 14

8.1.2 Classification of Microorganisms

Microorganisms are broadly classified as 'good' and 'harmful'. Good microorganisms help in bakery item production and harmful ones spoil the food.

The table below explains use of good microorganisms:

Yeast	• Yeast acts as rising or leavening agent.
Fig. 8.1 Yeast	• Common yeast used in baking is called *Saccharomyces cerevisiae.* • Yeast feeds on the sugar present in dough and release carbon di oxide gas (CO_2), making the dough to expand. • This process is called as 'Fermentation'.
Probiotics *Fig. 8.2 Yogurt with probiotics*	• Probiotics are good bacteria used in the production of cheese and yogurt. • Bacteria culture converts sugar lactose into lactic acid. • The taste and texture of the final product depends on the growth of bacteria culture.

8.1.3 Food Spoilage

Food spoilage is the process in which food deteriorates to the point where it becomes inedible for human consumption or its quality of edibility reduces.

The main cause for food spoilage is the presence of contaminants. These contaminants can be broadly classified as:
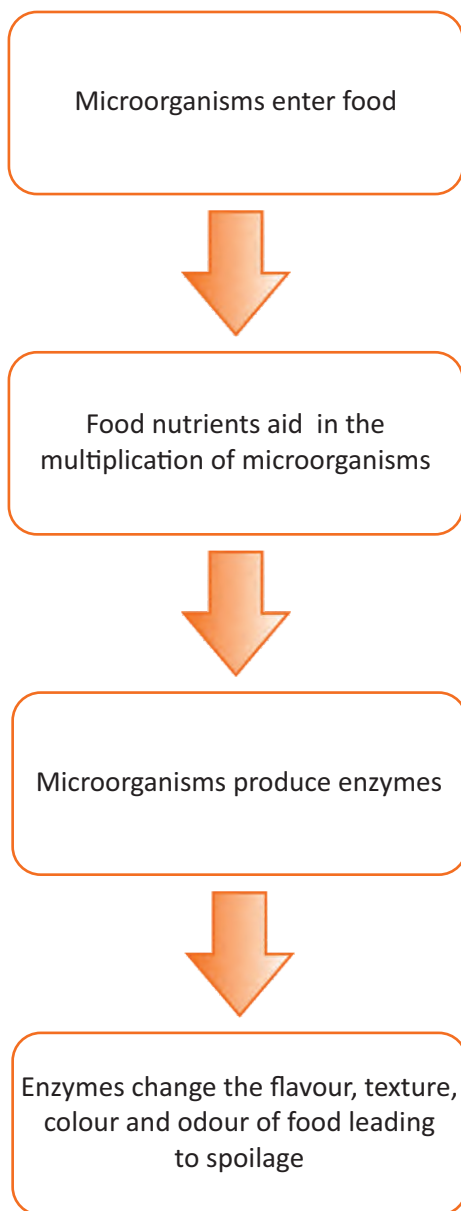
Microbial: Bacteria, mould, yeast, virus are examples of microbial contaminants.

Biological: Biological contaminants includes hair, excreta, bone, splinters, etc.

Chemical: Pesticide residues, detergents, etc. are examples of chemical contaminants.

Food spoilage process

The given picture depicts the process of food spoilage:

```
┌─────────────────────────────────┐
│   Microorganisms enter food     │
└─────────────────────────────────┘
              ↓
┌─────────────────────────────────┐
│   Food nutrients aid  in the    │
│ multiplication of microorganisms│
└─────────────────────────────────┘
              ↓
┌─────────────────────────────────┐
│ Microorganisms produce enzymes  │
└─────────────────────────────────┘
              ↓
┌─────────────────────────────────┐
│ Enzymes change the flavour,     │
│ texture, colour and odour of    │
│ food leading to spoilage        │
└─────────────────────────────────┘
```

Fig. 8.3 Food spoilage process

Classification of food based on spoilage

Based on spoilage, food items can be classified as:

- **Perishable:** Food items which decay faster are called **Perishable**. These have a limited shelf life. For e.g., milk, butter, etc.

- **Semi Perishable:** Food items that perish with a proper storing method. For e.g., potato, onion, etc.

- **Non-perishable:** Food items that can be stored for a long duration. For e.g., sugar.

Methods to detect food spoilage

Spoiled food can be detected by:

- Odour
- Texture
- Shape/form
- Flavour
- Colour

Fig. 8.4 Methods to detect food spoilage

Food preservation methods

Preservation methods are used to extend the shelf life of perishable food items. The main objective is to remove microorganisms or hinder proliferation of microorganisms present in food items. Care should be taken to keep microorganisms out of food by sterilising the equipment and sealing products in wrapping materials during production process.

The table below explains various food preservation methods:

Heat	• Heat is used to kill microorganisms present in food items.
	• The temperature during the process is determined by the microbial load and type of microorganism.
	• Heating food at about 62^0 C for 30 minutes or 72^0C for 15 minutes is called **pasteurisation.**
	• Liquid food items are boiled before transferring to containers. This process is called **hot filling.**
	• Exposure to hot water under pressure for a short period to deactivate enzymes in food is called **steam treatment.**
Freezing	• Low temperatures are used to preserve food by lowering microbial activity.
	• Freezing reduces number of microorganisms in food items.

	• Freezing does not kill all microorganisms.
Chemical	• Many kinds of chemicals, like propionic acid, sorbic acid, benzoic acid and sulphur di oxide are added to food items to hinder microorganism growth.
Drying	• Drying also kills microorganisms present in food items. • Keeping food in the sun evaporates the moisture content from it.
Radiations	• Ultraviolet radiation is used to eliminate surface contamination. • Gamma rays are used to preserve vegetables, fruits and spices. • Short wave length radiations are used in meat processing.

UNIT 8.2 - Storage of Materials

Unit Objectives 🎯

At the end of this unit, you will be able to:

1. Identify 'Perishable' and 'Non-Perishable' ingredients and finished products

2. Explain FIFO and FEFO methods for storage of raw materials, ingredients and products

3. Follow storage procedures for ingredients and finished products

8.2.1 Storage of Ingredients

Raw materials and ingredients should be properly stored and utilized as per instructions to extend the shelf life of perishable ingredients and to avoid contamination.

Standard practices

- Standard rotation methods such as, FIFO (First-In, First Out) and FEFO (First-Expired, First-Out) are followed for perishable ingredients.

- All baking ingredients should be properly labelled.

- Coolers should be set at a specified temperature.

- Hazardous items should be in the refrigerator and never be stored at room temperature.

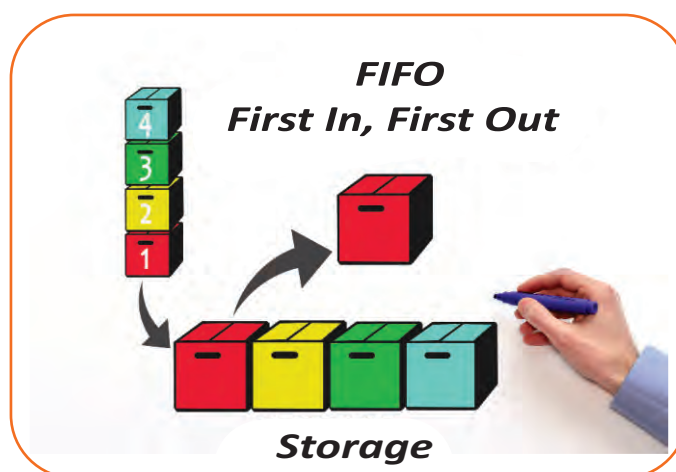- Cover dustbins and garbage to avoid rodents and pests.

Fig. 8.5 FIFO method

The table given below explains storage procedures for various ingredients:

All-purpose flour	• Store in airtight containers or freezer bags to avoid contamination.
	• Containers should be properly labelled with expiration date (one year from the date of manufacturing).

Sugar	• Store granulated and confectioner's sugar in airtight container in cool and dry place, away from moisture. • If exposed to moisture, sugar can develop clumps. • Keep away from spices and pungent smelling food. Sugar will absorb scent from other foods.
Brown sugar	• Moisture content in brown sugar is much more than granulated sugar. • Extra care should be taken to avoid exposure to moisture. • Keep brown sugar in airtight containers. • Best way is to store in freezer for long hours.
Baking soda	• Store in cool and dry place with lid closed. • Baking soda can be stored up to a year.
Baking powder	• Store in cool and dry place with lid closed.
Yeast	• Keep in cool and dark place. • Check for expiration date. • If there is temperature or humidity fluctuation, store in refrigerator. • It is recommended to use yeast cake within ten days.
Extracts	• Store liquid extracts such as, vanilla in a cool and dark place. • Don't store vanilla in refrigerator or freezer. • Avoid storing liquid extracts near heat source.
Spices	• Store spices in a dark place at room temperature.
Chocolate	• Store baking chocolate in a cool and dry place tightly wrapped. • Never refrigerate or freeze.

8.2.2 Storage of Finished Products

It is important to store finished products as per standard guidelines till the final product reaches the end user. Methods such as FIFO (First-In, First-Out) and FEFO (First-Expired, First-Out) should be used to store products.

Perishable ingredients such as, cream, cheese, eggs, etc. should be stored in refrigerators. Products having long shelf life may be stored at room temperature. Ensure that all finished products are labelled properly and details of ingredients and shelf life is mentioned on the label.

UNIT 8.3 - Goods Manufacturing Practices (GMP)

Unit Objectives 🎯

At the end of this unit, you will be able to:

1. Explain the importance of good manufacturing practices

2. Apply good manufacturing practices in day-to-day work

8.3.1 Introduction

As described in the previous unit, it is the prime responsibility of a food manufacturer to provide hygienic food to the customers. A food manufacturer must comply with statutory and regulatory norms prescribed by authorities.

Good Manufacturing Practices (GMP) is a set of guidelines proposed by the Food Safety Standards Authority of India (FSSAI), aiming to provide high quality and safe processed foods. All employees working in food production units should be aware of GMP.

Maintenance · Personal hygiene · Approved supplier program · Control of foreign materials · Labelling · Calibration · Packaging · Control of chemicals · Receieval & storage · Premise · Cleaning · Recall · Corrective action · Traceability · **GMP – HACCP** · Training · Specifications · Control of non-conforming product · Dispatch & transport · Control of water, ice, air and other gases · Allergen management program · Waste management · Pest management

Fig. 8.6 Goods manufacturing practice

GMP: focus area

The focus area of GMP is personal hygiene, process adherence, equipment maintenance and cleanliness of the work area.
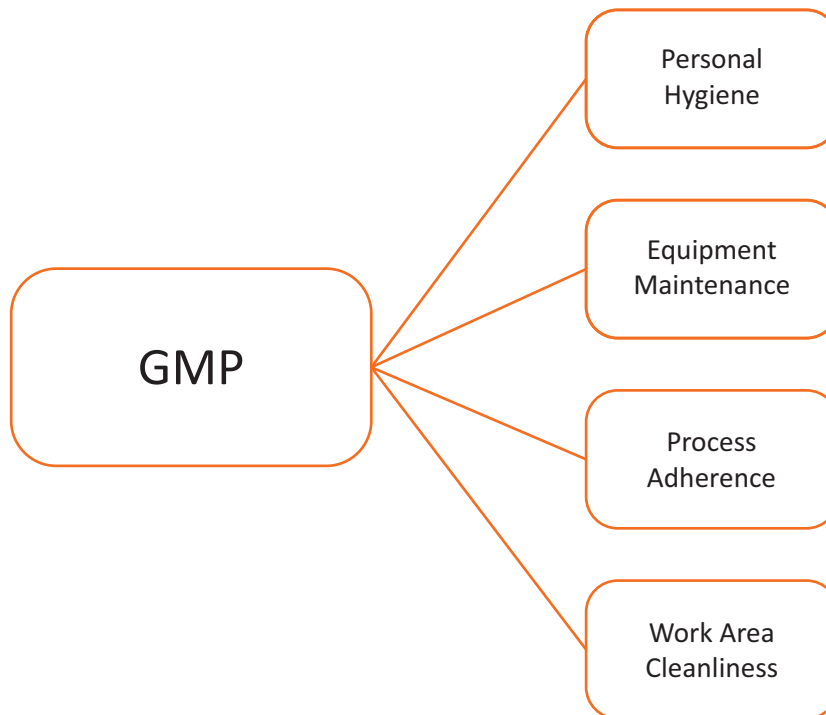

Fig. 8.7 GMP focus area

The table below lists the details of GMP's focus areas:

Personal hygiene	• Wear suitable and clean protective clothing, head covering, face mask, gloves and footwear. • Wash hands with soap and clean potable water, disinfect hands, dry with hand drier or clean towel or cloth. • Refrain from smoking, spitting, chewing, sneezing or coughing or sneezing over any food protected or unprotected. • Trim nails and hair periodically.
Equipment maintenance	• Follow equipment cleaning as per schedule – daily, weekly or monthly. • Any equipment in contact with food should be kept clean and in good working condition. • Chipped enamelled containers should not be used. • Stainless steel/ aluminium suitable for cooking should be used.

	• Equipment used in food processing should be protected against contamination from lubricants, metal fragments, fuel and contaminated water.
Process adherence	• All raw materials and ingredients should confirm to regulations and standards.
	• All raw materials should be physically checked at regular intervals.
	• Packaged raw materials must be checked for 'expiry date/ best before/ use by' date packaging integrity and storage conditions.
	• Storage norms to be followed to avoid contamination during storage.
	• Containers made of non-toxic materials should be used for storage.
	• There should be provision of cold storage facility as per the need.
	• Stock rotation system such as FIFO/ FEFO should be followed for ingredients and finished products.
Work area cleanliness	• Work area should be clean and pollution free throughout the production process.
	• Follow the Standard Operating Procedure (SOP).
	• Production area should be well ventilated with adequate lighting.
	• All the equipment should be stored at the designated location.

Fig. 8.8 Work area cleaning

UNIT 8.4 - Hazard Analysis and Critical Control Point (HACCP)

Unit Objectives 🎯

At the end of this unit, you will be able to:

1. Explain the importance HACCP tool used to control hazards

2. Explain the principles of HACCP

8.4.1 Introduction

Hazard Analysis and Critical Control Point (HACCP) is an internationally recognized system for reducing risk of hazards in food items. HACCP helps in identification and control of hazards at critical points in the production process.

8.4.2 Principles of HACCP

HACCP is based on seven principles, and parameters are established at each and every critical point in the production process.

Fig. 8.9 Hazard analysis and critical control point

Building HACCP programme.

Conduct a Hazard Analysis
- Identify hazards
- Evaluate hazards (degree of risks)

Establish Record Keeping Procedures
- State records to be maintained
- Address regulatory requirements

Establish Verification Procedures
- Test the end product and verify that controls are met
- Perform on going evaluation of the process

Identify Critical Control Points
- Identify critical control points in the system prone to hazards
- Identify preventive measures to control risks

Establish Corrective Actions
- State actions to be taken if the critical limits are not met
- Evaluate process (cause and remedial actions)

Establish Maximum/Minimum Limits
- Identify critical parameters (temperature, time, pH, salt, level, cholorine level etc.)
- Define limits

Establish Monitoring Methods
- List parameter to be measured at each stage
- State the frequency for measurement

Fig. 8.10 HACCP program implementation

UNIT 8.5 - Fire Safety

Unit Objectives 🎯

At the end of this unit, you will be able to:

1. Identify source of fire at workplace
2. Explain mechanism of fire
3. Choose the right type of fire extinguisher based on the source/ type of fire
4. Operate a fire extinguisher
5. Identify safety signs correctly

8.5.1 Sources of Fire

A craft baker works with a lot of heat-generating equipment. Due to a fault in the equipment or inflammable material close to the heat or fire source, an unwanted fire incident can take place and cause a lot of damage to lives, materials and equipment. Hence, all craft bakers must know basic fire safety

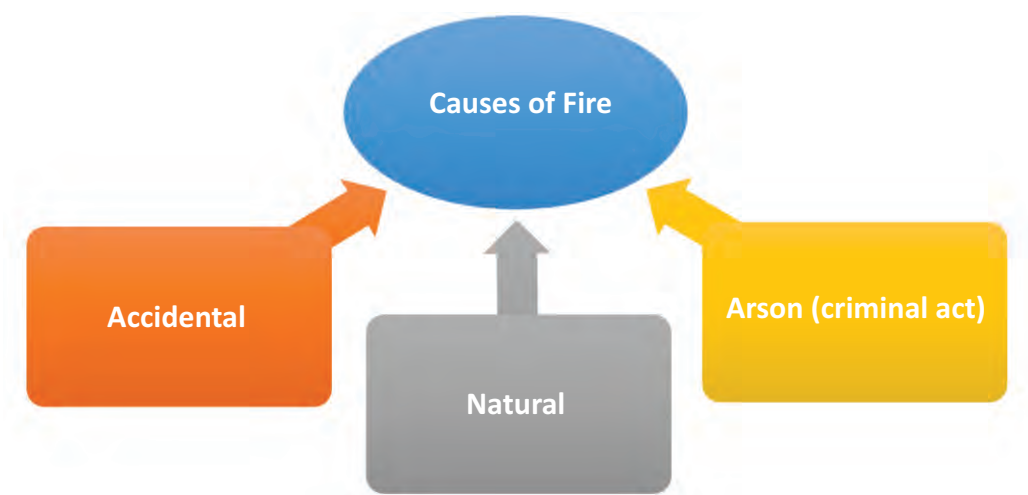*Fig. 8.11 Fire accident*

Causes of fire:.

Fig. 8.12 Sources of fire

Sources of fire

- **Sparks** (short circuit in machinery, etc.)
- **Flames** (open fires, oxy-acetylene, torch, heating boilers, etc.)
- **Hot surfaces** (machinery, overheating, friction, etc.)
- **Radiant heat** (electric fire, open fire, etc.)

Triangle of fire

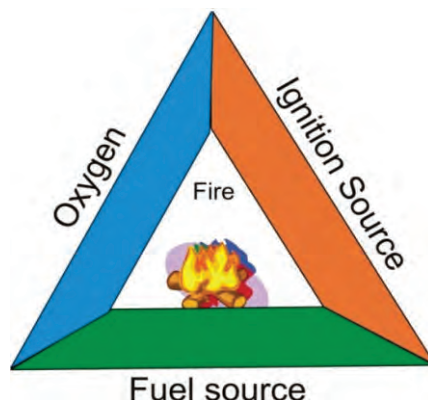There are three elements which ignite fire – fuel, oxygen and heat.

Fig. 8.13 Triangle of fire

The principles of extinguishing require removal of at least one element from the fire triangle.

8.5.2 Fire Extinguisher

Types of fire and extinguishers

CLASS	SYMBOL	TYPE
		Class A fire involves solid materials of an organic nature that don't melt such as, wood, paper, cloth, rubber and plastics.
		Class B fire involves liquids. These include petrol, diesel, thinners, oils, paints, wax, cooking fat and plastics that melt.
		Class C fire involves electricity.
	No symbol	**Class D** fires involve flammable metals such as magnesium, aluminum, titanium, sodium and potassium.

Fig. 8.14 Types of fire

There are four main types of fire extinguishers used for fighting fire:

Type of Extinguisher	Colour of Flash
Water	Red
Foam	Cream
Carbon Dioxide	Black
Powder	Blue

Here is what they look like:

Fig. 8.15 Types of fire extinguisher

Some other materials to fight fire:

Water	• Depending on the type of fire, water can be used, if appropriate. • **Never** use water if there is a slightest chance that the power may still be ON. • **Never** use water on burning liquids as it will spread the liquid and fire.
Sand or dry soil	• Works well on small fire. • Should not be used on burning liquids as it will spread them around.
Fire blankets	• Effective for small fire.

Procedure to operate a fire extinguisher:
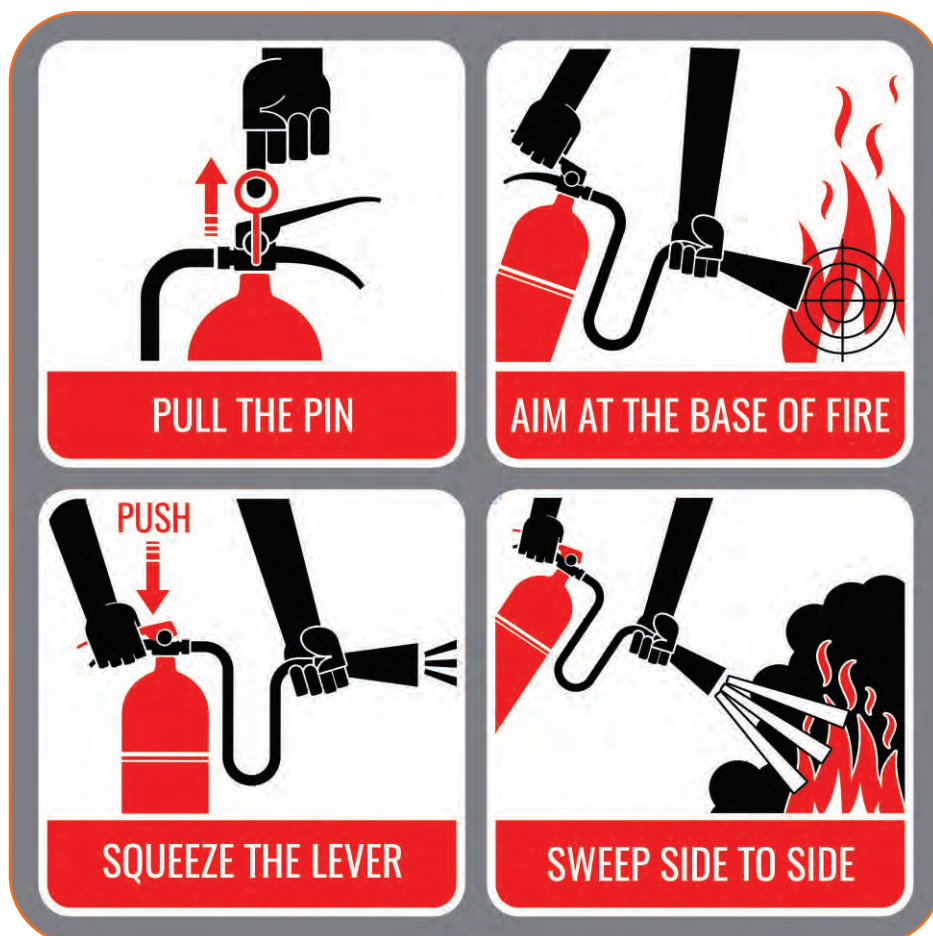
Fig. 8.16 PASS method to extinguish fire

Useful safety signs:

Fig. 8.17 Fire safety signs

Summary

A. Factors that play an important role in proliferation of microorganisms

- Temperature at which the product is stored

- pH of the product

- Moisture content of the product

- Type of microorganism already present in the product

- Initial contamination of the product

B. Food spoilage process

| Microorganisms enter food | → | Food nutrients aid in the multiplication of microorganisms | → | Microorganisms produce enzymes | → | Enzymes change the flavour, texture, colour and odour of food leading to spoilage |

C. Food preservation methods

Heat
Freezing
Chemical
Drying
Radiations

D. Focus areas of Good Manufacturing Practices

Personal hygiene
Equipment maintenance
Process adherence
Work area cleanliness

Summary

E.   Principles of HACCP

F.   Types of fire and

CLASS	SYMBOL	TYPE
A		**Class A** fire involves solid materials of an organic nature that don't melt such as, wood, paper, cloth, rubber and plastics.
B		**Class B** fire involves liquids. These include petrol, diesel, thinners, oils, paints, wax, cooking fat and plastics that melt.
C		**Class C** fire involves electricity.
D	No symbol	**Class D** fires involve flammable metals such as magnesium, aluminum, titanium, sodium and potassium.

Exercise

Q1. Describe the food spoilage process.

Q2. Fill in the blanks.

1. _____ is used to kill microorganisms present in food items.

2. Exposure to hot water under pressure for a short period to deactivate enzymes in food is called _____.

3. Keeping food in the sun _____ the moisture content from it.

_____ radiation is used to eliminate surface contamination.

Q3. Match the following:

1	All-purpose flour	Can be stored up to a year.	☐
2	Sugar	Never refrigerate or freeze.	☐
3	Baking powder	Store spices in a dark place at room temperature.	☐
4	Yeast	Avoid storing near heat source.	☐
5	Extracts	Recommended to use within ten days.	☐
6	Spices	Store in cool and dry place with lid closed.	☐
7	Chocolate	If exposed to moisture, sugar can develop clumps.	☐
8	Baking soda	Store in airtight containers or freezer bags to avoid contamination.	☐

Exercise

Q4. List any two functions under each of GMP's focus area.
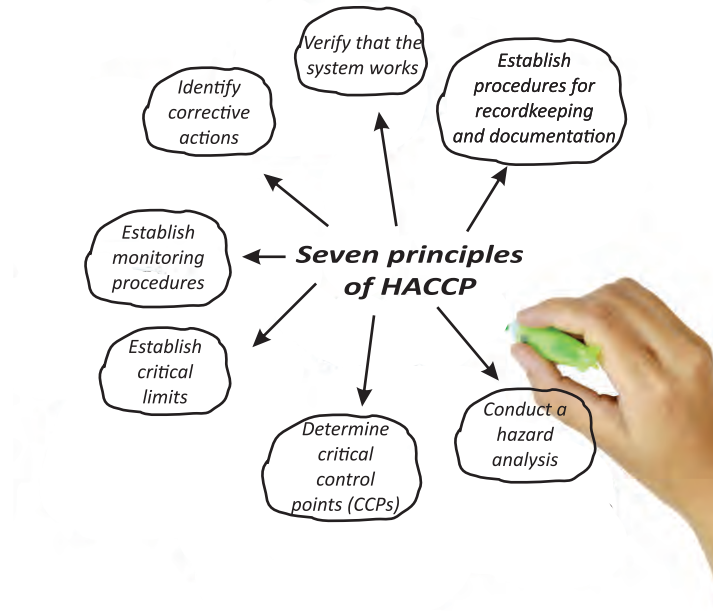
Personal hygiene	Equipment maintenance	Process adherence	Work area cleanliness

Q5. What does each type of fire involve? Mention in the table below.

CLASS	SYMBOL	TYPE
A		
B		
C		
D	No symbol	

Exercise

Q6. What is the procedure to operate a fire extinguisher?

Q7. List any three sources of fire.

1.
2.
3.

Q8. List the seven principles of HACCP

9. Working Effectively with Others

FIC/N9001

Key Learning Outcomes 💡

At the end of this module, you will be able to:

1. Demonstrate qualities of a good team player

2. Define 4Cs of working in a team

3. Apply effective communication techniques in various situations and contexts

4. State and overcome barriers for effective communication

5. Apply principles of active listening in your communication

6. Demonstrate customer service skills

7. Adapt behaviour to different types of customers to contribute towards customer satisfaction

8. Use various conflict resolution techniques with an aim to resolve disputes with customers/colleagues

9. State the importance of ethical behaviour in your day-to-day work

10. State the importance of discipline in your life, and apply the same in the workplace

11. List different types of vendors and vending arrangements

12. List positive vendor management practices

13. Identify various clauses of vendor contracts

UNIT 9.1 - Introduction

Unit Objectives 🎯

At the end of this unit, you will be able to:

1. Demonstrate qualities of a good team player
2. Explain 4Cs of working in a team

9.1.1 Introduction

To work effectively, one needs to develop qualities and habits over and above the skills and expertise to do the job, like:

- Teamwork
- Good communication skills
- Customer orientation
- Ethics and Integrity
- Discipline

These qualities are key to success, and more often people with these qualities rise higher in life than those who do not. Craft bakers at work are likely to meet different types of people. Hence, it is important that they know how to conduct themselves in all types of situations, and should be able to effectively communicate with a wide variety of audiences.

Good communication skills are needed to understand and deliver appropriate information and fulfil the requirement of the client. Poor communicators may end up confusing customers, conveying wrong messages to customers or fellow workers.

Good communication is an essential part of everyday life, both at personal and professional level. Craft baker requires to make frequent interpersonal interactions with suppliers, cutomers, fellow workers and others. A great set of customer service skills can improve a craft baker's performance on the job in a variety of ways. Such people are well appreciated by customers, and get more business. Ethics and Integrity are the most important qualities one can have. It is an inner guideline that tells the person how to react positively to the outside world.

9.1.2 Teamwork

Working with others:

Teamwork is very important in every profession. People at every level and profession need to come together and perform tasks in co-operation with other people at some stage of their professional life.

A craft baker is likely to meet a wide range of people in his profession, for e.g., customers, sales personnel, suppliers, fellow bakers and co-workers and contractors. Hence, it is important that they know how to conduct themselves in every situation, and should be able to communicate clearly with other people.

Success of an organization or group of people working together is critically dependent on every member of the team participating effectively to achieve common goals. This will improve the performance of the team to exceed the sum total of what each individual can do on their own. This is called Teamwork.

To be an efficient craft baker one should not only possess technical skills, but also interpersonal skills for delivering the desired results to the satisfaction of customers. A craft baker has to work as part of a team to produce and sometime market bakery goods prepared by them and their organization.

Fig. 9.1 Team work in a bakery

The 4Cs of working in a team:

Common Goal

Collaboration

Communication

Co-ordination

Fig. 9.2 Working in teams

Common goal

Being aware that each member is working for the benefit of the whole group, even if their roles are different is the most important part of teamwork. Once one is aware of this, then he/she will realize that one cannot get own work done at the expense of others, and should neither allow own work to suffer, while helping others.

How to ensure common goal?

- Each member of the team should clarify to himself/herself about the common goal that the whole team is trying to achieve. The reason why everyone has come together, e.g. to get the work done, etc.

- Each Individual team member should refer to the common goal whenever in doubt or conflict or when they have to take a decision.

Collaboration

Finding win-win solution. Understanding even when in conflict, it is possible that both parties are standing for something that is important for the overall good. Hence, both should talk it out and explore options such that both parties are satisfied.

How to ensure collaboration?

- By realizing that no matter what is the job at hand, it cannot be done alone. One always needs co-operation. Hence it is very important to develop positive relationships with whomever one is working with.

- One should try to understand the other person's point of view as well as explain his or her own perspective clearly and without being defensive. This can only happen if one believes that it will be possible to satisfy both.

- Consult with and assist others to maximize effectiveness and efficiency in carrying out tasks

- Whenever, there is conflict one should treat it like problem solving, and try to think creatively for a solution where both the parties can get the desired results. Remember, if one tries hard enough, no problem is without a solution.

Co-ordination

Co-ordination means consulting with and assisting others to maximize effectiveness and efficiency in carrying out tasks. It means ensuring that information and assistance is provided and received efficiently and effectively.

How to ensure coordination?

- When working in teams it helps to build rules and norms for smooth functioning and to share them with all.

- These rules and norms are documented in the form of Manuals, Standard Operating Procedures etc.

- All team members should familiarize themselves with these rules and norms as well as the reasons behind them and then follow them sincerely

- However, for smooth co-ordination, sometimes it may be required to take exceptions, or change the rule or make new rules; hence no–one should become too rigid or follow the rules blindly, but should use logic and consult with superiors when in doubt.

Communication

Communication is critical for working with others. It a good way to make the goal of the team clearer, to improve the understanding among all the members and to smooth up the cooperation in every day's work.It is also important in a work environment to communicate in a manner that is professional and polite. One should speak to each other with respect, using appropriate title and terms of respect.

- Address the guest as Sir/ Madam.

- Use, 'Dear Mr.<Surname>' in written communications.

- Never distort names or use abusive language, even when talking to peers and juniors.

- Do not eat or chew while talking (vice versa), etc.

How to ensure communication?

- Give information to others clearly, at a pace and in a manner that helps them to understand.

- Accurately pass on information to authorized persons who require it and within agreed timescales.

- A regular meeting is good, for sharing opinions or putting comments on the malfunctions of the whole team.

- Personal attacks should be avoided. Business is business.

Some important aspects of teamwork:

- Display helpful behaviour by assisting others in performing tasks.

- Have consideration for others and discomfort caused to them due to poor time keeping and absenteeism by oneself.

- Possess good listening skills and pay attention to instruction, and what others are saying.

- Discuss problems and complaints with patience to avoid any conflicts.

- Keep personal and professional life separate.

- Cooperate with respect to changes on site, in schedules or work style.

- Recognise the strengths and weaknesses of others and assist wherever required.

- Don't overburden colleagues and teammates with your share of duties and responsibilities.

- Be honest with fellow team members.

- Assist in times of dangers and risks irrespective of any personal differences.

- Understand the job and expectations of other people.

- Teamwork involves compromise and co-operation.

- Do not hesitate to observe or question, if required.

- Behave professionally at work.

UNIT 9.2 - Effective Communication

Unit Objectives 🎯

At the end of this unit, you will be able to:

1. Apply effective communication techniques in various situations and contexts

2. State and overcome barriers for effective communication

3. Apply principles of active listening in your communication

9.2.1 Introduction

Good communication skills are required not only between fellow bakers and customers, but also with supervisors, other craft workers and vendors for effective and quality work.

A great deal of craft baker's work involves communication and problem solving.

A craft baker should know how to communicate effectively. He/ she should also know basic English, which is used in almost all organisations or situations. While some of them will already know basic English like numbers, alphabets, days of the week, months, common greeting/ salutation(s) and words and phrases used in everyday interaction, there will be some who are not comfortable using the same. However each individual should be aware of the need to learn the same.

Fig. 9.3 Baker communicating with colleagues in a pleasant manner

Poor communication can lead to disputes and disagreements on the job and conveying wrong messages.

Ability to communicate effectively with customers and fellow workers is as important in the industry as technical skills.

Communication is the activity of conveying meaningful information. Communication requires a sender, a message and an intended recipient, although the receiver need not be present or be aware of the sender's intent to communicate at the time of communication. Thus, communication can occur across vast distances in time and space. The communication process is complete once the receiver has understood the sender.

Types of communication:

- Verbal
- Written
- Body Langauge

Communication skills simply do not refer to the way in which we communicate with another person. It includes other aspects, like:

- The way we respond to the person we are speaking to
- Face and body gestures
- Pitch and tone of our voice

9.2.2 Communication Process

Communication is the process of exchanging verbal and non-verbal messages. It is a continuous process.
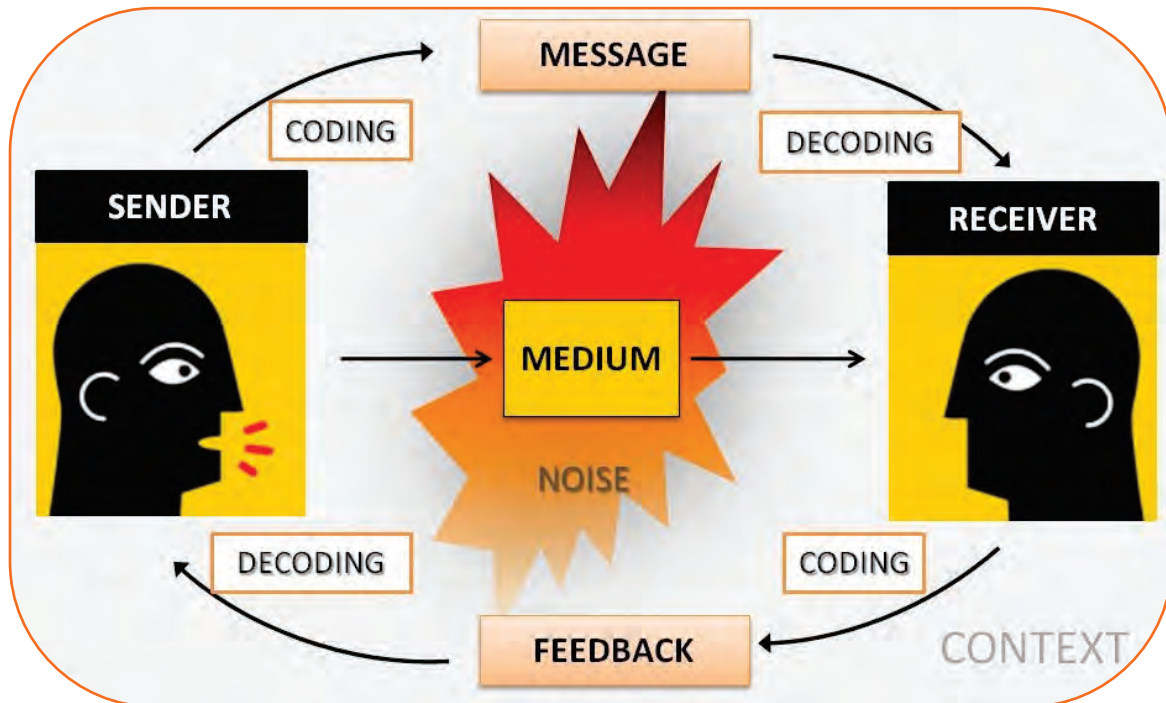
Fig. 9.4 Communication process

9.2.3 Barriers to Effective Communication

It is critical to understand and be aware of the communication barriers. One should constantly avoid these barriers by making a conscious effort to make sure there is a minimal loss of meaning in the communication.

The following will suggest a number of barriers to effective communication at work:

- Choosing inappropriate words or language.
- Misunderstanding or misinterpreting body language, tone and other non-verbal forms of communication.
- Ignoring non-verbal language.
- Selective hearing.
- Hesitation to be honest.
- Distrust.
- Value judgment.
- Power struggles.
- Unreliable transmission (due to noise or inconsistent transmission of messages).
- Defensiveness (a typical barrier in a work situation, especially when negative information or criticism is involved).

Fig. 9.5 Barrier to effective communication

- Distorted perception (how we perceive communication is affected by experiences. Perception is also affected by the organizational relationship between any two people. For example, communication from a superior may be perceived differently than from a subordinate or peer).

- Guilt.

- Distortions from the past.

- Stereotyping (assuming the other person has certain characteristics based on the group to which they belong without validating that they in fact have these characteristics).

- Cultural differences (effective communication requires deciphering basic values, motives, aspirations and assumptions that operate across geographical lines. Given some dramatic differences across cultures, the opportunities for miscommunication in cross-cultural situations are enormous).

9.2.4 Active Listening

Three false assumptions that people tend to develop:

- I listen WELL.

- I CANNOT BE taught to listen better.

- Listening and hearing is the SAME thing.

Listening involves

Hearing and Seeing   Understanding

LISTENING

Retaining   Recalling
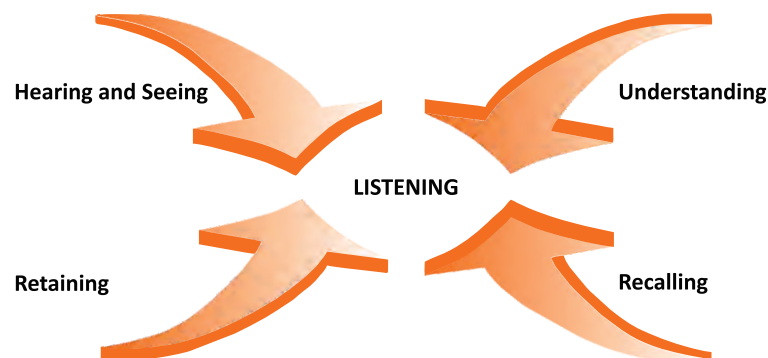
Fig. 9.6 Listening strategies

How to become a good listener?

The following are some suggestions for becoming a better listener:

- **Do not interrupt -** To become an effective listener, wait until the speaker is finished before providing feedback or expressing opinion. People have a tendency to become impatient while listening and cannot wait for the speaker to finish. Not only is this rude, but it will drastically limit the information exchange and damage the communication process.

- **Do not jump to conclusions -** Do not assume that the person know what the speaker is going to say. People can process information faster than one can speak. For this reason, one might start formulating a response before receiving all the necessary information. This can lead to confusion and poor response on behalf of the listener.

- **Do not judge the speaker -** Do not allow ones opinion of the speaker to interfere with the message being received. The speaker's accent, speed of delivery (talks too fast or too slow), appearance, and age are just a few factors that can create bias and limit effective listening. Concentrate on the content of the message, not on the speaker.

- **Take notes to hold interest -** Not only is taking notes a good way of retaining information for a later time, but it also helps the listener maintain interest, shows the speaker that you are paying attention, and helps eliminate distractions.

- **Ask questions -** Asking good questions, paraphrasing, and providing feedback are essential to good listening. This will help one listen more carefully and will also strengthen the relationship between the speaker and the listener. Good listeners play an active role in the communication process including head nodding, eye contact, and asking questions.

Some rewards for becoming a good listener include:

- Expansion of knowledge.
- Vocabulary development and language development.
- Ability to evaluate messages.
- Saving time.

This will also help in the areas of public relations, investigations, and crisis/emergency management situations.

By using these listening suggestions, practicing them, and putting them into action, the craft baker is able to understand guest's requirement better and deliver accordingly. Even he is better off in maintaining good relations with co-workers and receiving their experienced advice or help during the performance of his work.

9.2.5 Assertive Communication

Assertive communication is the ability to express positive and negative ideas and feelings in an open, honest and direct way. It recognises our rights whilst respecting the rights of others. It allows us to take responsibility for our actions without judging or blaming other people and for us to constructively confront and find a mutually satisfying solution in a conflict.

Advantages of assertive communication

There are many advantages of assertive communication, most notably these:

- Helps us feel good about others and ourselves.
- Develops mutual respect with others.
- Increases our self-esteem.
- Helps us achieve our goals.
- Minimizes hurting and alienating other people.
- Reduces anxiety.
- Protects us from being taken advantage of by others.
- Enables us to make decisions and free choices in life.
- Enables us to express, both verbally and non-verbally, a wide range of feelings and thoughts, both positive and negative.

Characteristics of assertive communication

There are six main characteristics of assertive communication. These are:

- **Eye contact -** demonstrates interest, shows sincerity.

- **Body posture -** congruent body language will improve the significance of the message.

- **Gestures -** appropriate gestures help to add emphasis.

- **Voice -** a level, well-modulated tone is more convincing and acceptable, and is not intimidating.

- **Timing -** use own judgment to maximize receptivity and impact.

- **Content -** how, where and when one choose to comment is probably more important than WHAT he/she say.

Assertive techniques

There are six assertive techniques - let's look at each of them:

- A very useful technique when one wants to talk about a sensitive subject, is **to rehearse what one wants to say to oneself.** It helps dissipate any emotion associated with an experience and allows to accurately identifying the behaviour one wishes to confront.

- Another technique that allows the person to feel comfortable is to ignore manipulative talks, argumentative baiting and irrelevant logic while sticking to his/her point. To use this technique most effectively one should use **calm repetition, and say what he/she wants to say and stay focused on the issue.** There is no need to rehearse this technique, and no need to 'hype oneself up' to deal with others.

- This technique allows the person to receive criticism comfortably, without getting anxious or defensive, and without rewarding manipulative criticism. To do this one needs to **acknowledge the criticism, agree that there may be some truth to what they say, but still choose to do what feels right.**

- This technique seeks out one's own criticism in close relationships by prompting the expression of honest, negative feelings to improve communication. To use effectively one need to **listen for critical comments, clarify the understanding of those criticisms, use the information** if it will be helpful or ignore the information if it is manipulative.

- This technique lets one look more comfortably at negatives in his/her own behaviour or personality without feeling defensive or anxious. This also reduces the critics' hostility. The person **should accept his/her errors or faults, but no need to say sorry**. An example would be, "Perhaps you're right. I don't always listen closely to what you have to say. I will try from now onwards"

- When one feels that his/her self-respect is not in question, consider a workable compromise with the other person. One can bargain for the material goals unless the compromise affects the personal feelings of self-respect. However, if the end goal involves a matter of one's self-worth and self-respect, THERE CAN BE NO COMPROMISE. An example of this technique would be, "I understand that you have a need to talk and I need to finish what I'm doing. So what about meeting in half an hour?"

UNIT 9.3 - Customer Service

Unit Objectives ◎

At the end of this unit, you will be able to:

1. Adapt behaviour to different types of customers to contribute towards customer satisfaction

2. Use various conflict resolution techniques with an aim to resolve disputes with customers/ colleagues

9.3.1 Introduction

Bakery is a part of the Food Processing industry where the products may be sold to retail customers or distributors. Communication is required to deal with customers, retail or distributors and own team members and suppliers. A great set of interpersonal interaction and customer service skills can improve the performance on job in a variety of ways.

Success of the organization and the Craft Baker is critically dependent on how well the Baker comprehends the requirement of the customer, assimilates the information from the supervisor or fellow workers and applies his/her technical skills to accomplish the task.

Their focus must be to listen to the requirement or problem of the customer, provide him/her with best alternatives or solutions and then start the work, keeping the customer's convenience and priorities in mind.

Fig. 9.7 Baker serving customer with a takeaway order

Once the work is in accordance with the customer's requirements and to their satisfaction, the Craft Baker will get repeat business. The customer also talks good about such workers to others and refers them to family and friends. This builds a good reputation for the person as well as the organisation, which is very important in this field.

9.3.2 Principles of Good Customer Service

Expected behaviour for effective dealing with customer:

- The primary reason of success for any organization/individual is service to its customers. **Customer satisfaction and loyalty is critical for the success** of any organization.

- Whatever perception the customer forms about the organization/individual, is a reality to them and they talk about it to others. Hence it is important for **each individual to project a good image at all times**.

- Service to customers is based not just on systems, processes and procedures but also **on personal effort and creativity of those who serve.**

- **Serve every customer as you would serve the person you most love.** Ensure they are comfortable, safe and well looked after.

- **Ask what the customer needs and then listen.**

- **Seek always to do it right the first time;** if this is not done, then do it right the second time.

- If a customer has had a bad experience and complains, **treat this complaint as an opportunity to win him/her back.**

- For successful completion of the task or contract, **effective dealing** with customer/client is essential.

Greeting the customer:

- Greeting is an expression that creates a first impression on the customer. The customer will react with trust or distrust depending upon the first impression they get of the service.

- The greeting should convey to the customer, we are happy to help you

- An appropriate greeting would be:- "Good morning! How can I help you?"

- A friendly greeting immediately disarms the person and sets them at ease to discuss their problem.

- Every person "MUST" be greeted in a friendly way, be it a new customer, old customer or regular vendors.

Identify and understand customer's expectations:

A customer may not know the exact product they want and available alternatives. In that situation understanding the customer's need by listening to him patiently, asking relevant questions, providing relevant information and then taking the steps for completing the task is all that is required to get business.

Asking the right questions:

- Asking the right questions makes all the difference. Questions help in probing further in order to identify the customer's needs and wants.

- The right questions to ask are open-ended questions that encourage and allow the customer to provide a more detailed answer. For example:

  — What did you have in mind?

  — How can I help you?

- Closed-ended questions that require a simple one word answer are great for clarifying or summing up the needs of the customer.

  — Is there any leakage/ blockage in the system?

Listening:

Listening is also an important part of customer services. Good listening is an active process. Listening involves interpretation. You must make the effort to interpret what the customer is saying, and check your understanding by repeating for what the customer just said.

The benefits of active listening are to:

_ Ensure that one has understood the needs of the customer

_ Assist in building a good rapport with the customer and confidence in one's ability to determine and meet their needs

_ Assist customer to clarify and articulate what they want

There are also times when one has to anticipate the customer's needs without being asked. For example: If the customer is concerned about the costs, then give him/ her options of good quality but cheaper products.

If the customer is interested in knowing about the process of production, or ingredients, then take some time and explain it to them in simple language without using jargons.

If the customer is in a hurry, do not linger or get distracted. inform the customer of the time it will take to serve them and ask him/ her if they would like to wait or come back later.

These sorts of actions demonstrate that the organisation/ individual values them and is making the effort to "think ahead".

Keep the customer informed and reassured

It is also very important for the customer to have information about the product or service that the baker or organisation provides. A baker must not refuse information or a request because this will leave a negative impression. If they are not aware about a product/ service, then they should find out the information and convey the same to the customer or have someone knowledgeable meet the customer.

Keep the customer informed on the steps being taken to fulfil his/her request. Do not keep the customer waiting. Always be truthful. Inform the customer beforehand if he/ she will have to wait for the accurate information.

9.3.3 Adapting Behaviour for Dealing with Different Customers

9.3.4 Resolving Disputes

It would be a perfect world if the job always went according to the plan. Part of the work of a craft baker's will involve communicating and dealing with conflicts or solving customer's problems.

Here are a few key points to be kept in mind in such situations:

- Customer complaints must be dealt with at the earliest. If one does not do that, even small complaints will can become big issues. In case one is unable to solve the problem, he/ she must refer it to someone who can. Even that is a resolution.

- Fully explain to the customer what is being done so that they are aware of what is happening and why. This should ensure that the customer is happy with what is happening and should alleviate further complaints or arguments.

- Never make any promises that cannot be delivered.

- Finally, always take customer's feedback. This is to make sure that the customer is happy and their complaint has been dealt with.

- If dealt with professionally and courteously, one can win the customer back, thus ensuring their return time and time again. If there are any issues raised by the customers, then ensure all necessary action is taken to make sure that that particular problem does not occur again.

Dealing with angry or difficult people

During work one can come across any kind of people, even people who are angry and may seem difficult to deal with. However, as a professional one should know how to deal with such people in a manner that will be good for the business as well as respectful for both parties involved.

- First of all, always try to be aware of the surroundings and the people in them, and then one can detect many problems before they happen. Instead of ignoring such behaviour, try speaking with the person as soon as possible.

- Approach them gently, make eye contact, and ask if they need help. Make the person feel safe and help them understand that their situation will be taken care of in the best possible manner.

- Sometimes people just need to know that they are not being ignored, especially if they have been waiting for a long time. Also, practice active listening, and make sure the tone and body language show do not threaten.

- If one is not able to deal with a complaint, he/ she should try to direct the person to someone who can help them. If an anxious person thinks that they are being ignored, they may become defensive.

- It is very important to stay professional at all times, and don't take anything personally. In case one finds that he/ she is allowing the situation to affect him/ her personally, then one should practise counting in his/ her head or breathe deeply. One needs to be aware of what "pushes his/ her buttons" and practice ways for remaining calm in times of conflict.

UNIT 9.4 - Ethics and Discipline

Unit Objectives 🎯

At the end of this unit, you will be able to:

1. Explain the importance of ethical behaviour in your day to day work

2. Explain the importance of discipline in life and apply the same at workplace

9.4.1 Introduction

Ethics:

Ethics are those rules of conduct by which people regulate their conduct while dealing with other people in their everyday life.

One must be constantly mindful of one's obligations to serve the customer and company efficiently and effectively. The degree to which the community will cooperate is dependent upon respect and confidence one has for oneself.

Fig. 9.8 Ethics- Providing correct and complete information and services

9.4.2 Causes of Unethical Behaviour

Causes of unethical behaviour:

- Financial instability.
- Poor character (not screened).
- Resistance to change (not embracing new training).
- Fatigue (taking shortcuts; path of least resistance).
- Conflicts of interest (Doing more than one job).

Consequences of unethical or unprofessional behaviour:

- Loss of business.
- Loss of reputation.
- Being snubbed by colleagues and superiors.
- Passed over for promotion.
- Termination.
- Civil and criminal liability.

A Professional's Pledge

- ☑ I will be honest and loyal.
- ☑ I will be responsible and accountable.
- ☑ I will take pride in everything I do.
- ☑ I will maintain a 'can do' attitude.
- ☑ I will never accept bribes and/ or gifts.
- ☑ I will strive for excellence in everything I do.

9.4.3 Integrity

Integrity is one of the most important qualities one should pursue. It is an inner guideline that tells the person how to react positively to the outside world. People who have integrity are respectful, reliable, honest and principled.

When you are respectful?

- You like yourself and treat yourself well.
- You treat others as you treat yourself.
- You understand that it is important to follow laws and orders.
- You respect the property of others.

When you are reliable?

- You can be depended on to,and do your duties to the best of your ability.
- You can take control and stay calm in emergencies.

When you are honest?

- You tell the truth.
- You take responsibility for your actions, instead of blaming others.
- You can be trusted to keep information to yourself.
- You are sincere.

When you are principled?

- You believe in treating everyone fair.
- You speak out if you see someone being ill-treated.

Besides integrity, one should also be disciplined.

9.4.4 Discipline

Discipline is the key to success in any business.

Discipline requires one to:

- Display appropriate professional public appearance for the workplace i.e.
  - As per company guidelines
  - Clean uniform
  - Polished shoes, tidy hair
  - Appropriate stance and posture and facial expressions, etc.
- Look professional, active and confident
- Display appropriate work habits i.e.
  - Make commitments that one aims to fulfil

— Avoid gossip at workplace

— Remain calm under stress

— Arrive to work on time

— Respect working hours by being 100% on the job when at work i.e. must not invite friends to work.

— Stay off the phone unless it is for work or an emergency

• Ensure that one is able to manage self and time and does not make errors at work. Also, customers find such workers dependable and trustworthy, and give them more business.

• Be responsible for their work and the people around

One must remember to keep their personal and professional life separate. One should be disciplined enough to leave personal issues at home, and focus on work. Similarly, a bad day at work, should not be taken home.

UNIT 9.5 - Vendor Management

Unit Objectives ⌖

At the end of this unit, you will be able to:

1. List different types of vendors and vending arrangements

2. Explain positive vendor management practices

3. Explain various clauses of vendor contracts

9.5.1 Vendor Management

The purpose of vendor management is to:

- Ensure regular and undisrupted supply of items required for bakery operations and production.

- Ensure the right materials of the required quality, required quantity, at the right price are available for bakery operations.

- Ensure unnecessary costs are saved and there is less scope of wastage

- Get the right credit and payment terms that suit business operations contribute towards financial profitability.

- Get information on market and related developments, including new products, ingredients and possible factors that may impact business.

- Ensure good relations with the vendors for ease of communications and smooth operations.

Different types of vendors include:

Vendors can be classified as per the following factors:

- Term: Short term or long term suppliers, one off purchase

- Supplies: offer of products or services

- Frequency of supply: daily, weekly, monthly, annual, on order

- Terms of payment: cash, credit

- Location: local, out-station (domestic, international)

Terms of engagement:

Vendors may be engaged on cash or credit. Usually cash payments may be made wholly in advance, partial in advance or post-delivery. The credit vendors would offer credit terms usually up to a month for payments to be made. Though shorter or longer duration of credit periods are also known to be extended in the business.

Good practices for vendor management include:

- Understand in detail requirements of the business in terms of product, service in terms of timelines, costs, quality, availability, quantities, etc.

- Search vendors through various mechanisms including:
  Advertisements, Newspapers, Other Businesses, Word of Mouth, Employees, Neighboring businesses, Websites, etc.

- Write down the requirements clearly including all relevant details

- Invite vendors to apply to participate in the vendor selection system where the criticality and volumes are higher. For others keep a simpler process of sourcing quotations and samples, or open market purchases

- Short list vendors which meet criteria as set by analyzing business requirements

- Invite vendors for a discussion and discuss terms and conditions for the relationship. This will translate into a Service level agreement

- Negotiate price, terms and conditions as per requirement and best offer, factoring in alternatives available. For example, where one is sure there are viable alternatives available one may negotiate more aggressively, whereas where one knows there are limited or no alternatives one may be willing to be more flexible.

- Ensure the terms and conditions are formalised in the form of a written contract. The following are some of the important elements of a contract:

  — Details of parties in the contract, their addresses and other details including legal and business status

  — Objective of the contract

  — Roles and responsibilities of each party

  — Product or service name and description, quality and other specifications

  — Price and volumes agreed upon

  — Terms of payment

  — Process of engagement and other formalities to be followed

  — Confidentiality

  — Non-compete

  — Exigencies and relevant clauses

  — Penalty and other clauses that govern non-delivery or breach of contract

  — Arbitration clause

  — Exit clause

  — Term of the contract

- Negotiation for a contract is based on getting favorable terms with the supplier that ensure the right product and service, at the right price and with the right quality. This is important from a point of view that the objective should not be to subdue the vendor to agree to the most economical terms, but to agree the most optimum terms that do not put either the vendor or the buyer at a disadvantage. One should therefore prepare by knowing market prices of the products or services, and also the quality variations of the same.

- It is important to remember that it is not necessary to always go with the lowest price, quality and reliability has to be factored in and then the selection has to be decided.

- Vendors should be treated as partners in business and vendors should be encouraged to think of their relationship with the business as the same. The idea is to create a win-win situation for both parties. If any party exploits the other the relationship with neither sustain and neither will the objectives of the arrangement usually work. For example, if the vendor is made to put up with unreasonable terms and work at what may cause their business a loss, they are likely to cut corners and supply sub-par quality to make up for the loss. Or they may not want to do long term business and may walk away as soon as their need for the deal is over. On the other hand, if the vendor exploits the business by supplying poor quality or items or services at very high prices then the business will walk away and find alternative supplier as soon as they can find one. Remember seeking new vendors or clients usually is a costly and time consuming affair therefore the objective of the business should be to find trustworthy and good quality vendors and partner them for mutual success.

- A vendor's performance in terms of reliability, quality of products and/or service, price, etc. should be monitored continuously and systems should be in place to record the performance parameters and regular meeting should be held with the vendor to give them feedback on their performance and resolve any performance issues that may cause problems to the business.

- Documentation is extremely important and all dealings, movement of goods, delivery and payments should be recorded in writing with all the necessary details. These should be filed and stored safely and in an organised manner, so that they are found when required easily and not damaged or lost.

- All invoices, orders should be serially numbered and accounted for. All receipts too similarly should be serially numbered. Accurate dates and time stamps should be put on the documentation as well.

- Computerised records should be maintained where possible and regular back-ups should be taken to ensure these are not lost due to any malfunction or data corruption.

- All records should be held securely with access to authorized personnel only.

- Any dispute with the vendor should be resolved as per contractual clause. This may involve involving a neutral third party acceptable to both as arbiter to assist in the proceedings.

Summary

A. Teamwork

- Teamwork is very important in every profession.

- Success of an organization or group of people working together is critically dependent on every member of the team participating effectively to achieve common goals.

- The 4C's of working in a team are – Common goal, Collaboration, Co-ordination and Communication.

B. Effective Communication

- Communication is the activity of conveying meaningful information.

- Communication requires a sender, a message and an intended recipient.

- Communication is the process of exchanging verbal and non-verbal messages. It is a continuous process.

- The communication process is complete once the receiver has understood the sender.

- Types of communication include Verbal, Written and Non Verbal (Body language).

- It is very important to understand and be aware of the communication barriers.

- Communication barriers are defined as the distractions in the communication process.

- Listening plays a very critical role in the process of communication. A good listener is regarded as the good communicator.

- Active listening is the process of paying complete attention towards the discussion/person.

- Assertive communication is the ability to express positive and negative ideas and feelings in an open, honest and direct way.

C. Customer Service

- Bakery is a part of the Food Processing industry where the products are sold to retail customers or distributors.

- A great set of interpersonal interaction and customer service skills can improve the performance on job in a variety of ways.

- Customer satisfaction and loyalty is critical for the success of any organization.

- Greeting is an expression that creates a first impression on the customer. The customer will react with trust or distrust depending upon the first impression they get of the service.

- Customer complaints must be dealt with at the earliest. If one does not do that, even small complaints can become big issues. In case one is unable to solve the problem, he/ she must refer it to someone who can. Even that is a resolution.

Summary

D. Ethics and Discipline

- Ethics are those rules of conduct by which people regulate their conduct while dealing with other people in their everyday life

- Integrity is an inner guideline that tells the person how to react positively to the outside world

- People who have integrity are respectful, reliable, honest and principled

- Discipline is the key to success in any business

E. Vendor Management

- A craft baker should be well aware of the vendor management principles to ensure regular and undisrupted supply of items required for bakery operations and production

- Vendors are classified based on Term, Supplies, Frequency of supply ,Terms of payment and Location

- Negotiation for a contract is based on getting favorable terms with the supplier that ensure the right product and service, at the right price and with the right quality

- Vendors should be treated as partners in business and vendors should be encouraged to think of their relationship with the business as the same

- Document movement of goods, delivery and payments should be recorded in writing with all the necessary details

- All the records should be properly maintained and should be available with the competent authority

Exercise

Q1. What should a craft baker keep in mind for each of these?

<table>
<tr><td>

COLLABORATION

....

....

....

....

....

....

</td><td>

COMMON GOAL

....

....

....

....

....

....

</td></tr>
<tr><td>

COORDINATION

....

....

....

....

....

....

</td><td>

COMMUNICATION

....

....

....

....

....

....

</td></tr>
</table>

Q2. List the barriers to effective communications.

....

....

....

....

....

....

....

Exercise

Q3. How to become a good listener?

Q4. Write the advantages of assertive communication.

Q5. What is vendor management?

Exercise

Q6. Mention the basic principles of good customer service

Q7. List the six assertive techniques. Choose from the following options:

> calm repetition, use the information , rehearse, some truth, errors or faults, workable compromise

1. When one wants to talk about a sensitive subject, _____ what one wants to say.

2. To ignore manipulative talks, argumentative baiting and irrelevant logic, use _____, and say what he/ she wants to say and stay focused on the issue.

3. To acknowledge criticism, agree that there may be _____ to what they say, but still choose to do what feels right.

4. To seek out one's own criticism and to improve communication, listen for critical comments, clarify the understanding of criticism, _____ if it will be helpful or ignore the information if it is manipulative.

5. To look comfortably at one's own negatives, and to reduce the critics' hostility, one should accept his/ her _____, although there is no need to apologise.

6. When one feels that his/ her self-respect is not in question, consider a _____.

Exercise

Q8. List out the consequences of unethical or unprofessional behaviour.

10. Employability & Entrepreneurship Skills

Key Learning Outcomes 💡

At the end of this unit, you will be able to:

1. Explain the meaning of health
2. List common health issues
3. Discuss tips to prevent common health issues
4. Explain the meaning of hygiene
5. Understand the purpose of Swacch Bharat Abhiyan
6. Explain the meaning of habit
7. Discuss ways to set up a safe work environment
8. Discuss critical safety habits to be followed by employees
9. Explain the importance of self-analysis
10. Understand motivation with the help of Maslow's Hierarchy of Needs
11. Discuss the meaning of achievement motivation
12. List the characteristics of entrepreneurs with achievement motivation
13. List the different factors that motivate you
14. Discuss how to maintain a positive attitude
15. Discuss the role of attitude in self-analysis
16. List your strengths and weaknesses
17. Discuss the qualities of honest people
18. Describe the importance of honesty in entrepreneurs
19. Discuss the elements of a strong work ethic
20. Discuss how to foster a good work ethic
21. List the characteristics of highly creative people
22. List the characteristics of highly innovative people
23. Discuss the benefits of time management
24. List the traits of effective time managers
25. Describe effective time management technique
26. Discuss the importance of anger management
27. Describe anger management strategies
28. Discuss tips for anger management
29. Discuss the causes of stress
30. Discuss the symptoms of stress
31. Discuss tips for stress management
32. Identify the basic parts of a computer
33. Identify the basic parts of a keyboard
34. Recall basic computer terminology
35. Recall basic computer terminology

36. Recall the functions of basic computer keys
37. Discuss the main applications of MS Office
38. Discuss the benefits of Microsoft Outlook
39. Discuss the different types of e-commerce
40. List the benefits of e-commerce for retailers and customers
41. Discuss how the Digital India campaign will help boost e-commerce in India
42. Explain how you will sell a product or service on an e-commerce platform
43. Discuss the importance of saving money
44. Discuss the benefits of saving money
45. Discuss the main types of bank accounts
46. Describe the process of opening a bank account
47. Differentiate between fixed and variable costs
48. Describe the main types of investment options
49. Describe the different types of insurance products
50. Describe the different types of taxes
51. Discuss the uses of online banking
52. Discuss the main types of electronic funds transfers
53. Discuss the steps to prepare for an interview
54. Discuss the steps to create an effective Resume
55. Discuss the most frequently asked interview questions
56. Discuss how to answer the most frequently asked interview questions
57. Discuss basic workplace terminology
58. Discuss the concept of entrepreneurship
59. Discuss the importance of entrepreneurship
60. Describe the characteristics of an entrepreneur
61. Describe the different types of enterprises
62. List the qualities of an effective leader
63. Discuss the benefits of effective leadership
64. List the traits of an effective team
65. Discuss the importance of listening effectively
66. Discuss how to listen effectively
67. Discuss the importance of speaking effectively
68. Discuss how to speak effectively
69. Discuss how to solve problems
70. List important problem solving traits

71. Discuss ways to assess problem solving skills

72. Discuss the importance of negotiation

73. Discuss how to negotiate

74. Discuss how to identify new business opportunities

75. Discuss how to identify business opportunities within your business

76. Understand the meaning of entrepreneur

77. Describe the different types of entrepreneurs

78. List the characteristics of entrepreneurs

79. Recall entrepreneur success stories

80. Discuss the entrepreneurial process

81. Describe the entrepreneurship ecosystem

82. Discuss the government's role in the entrepreneurship ecosystem

83. Discuss the current entrepreneurship ecosystem in India

84. Understand the purpose of the Make in India campaign

85. Discuss the relationship between entrepreneurship and risk appetite

86. Discuss the relationship between entrepreneurship and resilience

87. Describe the characteristics of a resilient entrepreneur

88. Discuss how to deal with failure

89. Discuss how market research is carried out

90. Describe the 4 Ps of marketing

91. Discuss the importance of idea generation

92. Recall basic business terminology

93. Discuss the need for CRM

94. Discuss the benefits of CRM

95. Discuss the need for networking

96. Discuss the benefits of networking

97. Understand the importance of setting goals

98. Differentiate between short-term, medium-term and long-term goals

99. Discuss how to write a business plan

100. Explain the financial planning process

101. Discuss ways to manage your risk

102. Describe the procedure and formalities for applying for bank finance

103. Discuss how to manage your own enterprise

104. List important questions that every entrepreneur should ask before starting an enterprise

UNIT 10.1: Personal Strengths & Value Systems

Unit Objectives ◎

At the end of this unit, you will be able to:

1. Explain the meaning of health

2. List common health issues

3. Discuss tips to prevent common health issues

4. Explain the meaning of hygiene

5. Understand the purpose of Swacch Bharat Abhiyan

6. Explain the meaning of habit

7. Discuss ways to set up a safe work environment

8. Discuss critical safety habits to be followed by employees

9. Explain the importance of self-analysis

10. Understand motivation with the help of Maslow's Hierarchy of Needs

11. Discuss the meaning of achievement motivation

12. List the characteristics of entrepreneurs with achievement motivation

13. List the different factors that motivate you

14. Discuss how to maintain a positive attitude

15. Discuss the role of attitude in self-analysis

16. List your strengths and weaknesses

17. Discuss the qualities of honest people

18. Describe the importance of honesty in entrepreneurs

19. Discuss the elements of a strong work ethic

20. Discuss how to foster a good work ethic

21. List the characteristics of highly creative people

22. List the characteristics of highly innovative people

23. Discuss the benefits of time management

24. List the traits of effective time managers

25. Describe effective time management technique

26. Discuss the importance of anger management

27. Describe anger management strategies

28. Discuss tips for anger management

29. Discuss the causes of stress

30. Discuss the symptoms of stress

31. Discuss tips for stress management

10.1.1 Health, Habits, Hygiene: What is Health

As per the World Health Organization (WHO), health is a "State of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity." This means being healthy does not simply mean not being unhealthy – it also means you need to be at peace emotionally, and feel fit physically. For example, you cannot say you are healthy simply because you do not have any physical ailments like a cold or cough. You also need to think about whether you are feeling calm, relaxed and happy.

Common Health Issues

Some common health issues are:

• Allergies

• Asthma

• Skin Disorders

• Depression and Anxiety

• Diabetes

• Cough, Cold, Sore Throat

• Difficulty Sleeping

• Obesity

Tips to Prevent Health Issues

Taking measures to prevent ill health is always better than curing a disease or sickness. You can stay healthy by:

• Eating healthy foods like fruits, vegetables and nuts

• Cutting back on unhealthy and sugary foods

• Drinking enough water everyday

• Not smoking or drinking alcohol

• Exercising for at least 30 minutes a day, 4-5 times a week

• Taking vaccinations when required

• Practicing yoga exercises and meditation

How many of these health standards do you follow? Tick the ones that apply to you.

1. Get minimum 7-8 hours of sleep every night. ☐

2. Avoid checking email first thing in the morning and right before you go to bed at night. ☐

3. Don't skip meals – eat regular meals at correct meal times. ☐

4. Read a little bit every single day. ☐

5. Eat more home cooked food than junk food. ☐

6.   Stand more than you sit. ☐

7.   Drink a glass of water first thing in the morning and have at least 8 glasses of water through the day. ☐

8.   Go to the doctor and dentist for regular checkups. ☐

9.   Exercise for 30 minutes at least 5 days a week. ☐

10.   Avoid consuming lots of aerated beverages. ☐

What is Hygiene?

As per the World Health Organization (WHO), "Hygiene refers to conditions and practices that help to maintain health and prevent the spread of diseases." In other words, hygiene means ensuring that you do whatever is required to keep your surroundings clean, so that you reduce the chances of spreading germs and diseases.

For instance, think about the kitchen in your home. Good hygiene means ensuring that the kitchen is always spick and span, the food is put away, dishes are washed and dustbins are not overflowing with garbage. Doing all this will reduce the chances of attracting pests like rats or cockroaches, and prevent the growth of fungus and other bacteria, which could spread disease.

How many of these health standards do you follow? Tick the ones that apply to you.

1.   Have a bath or shower every day with soap – and wash your hair with shampoo 2-3 times a week. ☐

2.   Wear a fresh pair of clean undergarments every day. ☐

3.   Brush your teeth in the morning and before going to bed. ☐

4.   Cut your fingernails and toenails regularly. ☐

5.   Wash your hands with soap after going to the toilet. ☐

6.   Use an anti-perspirant deodorant on your underarms if you sweat a lot. ☐

7.   Wash your hands with soap before cooking or eating. ☐

8.   Stay home when you are sick, so other people don't catch what you have. ☐

9.   Wash dirty clothes with laundry soap before wearing them again. ☐

10.   Cover your nose with a tissue/your hand when coughing or sneezing. ☐

See how healthy and hygienic you are, by giving yourself 1 point for every ticked statement!

Then take a look at what your score means.

Your Score

0-7/20: You need to work a lot harder to stay fit and fine! Make it a point to practice good habits daily and see how much better you feel!

7-14/20: Not bad, but there is scope for improvement! Try and add a few more good habits to your daily routine.

14-20/20: Great job! Keep up the good work! Your body and mind thank you!

Swachh Bharat Abhiyan

We have already discussed the importance of following good hygiene and health practices for ourselves. But, it is not enough for us to be healthy and hygienic. We must also extend this standard to our homes, our immediate surroundings and to our country as a whole.

The 'Swachh Bharat Abhiyan' (Clean India Mission) launched by Prime Minister Shri Narendra Modi on 2nd October 2014, believes in doing exactly this. The aim of this mission is to clean the streets and roads of India and raise the overall level of cleanliness. Currently this mission covers 4,041 cities and towns across the country. Millions of our people have taken the pledge for a clean India. You should take the pledge too, and do everything possible to keep our country clean!

What are Habits?

A habit is a behaviour that is repeated frequently. All of us have good habits and bad habits. Keep in mind the phrase by John Dryden: "We first make our habits, and then our habits make us." This is why it is so important that you make good habits a way of life, and consciously avoid practicing bad habits.

Some good habits that you should make part of your daily routine are:

• Always having a positive attitude

• Making exercise a part of your daily routine

• Reading motivational and inspirational stories

• Smiling! Make it a habit to smile as often as possible

• Making time for family and friends

• Going to bed early and waking up early

Some bad habits that you should quit immediately are:

• Skipping breakfast

• Snacking frequently even when you are not hungry

• Eating too much fattening and sugary food

• Smoking, drinking alcohol and doing drugs

• Spending more money than you can afford

• Worrying about unimportant issues

• Staying up late and waking up late

Tips

• Following healthy and hygienic practices every day will make you feel good mentally and physically.

• Hygiene is two-thirds of health – so good hygiene will help you stay strong and healthy!

10.1.2: Safety: Tips to Design a Safe Workplace

Every employer is obligated to ensure that his workplace follows the highest possible safety protocol. When setting up a business, owners must make it a point to:

• Use ergonomically designed furniture and equipment to avoid stooping and twisting

• Provide mechanical aids to avoid lifting or carrying heavy objects

• Have protective equipment on hand for hazardous jobs

• Designate emergency exits and ensure they are easily accessible

• Set down health codes and ensure they are implemented

• Follow the practice of regular safety inspections in and around the workplace

• Ensure regular building inspections are conducted

• Get expert advice on workplace safety and follow it

Non-Negotiable Employee Safety Habits

Every employer is obligated to ensure that his workplace follows the highest possible safety protocol. When setting up a business, owners must make it a point to:

• Immediately report unsafe conditions to a supervisor

• Recognize and report safety hazards that could lead to slips, trips and falls

• Report all injuries and accidents to a supervisor

• Wear the correct protective equipment when required

• Learn how to correctly use equipment provided for safety purposes

• Be aware of and avoid actions that could endanger other people

• Take rest breaks during the day and some time off from work during the week

Tips

• Be aware of what emergency number to call at the time of a workplace emergency

• Practice evacuation drills regularly to avoid chaotic evacuations

10.1.3 Self Analysis – Attitude, Achievement Motivation: What is Self-Analysis

To truly achieve your full potential, you need to take a deep look inside yourself and find out what kind of person you really are. This attempt to understand your personality is known as self-analysis. Assessing yourself in this manner will help you grow, and will also help you to identify areas within yourself that need to be further developed, changed or eliminated. You can better understand yourself by taking a deep look at what motivates you, what your attitude is like, and what your strengths and weaknesses are.

What is Motivation?

Very simply put, motivation is your reason for acting or behaving in a certain manner. It is important to understand that not everyone is motivated by the same desires – people are motivated by many, many different things. We can understand this better by looking at Maslow's Hierarchy of Needs.

Maslow's Hierarchy of Needs

Famous American psychologist Abraham Maslow wanted to understand what motivates people. He believed that people have five types of needs, ranging from very basic needs (called physiological needs) to more important needs that are required for self-growth (called self-actualization needs). Between the physiological and self-actualization needs are three other needs – safety needs, belongingness and love needs, and esteem needs. These needs are usually shown as a pyramid with five levels and are known as Maslow's Hierarchy of Needs.
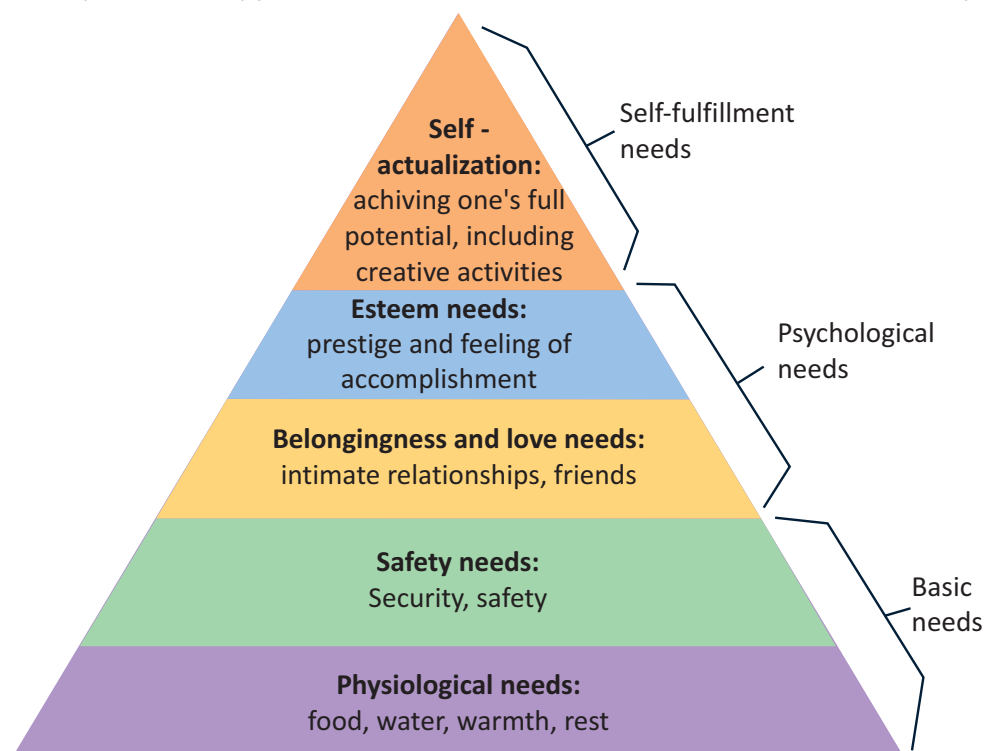

Fig. 10.1 Maslow's Hierarchy

As you can see from the pyramid, the lowest level depicts the most basic needs. Maslow believed that our behaviour is motivated by our basic needs, until those needs are met. Once they are fulfilled, we move to the next level and are motived by the next level of needs. Let's understand this better with an example.

Rupa comes from a very poor family. She never has enough food, water, warmth or rest. According to Maslow, until Rupa is sure that she will get these basic needs, she will not even think about the next level of needs – her safety needs. But, once Rupa is confident that her basic needs will be met, she will move to the next level, and her behaviour will then be motivated by her need for security and safety. Once these new needs are met, Rupa will once again move to the next level, and be motivated by her need for relationships and friends. Once this need is satisfied, Rupa will then focus on the fourth level of needs – her esteem needs, after which she will move up to the fifth and last level of needs – the desire to achieve her full potential.

Understanding Achievement Motivation

We now know that people are motivated by basic, psychological and self-fulfillment needs. However, certain people are also motivated by the achievement of highly challenging accomplishments. This is known as Achievement Motivation, or 'need for achievement'.

The level of motivation achievement in a person differs from individual to individual. It is important that entrepreneurs have a high level of achievement motivation – a deep desire to accomplish something important and unique. It is equally important that they hire people who are also highly motivated by challenges and success.

What Motivates You?

What are the things that really motivate you? List down five things that really motivate you. Remember to answer honestly!

I am motivated by:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Characteristics of Entrepreneurs with Achievement Motivation

Entrepreneurs with achievement motivation can be described as follows:

- Unafraid to take risks for personal accomplishment
- Love being challenged
- Future-oriented
- Flexible and adaptive
- Value negative feedback more than positive feedback

- Very persistent when it comes to achieving goals
- Extremely courageous
- Highly creative and innovative
- Restless - constantly looking to achieve more
- Feel personally responsible for solving problems

Think about it:

- How many of these traits do you have?
- Can you think of entrepreneurs who display these traits?

How to Cultivate a Positive Attitude

The good news is attitude is a choice. So it is possible to improve, control and change our attitude, if we decide we want to! The following tips help foster a positive mindset:

- Remember that you control your attitude, not the other way around
- Devote at least 15 minutes a day towards reading, watching or listening to something positive
- Avoid negative people who only complain and stop complaining yourself
- Expand your vocabulary with positive words and delete negative phrases from your mind
- Be appreciative and focus on what's good in yourself, in your life, and in others
- Stop thinking of yourself as a victim and start being proactive
- Imagine yourself succeeding and achieving your goals

What is Attitude?

Now that we understand why motivation is so important for self-analysis, let's look at the role our attitude plays in better understanding ourselves. Attitude can be described as your tendency (positive or negative), to think and feel about someone or something. Attitude is the foundation for success in every aspect of life. Our attitude can be our best friend or our worst enemy. In other words:

<blockquote>"The only disability in life is a bad attitude."</blockquote>

When you start a business, you are sure to encounter a wide variety of emotions, from difficult times and failures to good times and successes. Your attitude is what will see you through the tough times and guide you towards success. Attitude is also infectious. It affects everyone around you, from your customers to your employees to your investors. A positive attitude helps build confidence in the workplace while a negative attitude is likely to result in the demotivation of your people.

What Are Your Strengths and Weaknesses?

Another way to analyze yourself is by honestly identifying your strengths and weaknesses. This will help you use your strengths to your best advantage and reduce your weaknesses.

Note down all your strengths and weaknesses in the two columns below. Remember to be honest with yourself!

Strengths	Weaknesses

Tips

- Achievement motivation can be learned.
- Don't be afraid to make mistakes.
- Train yourself to finish what you start.
- Dream big.

10.1.4 Honesty & Work Ethics: What is Honesty?

Honesty is the quality of being fair and truthful. It means speaking and acting in a manner that inspires trust. A person who is described as honest is seen as truthful and sincere, and as someone who isn't deceitful or devious and doesn't steal or cheat. There are two dimensions of honesty – one is honesty in communication and the other is honesty in conduct.

Honesty is an extremely important trait because it results in peace of mind and builds relationships that are based on trust. Being dishonest, on the other hand, results in anxiety and leads to relationships full of distrust and conflict.

Qualities of Honest People

Honest individuals have certain distinct characteristics. Some common qualities among honest people are:

1. They don't worry about what others think of them. They believe in being themselves – they don't bother about whether they are liked or disliked for their personalities.

2. They stand up for their beliefs. They won't think twice about giving their honest opinion, even if they are aware that their point of view lies with the minority.

3. They are think skinned. This means they are not affected by others judging them harshly for their honest opinions.

4. They forge trusting, meaningful and healthy friendships. Honest people usually surround themselves with honest friends. They have faith that their friends will be truthful and upfront with them at all times.

They are trusted by their peers. They are seen as people who can be counted on for truthful and objective feedback and advice.

*   Honesty and employees: When entrepreneurs build honest relationships with their employees, it leads to more transparency in the workplace, which results in higher work performance and better results.

*   Honesty and investors: For entrepreneurs, being honest with investors means not only sharing strengths but also candidly disclosing current and potential weaknesses, problem areas and solution strategies. Keep in mind that investors have a lot of experience with startups and are aware that all new companies have problems. Claiming that everything is perfectly fine and running smoothly is a red flag for most investors.

*   Honesty with oneself: The consequences of being dishonest with oneself can lead to dire results, especially in the case of entrepreneurs. For entrepreneurs to succeed, it is critical that they remain realistic about their situation at all times, and accurately judge every aspect of their enterprise for what it truly is.

Importance of Honesty in Entrepreneurs

One of the most important characteristics of entrepreneurs is honesty. When entrepreneurs are honest with their customers, employees and investors, it shows that they respect those that they work with. It is also important that entrepreneurs remain honest with themselves. Let's look at how being honest would lead to great benefits for entrepreneurs.

*   Honesty and customers: When entrepreneurs are honest with their customers it leads to stronger relationships, which in turn results in business growth and a stronger customer network.

What are Work Ethics?

Being ethical in the workplace means displaying values like honesty, integrity and respect in all your decisions and communications. It means not displaying negative qualities like lying, cheating and stealing.

Workplace ethics play a big role in the profitability of a company. It is as crucial to an enterprise as high morale and teamwork. This is why most companies lay down specific workplace ethic guidelines that must compulsorily be followed by their employees. These guidelines are typically outlined in a company's employee handbook.

Elements of a Strong Work Ethic

An entrepreneur must display strong work ethics, as well as hire only those individuals who believe in and display the same level of ethical behavior in the workplace. Some elements of a strong work ethic are:

- **Professionalism**: This involves everything from how you present yourself in a corporate setting to the manner in which you treat others in the workplace.

- **Respectfulness**: This means remaining poised and diplomatic regardless of how stressful or volatile a situation is.

- **Dependability**: This means always keeping your word, whether it's arriving on time for a meeting or delivering work on time.

- **Dedication**: This means refusing to quit until the designated work is done, and completing the work at the highest possible level of excellence.

- **Determination**: This means embracing obstacles as challenges rather than letting them stop you, and pushing ahead with purpose and resilience to get the desired results.

- **Accountability**: This means taking responsibility for your actions and the consequences of your actions, and not making excuses for your mistakes.

- **Humility**: This means acknowledging everyone's efforts and had work, and sharing the credit for accomplishments.

How to Foster a Good Work Ethic

As an entrepreneur, it is important that you clearly define the kind of behaviour that you expect from each and every team member in the workplace. You should make it clear that you expect employees to display positive work ethics like:

- **Honesty**: All work assigned to a person should be done with complete honesty, without any deceit or lies.

- **Good attitude**: All team members should be optimistic, energetic, and positive.

- **Reliability**: Employees should show up where they are supposed to be, when they are supposed to be there.

- **Good work habits**: Employees should always be well groomed, never use inappropriate language, conduct themselves professionally at all times, etc.

- **Initiative**: Doing the bare minimum is not enough. Every team member needs to be proactive and show initiative.

- **Trustworthiness**: Trust is non-negotiable. If an employee cannot be trusted, it's time to let that employee go.

- **Respect**: Employees need to respect the company, the law, their work, their colleagues and themselves.
- **Integrity**: Each and every team member should be completely ethical and must display above board behaviour at all times.
- **Efficiency**: Efficient employees help a company grow while inefficient employees result in a waste of time and resources.

Tips

- Don't get angry when someone tells you the truth and you don't like what you hear.
- Always be willing to accept responsibility for your mistakes.

10.1.5 Creativity & Innovation : What is Creativity

Creativity means thinking outside the box. It means viewing things in new ways or from different perspectives, and then converting these ideas into reality. Creativity involves two parts: thinking and producing. Simply having an idea makes you imaginative, not creative. However, having an idea and acting on it makes you creative.

Characteristics of Highly Creative People

Some characteristics of creative people are:

- They are imaginative and playful
- They see issues from different angles
- They notice small details
- They have very little tolerance for boredom

- They detest rules and routine
- They love to daydream
- They are very curious

What is Innovation?

There are many different definitions of innovation. In simple terms, innovation means turning an idea into a solution that adds value. It can also mean adding value by implementing a new product, service or process, or significantly improving on an existing product, service or process.

Characteristics of Highly Innovative People

Some characteristics of highly innovative people are:

- They embrace doing things differently
- They don't believe in taking shortcuts
- They are not afraid to be unconventional
- They are highly proactive and persistent
- They are organized, cautious and risk-averse

Tips

- Take regular breaks from your creative work to recharge yourself and gain fresh perspective.
- Build prototypes frequently, test them out, get feedback, and make the required changes.

10.1.6 Time Management: What is Time Management?

Time management is the process organizing your time, and deciding how to allocate your time between different activities. Good time management is the difference between working smart (getting more done in less time) and working hard (working for more time to get more done).

Effective time management leads to an efficient work output, even when you are faced with tight deadlines and high pressure situations. On the other hand, not managing your time effectively results in inefficient output and increases stress and anxiety.

Benefits of Time Management

Time management can lead to huge benefits like:

- Greater productivity
- Better professional reputation
- Higher chances for career advancement
- Higher efficiency
- Reduced stress
- Greater opportunities to achieve goals

Not managing time effectively can result in undesirable consequences like:

- Missing deadlines
- Substandard work quality
- Stalled career
- Inefficient work output
- Poor professional reputation
- Increase in stress and anxiety

Traits of Effective Time Managers

Some traits of effective time managers are:

- They begin projects early
- They set daily objectives
- They modify plans if required, to achieve better results
- They are flexible and open-minded
- They inform people in advance if their help will be required
- They know how to say no
- They break tasks into steps with specific deadlines
- They continually review long term goals
- They think of alternate solutions if and when required
- They ask for help when required
- They create backup plans

Effective Time Management Techniques

You can manage your time better by putting into practice certain time management techniques. Some helpful tips are:

- Plan out your day as well as plan for interruptions. Give yourself at least 30 minutes to figure out your time plan. In your plan, schedule some time for interruptions.
- Put up a "Do Not Disturb" sign when you absolutely have to complete a certain amount of work.
- Close your mind to all distractions. Train yourself to ignore ringing phones, don't reply to chat messages and disconnect from social media sites.

- Delegate your work. This will not only help your work get done faster, but will also show you the unique skills and abilities of those around you.

- Stop procrastinating. Remind yourself that procrastination typically arises due to the fear of failure or the belief that you cannot do things as perfectly as you wish to do them.

- Prioritize. List each task to be completed in order of its urgency or importance level. Then focus on completing each task, one by one.

- Maintain a log of your work activities. Analyze the log to help you understand how efficient you are, and how much time is wasted every day.
  Create time management goals to reduce time wastage.

Tips

- Always complete the most important tasks first.

- Get at least 7 – 8 hours of sleep every day.

- Start your day early.

- Don't waste too much time on small, unimportant details.

- Set a time limit for every task that you will undertake.

- Give yourself some time to unwind between tasks.

10.1.7 Anger Management: What is Anger Management

Anger management is the process of:

1. Learning to recognize the signs that you, or someone else, is becoming angry
2. Taking the best course of action to calm down the situation in a positive way

Anger management does not mean suppressing anger.

Importance of Anger Management

Anger is a perfectly normal human emotion. In fact, when managed the right way, anger can be considered a healthy emotion. However, if it is not kept in check, anger can make us act inappropriately and can lead to us saying or doing things that we will likely later regret.
Extreme anger can:

•   **Hurt you physically:** It leads to heart disease, diabetes, a weakened immune system, insomnia, and high blood pressure.

•   **Hurt you mentally**: It can cloud your thinking and lead to stress, depression and mental health issues.

•   **Hurt your career**: It can result in alienating your colleagues, bosses, clients and lead to the loss of respect.

•   **Hurt your relationships**: It makes it hard for your family and friends to trust you, be honest with you and feel comfortable around you.
    This is why anger management, or managing anger appropriately, is so important.

Anger Management Strategies

Here are some strategies that can help you control your anger:

Strategy 1: Relaxation

Something as simple as breathing deeply and looking at relaxing images works wonders in calming down angry feelings. Try this simple breathing exercise:

1. Take a deep breath from your diaphragm (don't breathe from your chest)
2. Visualize your breath coming up from your stomach
3. Keep repeating a calming word like 'relax' or 'take it easy' (remember to keep breathing deeply while repeating the word)
4. Picture a relaxing moment (this can be from your memory or your imagination)

Follow this relaxation technique daily, especially when you realize that you're starting to feel angry.

Strategy 2: Cognitive Restructuring

Cognitive restructuring means changing the manner in which you think. Anger can make you curse, swear, exaggerate and act very dramatically. When this happens, force yourself to replace your angry thoughts with more logical ones. For instance, instead of thinking 'Everything is ruined' change your mindset and tell yourself 'It's not the end of the world and getting angry won't solve this'.

Strategy 3: Problem Solving

Getting angry about a problem that you cannot control is a perfectly natural response. Sometimes, try as you may, there may not be a solution to the difficulty you are faced with. In such cases, stop focusing on solving the problem, and instead focus on handling and facing the problem. Remind yourself that you will do your best to deal with the situation, but that you will not blame yourself if you don't get the solution you desire.

Strategy 4: Better Communication

When you're angry, it is very easy to jump to inaccurate conclusions. In this case, you need to force yourself to stop reacting, and think carefully about what you want to say, before saying it. Avoid saying the first thing that enters your head. Force yourself to listen carefully to what the other person is saying. Then think about the conversation before responding.

Strategy 5: Changing Your Environment

If you find that your environment is the cause of your anger, try and give yourself a break from your surroundings. Make an active decision to schedule some personal time for yourself, especially on days that are very hectic and stressful. Having even a brief amount of quiet or alone time is sure to help calm you down.

Tips for Anger Management

- The following tips will help you keep your anger in check:
- Take some time to collect your thoughts before you speak out in anger.
- Express the reason for your anger in an assertive, but non-confrontational manner once you have calmed down.
- Do some form of physical exercise like running or walking briskly when you feel yourself getting angry.
- Make short breaks part of your daily routine, especially during days that are stressful. Focus on how to solve a problem that's making you angry, rather than focusing on the fact that the problem is making you angry.

Tips

- Try to forgive those who anger you, rather than hold a grudge against them.
- Avoid using sarcasm and hurling insults. Instead, try and explain the reason for your frustration in a polite and mature manner.

10.1.8 Stress Management: What is Stress

We say we are 'stressed' when we feel overloaded and unsure of our ability to deal with the pressures placed on us. Anything that challenges or threatens our well-being can be defined as a stress. It is important to note that stress can be good and bad. While good stress keeps us going, negative stress undermines our mental and physical health. This is why it is so important to manage negative stress effectively.

Causes of Stress

Stress can be caused by internal and external factors.

Internal causes of stress

- Constant worry
- Rigid thinking
- Unrealistic expectations
- Pessimism
- Negative self-talk
- All in or all out attitude

External causes of stress

- Major life changes
- Difficulties with relationships
- Having too much to do
- Difficulties at work or in school
- Financial difficulties
- Worrying about one's children and/or family

Symptoms of Stress

Stress can manifest itself in numerous ways. Take a look at the cognitive, emotional, physical and behavioral symptoms of stress.

Cognitive Symptoms	Emotional Symptoms
• Memory problems	• Depression
• Concentration issues	• Agitation
• Lack of judgement	• Irritability
• Pessimism	• Loneliness
• Anxiety	• Anxiety
• Constant worrying	• Anger

Physical Symptoms	Behavioral Symptoms
• Aches and pain	• Increase or decrease in appetite
• Diarrhea or constipation	• Over sleeping or not sleeping enough
• Nausea	• Withdrawing socially
• Dizziness	• Ignoring responsibilities
• Chest pain and/or rapid heartbeat	• Consumption of alcohol or cigarettes
• Frequent cold or flu like feelings	• Nervous habits like nail biting, pacing etc.

Tips to Manage Stress

The following tips can help you manage your stress better:

- Note down the different ways in which you can handle the various sources of your stress.

- Remember that you cannot control everything, but you can control how you respond.

- Discuss your feelings, opinions and beliefs rather than reacting angrily, defensively or passively.

- Practice relaxation techniques like meditation, yoga or tai chi when you start feeling stressed.

- Devote a part of your day towards exercise.

- Eat healthy foods like fruits and vegetables. Avoid unhealthy foods especially those containing large amounts of sugar.

- Plan your day so that you can manage your time better, with less stress.

- Say no to people and things when required.

- Schedule time to pursue your hobbies and interests.

- Ensure you get at least 7-8 hours of sleep.

- Reduce your caffeine intake.

- Increase the time spent with family and friends.

Tips

- Force yourself to smile even if you feel stressed. Smiling makes us feel relaxed and happy.

- Stop yourself from feeling and thinking like a victim. Change your attiude and focus on being proactive.

UNIT 10.2: Digital Literacy: A Recap

Unit Objectives 🎯

At the end of this unit, you will be able to:

1. Identify the basic parts of a computer
2. Identify the basic parts of a keyboard
3. Recall basic computer terminology
4. Recall basic computer terminology
5. Recall the functions of basic computer keys
6. Discuss the main applications of MS Office
7. Discuss the benefits of Microsoft Outlook
8. Discuss the different types of e-commerce
9. List the benefits of e-commerce for retailers and customers
10. Discuss how the Digital India campaign will help boost e-commerce in India
11. Describe how you will sell a product or service on an e-commerce platform

10.2.1 Computer and Internet basics: Basic Parts of a Computer
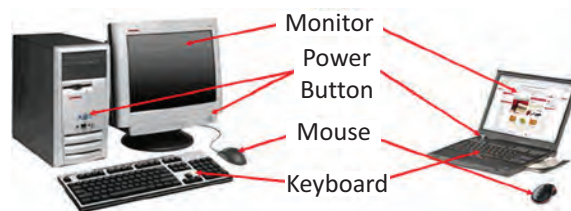
Basic Parts of a Keyboard
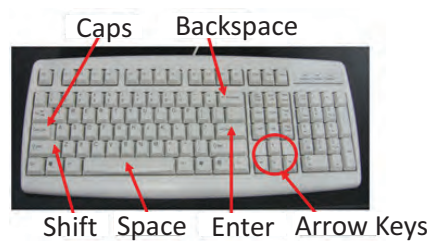
Fig. 10.2 Basic part of computer

Basic Parts of a Computer

- **Central Processing Unit (CPU)**: The brain of the computer. It interprets and carries out program instructions.

- **Hard Drive**: A device that stores large amounts of data.

- **Monitor**: The device that contains the computer screen where the information is visually displayed.

- **Desktop**: The first screen displayed after the operating system loads.

- **Background**: The image that fills the background of the desktop.

Basic Parts of a Computer

- **Mouse**: A hand-held device used to point to items on the monitor.

- **Speakers**: Devices that enable you to hear sound from the computer.

- **Printer**: A device that converts output from a computer into printed paper documents.

- **Icon**: A small picture or image that visually represents something on your computer.

- **Cursor**: An arrow which indicates where you are positioned on the screen.

- **Program Menu**: A list of programs on your computer that can be accessed from the Start menu.

- **Taskbar**: The horizontal bar at the bottom of the computer screen that lists applications that are currently in use.

- **Recycle Bin**: A temporary storage for deleted files.

Basic Internet Terms

- **The Internet**: A vast, international collection of computer networks that transfers information.

- **The World Wide Web**: A system that lets you access information on the Internet.

- **Website**: A location on the World Wide Web (and Internet) that contains information about a specific topic.

- **Homepage**: Provides information about a website and directs you to other pages on that website.

- **Link/Hyperlink**: A highlighted or underlined icon, graphic, or text that takes you to another file or object.

- **Web Address/URL**: The address for a website.

- **Address Box**: A box in the browser window where you can type in a web address.

Basic Computer Keys

- **Arrow Keys**: Press these keys to move your cursor.

- **Space bar**: Adds a space.

- **Enter/Return**: Moves your cursor to a new line.

- **Shift**: Press this key if you want to type a capital letter or the upper symbol of a key.

- **Caps Lock**: Press this key if you want all the letters you type to be capital letters. Press it again to revert back to typing lowercase letters.

- **Backspace**: Deletes everything to the left of your cursor.

Tips

- When visiting a .com address, there no need to type http:// or even www. Just type the name of the website and then press Ctrl + Enter. (Example: Type 'apple' and press Ctrl + Enter to go to www.apple.com)

- Press the Ctrl key and press the + or - to increase and decrease the size of text.

- Press F5 or Ctrl + R to refresh or reload a web page.

10.2.2 MS Office and Email: About MS Office

MS Office or Microsoft Office is a suite of computer programs developed by Microsoft. Although meant for all users, it offers different versions that cater specifically to students, home users and business users. All the programs are compatible with both, Windows and Macintosh.

Most Popular Office Products

Some of the most popular and universally used MS Office applications are:

- **Microsoft Word**: Allows users to type text and add images to a document.
- **Microsoft Excel**: Allows users to enter data into a spreadsheet and create calculations and graphs.
- **Microsoft PowerPoint**: Allows users to add text, pictures and media and create slideshows and presentations.
- **Microsoft Outlook**: Allows users to send and receive email.
- **Microsoft OneNote**: Allows users to make drawings and notes with the feel of a pen on paper.
- **Microsoft Access**: Allows users to store data over many tables.

Why Choose Microsoft Outlook

A popular email management choice especially in the workplace, Microsoft Outlook also includes an address book, notebook, web browser and calendar. Some major benefits of this program are:

- **Integrated search function**: You can use keywords to search for data across all Outlook programs.
- **Enhanced security**: Your email is safe from hackers, junk mail and phishing website email.
- **Email syncing**: Sync your mail with your calendar, contact list, notes in One Note and…your phone!
- **Offline access to email**: No Internet? No problem! Write emails offline and send them when you're connected again.

Tips

- Press Ctrl+R as a shortcut method to reply to email.
- Set your desktop notifications only for very important emails.
- Flag messages quickly by selecting messages and hitting the Insert key.
- Save frequently sent emails as a template to reuse again and again.
- Conveniently save important emails as files.

10.2.3 E-Commerce: What is E-Commerce

E-commerce is the buying or selling of goods and services, or the transmitting of money or data, electronically on the internet. E-Commerce is the short form for "electronic commerce."

Examples of E-Commerce

Some examples of e-commerce are:

- Online shopping
- Online auctions
- Online ticketing
- Electronic payments
- Internet banking

Types of E-Commerce

E-commerce can be classified based on the types of participants in the transaction. The main types of e-commerce are:

- **Business to Business (B2B)**: Both the transacting parties are businesses.
- **Business to Consumer (B2C)**: Businesses sell electronically to end-consumers.
- **Consumer to Consumer (C2C):** Consumers come together to buy, sell or trade items to other consumers.
- **Consumer-to-Business (C2B)**: Consumers make products or services available for purchase to companies looking for exactly those services or products.
- **Business-to-Administration (B2A)**: Online transactions conducted between companies and public administration.
- **Consumer-to-Administration (C2A)**: Online transactions conducted between individuals and public administration.

Benefits of E-Commerce

The e-commerce business provides some benefits for retailers and customers.

Benefits for retailers:

- Establishes an online presence
- Reduces operational costs by removing overhead costs
- Increases brand awareness through the use of good keywords
- Increases sales by removing geographical and time constraints

Benefits for customers:

- Offers a wider range of choice than any physical store
- Enables goods and services to be purchased from remote locations
- Enables consumers to perform price comparisons

Digital India Campaign

Prime Minister Narendra Modi launched the Digital India campaign in 2015, with the objective of offering every citizen of India access to digital services, knowledge and information. The campaign aims to improve the country's online infrastructure and increase internet connectivity, thus boosting the e-commerce industry.

Currently, the majority of online transactions come from tier 2 and tier 3 cities. Once the Digital India campaign is in place, the government will deliver services through mobile connectivity, which will help deliver internet to remote corners of the country. This will help the e-commerce market to enter India's tier 4 towns and rural areas.

E-Commerce Activity

Choose a product or service that you want to sell online. Write a brief note explaining how you will use existing e-commerce platforms, or create a new e-commerce platform, to sell your product or service.

Tips

- Before launching your e-commerce platform, test everything.
- Pay close and personal attention to your social media.

UNIT 10.3: Money Matters

Unit Objectives 🎯

At the end of this unit, you will be able to:

1. Discuss the importance of saving money
2. Discuss the benefits of saving money
3. Discuss the main types of bank accounts
4. Describe the process of opening a bank account
5. Differentiate between fixed and variable costs
6. Describe the main types of investment options
7. Describe the different types of insurance products
8. Describe the different types of taxes
9. Discuss the uses of online banking
10. Discuss the main types of electronic funds transfers

10.3.1 Personal Finance – Why to Save: Importance of Saving

We all know that the future is unpredictable. You never know what will happen tomorrow, next week or next year. That's why saving money steadily through the years is so important. Saving money will help improve your financial situation over time. But more importantly, knowing that you have money stashed away for an emergency will give you peace of mind. Saving money also opens the door to many more options and possibilities.

Benefits of Saving

Inculcating the habit of saving leads to a vast number of benefits. Saving helps you:

- **Become financially independent**: When you have enough money saved up to feel secure you can start making your choices, from taking a vacation whenever you want, to switching careers or starting your own business.
- **Invest in yourself through education**: Through saving, you can earn enough to pay up for courses that will add to your professional experience and ultimately result in higher paying jobs.
- **Get out of debt**: Once you have saved enough as a reserve fund, you can use your savings to pay off debts like loans or bills that have accumulated over time.
- **Be prepared for surprise expenses** : Having money saved enables you to pay for unforeseen expenses like sudden car or house repairs, without feeling financially stressed.
- **Pay for emergencies**: Saving helps you deal with emergencies like sudden health issues or emergency trips without feeling financially burdened.

- **Afford large purchases and achieve major goals:** Saving diligently makes it possible to place down payments towards major purchases and goals, like buying a home or a car.
- **Retire**: The money you have saved over the years will keep you comfortable when you no longer have the income you would get from your job.

Tips

- Break your spending habit. Try not spending on one expensive item per week, and put the money that you would have spent into your savings.
- Decide that you will not buy anything on certain days or weeks and stick to your word.

10.3.2 Types of Bank Accounts, Opening a Bank Account: Types of Bank Accounts

In India, banks offer four main types of bank accounts. These are:

• Current Accounts

• Savings Accounts

• Recurring Deposit Accounts

• Fixed Deposit Accounts

Current Accounts

Current accounts offer the most liquid deposits and thus, are best suited for businessmen and companies. As these accounts are not meant for investments and savings, there is no imposed limit on the number or amount of transactions that can be made on any given day. Current account holders are not paid any interest on the amounts held in their accounts. They are charged for certain services offered on such accounts.

Savings Accounts

Savings accounts are meant to promote savings, and are therefore the number one choice for salaried individuals, pensioners and students. While there is no restriction on the number and amount of deposits made, there are usually restrictions on the number and amount of withdrawals. Savings account holders are paid interest on their savings.

Recurring Deposit Accounts

Recurring Deposit accounts, also called RD accounts, are the accounts of choice for those who want to save an amount every month, but are unable to invest a large sum at one time. Such account holders deposit a small, fixed amount every month for a pre-determined period (minimum 6 months). Defaulting on a monthly payment results in the account holder being charged a penalty amount. The total amount is repaid with interest at the end of the specified period.

Fixed Deposit Accounts

Fixed Deposit accounts, also called FD accounts, are ideal for those who wish to deposit their savings for a long term in return for a high rate of interest. The rate of interest offered depends on the amount deposited and the time period, and also differs from bank to bank. In the case of an FD, a certain amount of money is deposited by the account holder for a fixed period of time. The money can be withdrawn when the period expires. If necessary, the depositor can break the fixed deposit prematurely. However, this usually attracts a penalty amount which also differs from bank to bank.

Opening a Bank Account

Opening a bank account is quite a simple process. Take a look at the steps to open an account of your own:

Step 1: Fill in the Account Opening Form

This form requires you to provide the following information:

• Personal details (name, address, phone number, date of birth, gender, occupation, address)

• Method of receiving your account statement (hard copy/email)

• Details of your initial deposit (cash/cheque)

• Manner of operating your account (online/mobile banking/traditional via cheque, slip books)

Ensure that you sign wherever required on the form.

Step 2: Affix your Photograph

Stick a recent photograph of yourself in the allotted space on the form.

Step 3: Provide your Know Your Customer (KYC) Details
KYC is a process that helps banks verify the identity and address of their customers. To open an account, every individual needs to submit certain approved documents with respect to photo identity (ID) and address proof. Some Officially Valid Documents (OVDs) are:

• Passport

• Driving License

• Voters' Identity Card

• PAN Card

• UIDAI (Aadhaar) Card

Step 4: Submit All your Documents

Submit the completed Account Opening Form and KYC documents. Then wait until the forms are processed and your account has been opened!

Tips

• Select the right type of account.

• Fill in complete nomination details.

• Ask about fees.

• Understand the rules.

• Check for online banking – it's convenient!

• Keep an eye on your bank balance.

10.3.3 Costs: Fixed vs Variable: What are Fixed and Variable Costs

Fixed costs and variable costs together make up a company's total cost. These are the two types of costs that companies have to bear when producing goods and services.

A fixed cost does not change with the volume of goods or services a company produces. It always remains the same.

A variable cost, on the other hand, increases and decreases depending on the volume of goods and services produced. In other words, it varies with the amount produced.

Differences Between Fixed and Variable Costs

Let's take a look at some of the main differences between fixed and variable costs:

Criteria	Fixed Costs	Variable Costs
Meaning	A cost that stays the same, regardless of the output produced.	A cost that changes when the
Nature	Time related.	Volume related.
Incurred	Incurred irrespective of units being produced.	Incurred only when units are produced.
Unit cost	Inversely proportional to the number of units produced.	Remains the same, per unit.
Examples	Depreciation, rent, salary, insurance, tax etc.	Material consumed, wages, commission on sales, packing expenses, etc.

Tips

- When trying to determine whether a cost is fixed or variable, simply ask the following question: Will the particular cost change if the company stopped its production activities? If the answer is no, then it is a fixed cost. If the answer is yes, then it is probably a variable cost.

10.3.4 Investment, Insurance and Taxes:
Investment

Investment means that money is spent today with the aim of reaping financial gains at a future time. The main types of investment options are as follows:

- **Bonds:** Bonds are instruments used by public and private companies to raise large sums of money – too large to be borrowed from a bank. These bonds are then issued in the public market and are bought by lenders.

- **Stocks:** Stocks or equity are shares that are issued by companies and are bought by the general public.

- **Small Savings Schemes:** Small Savings Schemes are tools meant to save money in small amounts. Some popular schemes are the Employees Provident Fund, Sukanya Samriddhi Scheme and National Pension Scheme.

- **Mutual Funds:** Mutual Funds are professionally managed financial instruments that invest money in different securities on behalf of investors.

- **Fixed Deposits:** A fixed amount of money is kept aside with a financial institution for a fixed amount of time in return for interest on the money.

- **Real Estate:** Loans are taken from banks to purchase real estate, which is then leased or sold with the aim of making a profit on the appreciated property price.

- **Hedge Funds:** Hedge funds invest in both financial derivatives and/or publicly traded securities.

- **Private Equity:** Private Equity is trading in the shares of an operating company that is not publicly listed and whose shares are not available on the stock market.

- **Venture Capital:** Venture Capital involves investing substantial capital in a budding company in return for stocks in that company.

Insurance

There are two types of insurance – Life Insurance and Non-Life or General Insurance.

Life Insurance

Life Insurance deals with all insurance covering human life.

Life Insurance Products

The main life insurance products are:

- **Term Insurance:** This is the simplest and cheapest form of insurance. It offers financial protection for a specified tenure, say 15 to 20 years. In the case of your death, your family is paid the sum assured. In the case of your surviving the term, the insurer pays nothing.

- **Endowment Policy:** This offers the dual benefit of insurance and investment. Part of the premium is allocated towards the sum assured, while the remaining premium gets invested in equity and debt. It pays a lump sum amount after the specified duration or on the death of the policyholder, whichever is earlier.

- **Unit-Linked Insurance Plan (ULIP):** Here part of the premium is spent on the life cover, while the remaining amount is invested in equity and debt. It helps develop a regular saving habit.

- **Money Back Life Insurance:** While the policyholder is alive, periodic payments of the partial survival benefits are made during the policy tenure. On the death of the insured, the insurance company pays the full sum assured along with survival benefits.

- **Whole Life Insurance:** It offers the dual benefit of insurance and investment. It offers insurance cover for the whole life of the person or up to 100 years whichever is earlier.

General Insurance

General Insurance deals with all insurance covering assets like animals, agricultural crops, goods, factories, cars and so on.

General Insurance Products

The main general insurance products are:

- **Motor Insurance:** This can be divided into Four Wheeler Insurance and Two Wheeler Insurance.

- **Health Insurance:** The main types of health insurance are individual health insurance, family floater health insurance, comprehensive health insurance and critical illness insurance.

- **Travel Insurance:** This can be categorised into Individual Travel Policy, Family Travel Policy, Student Travel Insurance and Senior Citizen Health Insurance.

- **Home Insurance:** This protects the house and its contents from risk.

- **Marine Insurance:** This insurance covers goods, freight, cargo etc. against loss or damage during transit by rail, road, sea and/or air.

Taxes

There are two types of taxes – Direct Taxes and Indirect Taxes.

Direct Tax

Direct taxes are levied directly on an entity or a person and are non-transferrable.

Some examples of Direct Taxes are:

- **Income Tax:** This tax is levied on your earning in a financial year. It is applicable to both, individuals and companies.

- **Capital Gains Tax:** This tax is payable whenever you receive a sizable amount of money. It is usually of two types – short term capital gains from investments held for less than 36 months and long term capital gains from investments held for longer than 36 months.

- **Securities Transaction Tax:** This tax is added to the price of a share. It is levied every time you buy or sell shares.

- **Perquisite Tax:** This tax is levied is on perks that have been acquired by a company or used by an employee.

- **Corporate Tax:** Corporate tax is paid by companies from the revenue they earn.

Indirect Tax

Indirect taxes are levied on goods or services.

Some examples of Indirect Taxes are:

- **Sales Tax:** Sales Tax is levied on the sale of a product.

- **Service Tax:** Service Tax is added to services provided in India.

- **Value Added Tax:** Value Added Tax is levied at the discretion of the state government. The tax is levied on goods sold in the state. The tax amount is decided by the state.

- **Customs Duty & Octroi:** Customs Duty is a charge that is applied on purchases that are imported from another country. Octroi is levied on goods that cross state borders within India.

- **Excise Duty:** Excise Duty is levied on all goods manufactured or produced in India.

Tips

- Think about how quickly you need your money back and pick an investment option accordingly.

- Ensure that you are buying the right type of insurance policy for yourself.

- Remember, not paying taxes can result in penalties ranging from fines to imprisonment.

10.3.5 Online Banking, NEFT, RTGS etc.: What is Online Banking

Internet or online banking allows account holders to access their account from a laptop at any location. In this way, instructions can be issued. To access an account, account holders simply need to use their unique customer ID number and password.

Internet banking can be used to:

- Find out an account balance
- Transfer amounts from one account to another
- Arrange for the issuance of cheques
- Instruct payments to be made
- Request for a cheque book
- Request for a statement of accounts
- Make a fixed deposit

Electronic Funds Transfers

Electronic funds transfer is a convenient way of transferring money from the comfort of one's own home, using integrated banking tools like internet and mobile banking.

Transferring funds via an electronic gateway is extremely convenient. With the help of online banking, you can choose to:

- Transfer funds into your own accounts of the same bank.
- Transfer funds into different accounts of the same bank.
- Transfer funds into accounts in different banks, using NEFT.
- Transfer funds into other bank accounts using RTGS.
- Transfer funds into various accounts using IMPS.

NEFT

NEFT stands for National Electronic Funds Transfer. This money transfer system allows you to electronically transfer funds from your respective bank accounts to any other account, either in the same bank or belonging to any other bank. NEFT can be used by individuals, firms and corporate organizations to transfer funds between accounts.

In order to transfer funds via NEFT, two things are required:

- A transferring bank
- A destination bank

Before you can transfer funds through NEFT, you will need to register the beneficiary who will be receiving the funds. In order to complete this registration, you will require the following

- Recipient's name
- Recipient's account number
- Recipient's bank's name
- Recipient's bank's IFSC code

RTGS

RTGS stands for Real Time Gross Settlement. This is a real time funds transfer system which enables you to transfer funds from one bank to another, in real time or on a gross basis. The transferred amount is immediately deducted from the account of one bank, and instantly credited to the other bank's account. The RTGS payment gateway is maintained by the Reserve Bank of India. The transactions between banks are made electronically.

RTGS can be used by individuals, companies and firms to transfer large sums of money. Before remitting funds through RTGS, you will need to add the beneficiary and his bank account details via your online banking account. In order to complete this registration, you will require the following information:

- Name of the beneficiary
- Beneficiary's bank address
- Beneficiary's account number
- Beneficiary's bank's IFSC code

IMPS

IMPS stands for Immediate Payment Service. This is a real-time, inter-bank, electronic funds transfer system used to transfer money instantly within banks across India. IMPS enables users to make instant electronic transfer payments using mobile phones through both, Mobile Banking and SMS. It can also be used through ATMs and online banking. IMPS is available 24 hours a day and 7 days a week. The system features a secure transfer gateway and immediately confirms orders that have been fulfilled.

To transfer money through IMPS, the you need to:

- Register for IMPS with your bank

- Receive a Mobile Money Identifier (MMID) from the bank

- Receive a MPIN from the bank

Once you have both these, you can login or make a request through SMS to transfer a particular amount to a beneficiary.

For the beneficiary to receive the transferred money, he must:

1. Link his mobile number with his respective account
2. Receive the MMID from the bank

In order to initiate a money transfer through IMPS, you will need to enter the following information:

1. The beneficiary's mobile number
2. The beneficiary's MMID
3. The transfer amount
4. Your MPIN

As soon as money has been deducted from your account and credited into the beneficiary's account, you will be sent a confirmation SMS with a transaction reference number, for future reference.

277

Differences Between NEFT, RTGS & IMPS

Criteria	NEFT	RTGS	IMPS
Settlement	Done in batches	Real-time	Real-time
Full form	National Electronic Fund Transfer	Real Time Gross Settlement	Immediate Payment Service
Timings on Monday – Friday	8:00 am – 6:30 pm	9:00 am – 4:30 pm	24x7
Timings on Saturday	8:00 am – 1:00 pm	9:00 am – 1:30 pm	24x7
Minimum amount of money transfer limit	`1	`2 lacs	`1
Maximum amount of money transfer limit	`10 lacs	`10 lacs per day	`2 lacs
Maximum charges as per RBI	Upto 10,000 – `2.5 above 10,000 – 1 lac – `5 above 1 – 2 lacs – `15 above 2 – 5 lacs – `25 above 5 – 10 lacs – `25	above 2 – 5 lacs – `25 above 5 – 10 lacs – `50	Upto 10,000 – `5 above 10,000 – 1 lac – `5 above 1 – 2 lacs – `15

Tips

- Never click on any links in any e-mail message to access your online banking website.
- You will never be asked for your credit or debit card details while using online banking.
- Change your online banking password regularly.

UNIT 10.4: Preparing for Employment & Self Employment

Unit Objectives 🎯

At the end of this unit, you will be able to:

1. Discuss the steps to prepare for an interview

2. Discuss the steps to create an effective Resume

3. Discuss the most frequently asked interview questions

4. Discuss how to answer the most frequently asked interview questions

5. Discuss basic workplace terminology

10.4.1 Interview Preparation: How to Prepare for an Interview

The success of your getting the job that you want depends largely on how well your interview for that job goes. Therefore, before you go in for your interview, it is important that you prepare for it with a fair amount of research and planning. Take a look at the steps to follow in order to be well prepared for an interview:

1. **Research the organization that you are having the interview with.**

   • Studying the company beforehand will help you be more prepared at the time of the interview. Your knowledge of the organization will help you answer questions at the time of the interview, and will leave you looking and feeling more confident. This is sure to make you stand out from other, not as well informed, candidates.

   • Look for background information on the company. Ty and find an overview of the company and its industry profile.

   • Visit the company website to get a good idea of what the company does. A company website offers a wealth of important information. Read and understand the company's mission statement. Pay attention to the company's products/services and client list. Read through any press releases to get an idea of the company's projected growth and stability.

   • Note down any questions that you have after your research has been completed.

2. **Think about whether your skills and qualifications match the job requirements.**

   • Carefully read through and analyze the job description.

   • Make a note of the knowledge, skills and abilities required to fulfill the job requirements.

   • Take a look at the organization hierarchy. Figure out where the position you are applying for fits into this hierarchy.

3. **Go through the most typical interview questions asked, and prepare your responses.**

   • Remember, in most interviews a mix of resume-based, behavioral and case study questions are asked.

   • Think about the kind of answers you would like to provide to typical questions asked in these three areas.

   • Practice these answers until you can express them confidently and clearly.

4. **Plan your attire for the interview.**

   • It is always safest to opt for formal business attire, unless expressly informed to dress in business casual (in which case you should use your best judgement).

   • Ensure that your clothes are clean and well-ironed. Pick neutral colours – nothing too bright or flashy.

   • The shoes you wear should match your clothes, and should be clean and suitable for an interview.

   • Remember, your aim is to leave everyone you meet with the impression that you are a professional and highly efficient person.

5. **Ensure that you have packed everything that you may require during the interview.**

   • Carry a few copies of your resume. Use a good quality paper for your resume print outs.

   • Always take along a notepad and a pen.

   • Take along any information you may need to refer to, in order to fill out an application form.

   • Carry a few samples of your work, if relevant.

6. **Remember the importance of non-verbal communication.**

   • Practice projecting confidence. Remind yourself to smile and make eye contact. Practice giving a firm handshake.

   • Keep in mind the importance of posture. Practice sitting up straight. Train yourself to stop nervous gestures like fidgeting and foot-tapping.

   • Practice keeping your reactions in check. Remember, your facial expressions provide a good insight into your true feelings. Practice projecting a positive image.

7. **Make a list of questions to end the interview with.**

   • Most interviews will end with the interviewer(s) asking if you have any questions. This is your chance to show that you have done your research and are interested in learning more about the company.

   • If the interviewer does not ask you this question, you can inform him/her that you have some queries that you would like to discuss. This is the time for you to refer to the notes you made while studying the company.

   • Some good questions to ask at this point are:
      o What do you consider the most important criteria for success in this job?
      o How will my performance be evaluated?
      o What are the opportunities for advancement?
      o What are the next steps in the hiring process?

   • Remember, never ask for information that is easily available on the company website.

Tips

• Ask insightful and probing questions.

• When communicating, use effective forms of body language like smiling, making eye contact, and actively listening and nodding. Don't slouch, play with nearby items, fidget, chew gum, or mumble.

10.4.2 Preparing an Effective Resume: How to Create an Effective Resume

A resume is a formal document that lists a candidate's work experience, education and skills. A good resume gives a potential employer enough information to believe the applicant is worth interviewing. That's why it is so important to create a résumé that is effective. Take a look at the steps to create an effective resume:

Step 1: Write the Address Section

The Address section occupies the top of your resume. It includes information like your name, address, phone number and e-mail address. Insert a bold line under the section to separate it from rest of your resume.

Example:

Jasmine Watts
Breach Candy, Mumbai – India
Contact No: +91 2223678270
Email: jasmine.watts@gmail.com

_____

Step 2: Add the Profile Summary Section

This part of your resume should list your overall experiences, achievements, awards, certifications and strengths. You can make your summary as short as 2-3 bullet points or as long as 8-10 bullet points.

Example:

Profile Summary

• A Content Writer graduated from University of Strathclyde having 6 years of experience in writing website copy.

• Core expertise lies in content creation for e-learning courses, specifically for the K-12 segment.

Step 3: Include Your Educational Qualifications

When listing your academic records, first list your highest degree. Then add the second highest qualification under the highest one and so on. To provide a clear and accurate picture of your educational background, it is critical that include information on your position, rank, percentage or CPI for every degree or certification that you have listed.

If you have done any certifications and trainings, you can add a Trainings & Certifications section under your Educational Qualifications section.

Example:

Educational Qualifications

• Masters in International Management (2007) from Columbia University with 8.8 CPI.

• Bachelor of Management Studies (2004) from Mumbai University with 87% marks.

• 10+2 with Math, Stats (2001) from Maharashtra Board with 91% marks.

• High School (1999) from Maharashtra Board with 93% marks.

Step 4: List Your Technical Skills
When listing your technical skills, start with the skills that you are most confident about. Then add the skills that you do not have as good a command over. It is perfectly acceptable to include just one skill, if you feel that particular skill adds tremendous value to your résumé. If you do not have any technical skills, you can omit this step.
Example:

> **Technical Skills**
> • Flash
>
> • Photoshop

Step 5: Insert Your Academic Project Experience
List down all the important projects that you have worked on. Include the following information in this section:

> • Project title   • Organization   • Platform used
> • Contribution   • Description

Example:

> **Academic Projects**
> **Project Title**: Different Communication Skills
> **Organization**: True Blue Solutions
> **Platform used**: Articulate
> **Contribution**: Content writing and graphic visualization
> **Description**: Development of storyboards for corporate induction & training programs

Step 6: List Your Strengths
This is where you list all your major strengths. This section should be in the form of a bulleted list.
Example:

> **Strengths**
> • Excellent oral, written and presentation skills
> • Action-oriented and result-focused
> • Great time management skills

Step 7: List Your Extracurricular Activities
It is very important to show that you have diverse interests and that your life consists of more than academics. Including your extracurricular activities can give you an added edge over other candidates who have similar academic scores and project experiences. This section should be in the form of a bulleted list.

Example:

> **Extracurricular Activities**
> - Member of the Debate Club
> - Played tennis at a national level
> - Won first prize in the All India Camel Contest, 2010

Step 8: Write Your Personal Details

The last section of your résumé must include the following personal information:

- Date of birth
- Nationality
- Gender & marital status
- Languages known

Example:

> Personal Details
> - Date of birth: 25th May, 1981
> - Gender & marital status: Female, Single
> - Nationality: Indian
> - Languages known: English, Hindi, Tamil, French

Tips

- Keep your resume file name short, simple and informational.
- Make sure the resume is neat and free from typing errors.
- Always create your resume on plain white paper.

10.4.3 Interview FAQs

Take a look at some of the most frequently asked interview questions, and some helpful tips on how to answer them.

Q1. Can you tell me a little about yourself?

Tips to answer:

- Don't provide your full employment or personal history.
- Offer 2-3 specific experiences that you feel are most valuable and relevant.
- Conclude with how those experiences have made you perfect for this specific role.

Q2. How did you hear about the position?

Tips to answer:

- Tell the interviewer how you heard about the job – whether it was through a friend (name the friend), event or article (name them) or a job portal (say which one).
- Explain what excites you about the position and what in particular caught your eye about this role.

Q3. What do you know about the company?

Tips to answer:

- Don't recite the company's About Us page.
- Show that you understand and care about the company's goals.
- Explain why you believe in the company's mission and values.

Q4. Why do you want this job?

Tips to answer:

- Show that you are passionate about the job.
- Identify why the role is a great fit for you.
- Explain why you love the company.

Q5. Why should we hire you?

Tips to answer:

- Prove through your words that you can not only do the work, but can definitely deliver excellent results.
- Explain why you would be a great fit with the team and work culture.
- Explain why you should be chosen over any other candidate.

Q6. What are your greatest professional strengths?

Tips to answer:

- Be honest – share some of your real strengths, rather than give answers that you think sound good.
- Offer examples of specific strengths that are relevant to the position you are applying for.
- Provide examples of how you've demonstrated these strengths.

Q7. What do you consider to be your weaknesses?

Tips to answer:

- The purpose of this question is to gauge your self-awareness and honesty.
- Give an example of a trait that you struggle with, but that you're working on to improve.

Q8. What are your salary requirements?

Tips to answer:

- Do your research beforehand and find out the typical salary range for the job you are applying for.

- Figure out where you lie on the pay scale based on your experience, education, and skills.

- Be flexible. Tell the interviewer that you know your skills are valuable, but that you want the job and are willing to negotiate.

Q9. What do you like to do outside of work?

Tips to answer:

- The purpose of this question is to see if you will fit in with the company culture.

- Be honest – open up and share activities and hobbies that interest and excite you.

Q10. If you were an animal, which one would you want to be?

Tips to answer:

- The purpose of this question is to see if you are able to think on your feet.

- There's no wrong answer – but to make a great impression try to bring out your strengths or personality traits through your answer.

Q11: What do you think we could do better or differently?

Tips to answer:

- The purpose of this question is to see if you have done your research on the company, and to test whether you can think critically and come up with new ideas.

- Suggest new ideas. Show how your interests and expertise would help you execute these ideas.

Q12: Do you have any questions for us?

Tips to answer:

- Do not ask questions to which the answers can be easily found on the company website or through a quick online search.

- Ask intelligent questions that show your ability to think critically.

Tips

- Be honest and confident while answering.

- Use examples of your past experiences wherever possible to make your answers more impactful.

10.4.4 Work Readiness – Terms & Terminologies: Basic Workplace Terminology

Every employee should be well versed in the following terms:

- **Annual leave:** Paid vacation leave given by employers to employees.
- **Background Check:** A method used by employers to verify the accuracy of the information provided by potential candidates.
- **Benefits:** A part of an employee's compensation package.
- **Breaks:** Short periods of rest taken by employees during working hours.
- **Compensation Package:** The combination of salary and benefits that an employer provides to his/her employees.
- **Compensatory Time (Comp Time):** Time off in lieu of pay.
- **Contract Employee:** An employee who works for one organization that sells said employee's services to another company, either on a project or time basis.
- **Contract of Employment:** When an employee is offered work in exchange for wages or salary, and accepts the offer made by the employer, a contract of employment exists.
- **Corporate Culture:** The beliefs and values shared by all the members of a company, and imparted from one generation of employees to another.
- **Counter Offer/Counter Proposal:** A negotiation technique used by potential candidates to increase the amount of salary offered by a company.
- **Cover Letter:** A letter that accompanies a candidate's resume. It emphasizes the important points in the candidate's resume and provides real examples that prove the candidate's ability to perform the expected job role.
- **Curriculum Vitae (CV)/Resume:** A summary of a candidate's achievements, educational background, work experience, skills and strengths.
- **Declining Letter:** A letter sent by an employee to an employer, turning down the job offer made by the employer to the employee.
- **Deductions:** Amounts subtracted from an employee's pay and listed on the employee's pay slip.
- **Discrimination:** The act of treating one person not as favourably as another person.
- **Employee:** A person who works for another person in exchange for payment.
- **Employee Training:** A workshop or in-house training that an employee is asked to attend by his or her superior, for the benefit of the employer.
- **Employment Gaps:** Periods of unemployed time between jobs.
- **Fixed-Term Contract:** A contract of employment which gets terminated on an agreed-upon date.
- **Follow-Up:** The act of contacting a potential employer after a candidate has submitted his or her resume.
- **Freelancer/Consultant/Independent Contractor:** A person who works for him or herself and pitches for temporary jobs and projects with different employers.
- **Holiday**: Paid time-off from work.
- **Hourly Rate**: The amount of salary or wages paid for 60 minutes of work.

- **Internship**: A job opportunity offered by an employer to a potential employee, called an intern, to work at the employer's company for a fixed, limited time period.

- **Interview**: A conversation between a potential employee and a representative of an employer, in order to determine if the potential employee should be hired.

- **Job Application**: A form which asks for a candidate's information like the candidate's name, address, contact details and work experience. The purpose of a candidate submitting a job application, is to show that candidate's interest in working for a particular company.

- **Job Offer**: An offer of employment made by an employer to a potential employee.

- **Job Search Agent**: A program that enables candidates to search for employment opportunities by selecting criteria listed in the program, for job vacancies.

- **Lay Off**: A lay off occurs when an employee is temporarily let go from his or her job, due to the employer not having any work for that employee.

- **Leave**: Formal permission given to an employee, by his or her employer, to take a leave of absence from work.

- **Letter of Acceptance**: A letter given by an employer to an employee, confirming the offer of employment made by the employer, as well as the conditions of the offer.

- **Letter of Agreement**: A letter that outlines the terms of employment.

- **Letter of Recommendation**: A letter written for the purpose of validating the work skills of a person.

- **Maternity Leave**: Leave taken from work by women who are pregnant, or who have just given birth.

- **Mentor**: A person who is employed at a higher level than you, who offers you advice and guides you in your career.

- **Minimum wage**: The minimum wage amount paid on an hourly basis.

- **Notice**: An announcement made by an employee or an employer, stating that the employment contract will end on a particular date.

- **Offer of Employment**: An offer made by an employer to a prospective employee that contains important information pertaining to the job being offered, like the starting date, salary, working conditions etc.

- **Open-Ended Contract**: A contract of employment that continues till the employer or employee terminates it.

- **Overqualified**: A person who is not suited for a particular job because he or she has too many years of work experience, or a level of education that is much higher than required for the job, or is currently or was previously too highly paid.

- **Part-Time Worker**: An employee who works for fewer hours than the standard number of hours normally worked.

- **Paternity Leave**: Leave granted to a man who has recently become a father.

- **Recruiters/Headhunters/Executive Search Firms**: Professionals who are paid by employers to search for people to fill particular positions.

- **Resigning/Resignations**: When an employee formally informs his or her employer that he or she is quitting his or her job.

- **Self-Employed**: A person who has his or her own business and does not work in the capacity of an employee.

- **Time Sheet**: A form that is submitted to an employer, by an employee, that contains the number of hours worked every day by the employee.

UNIT 10.5: Understanding Entrepreneurship

Unit Objectives

1. At the end of this unit, you will be able to:
2. Discuss the concept of entrepreneurship
3. Discuss the importance of entrepreneurship
4. Describe the characteristics of an entrepreneur
5. Describe the different types of enterprises
6. List the qualities of an effective leader
7. Discuss the benefits of effective leadership
8. List the traits of an effective team
9. Discuss the importance of listening effectively
10. Discuss how to listen effectively
11. Discuss the importance of speaking effectively
12. Discuss how to speak effectively
13. Discuss how to solve problems
14. List important problem solving traits
15. Discuss ways to assess problem solving skills
16. Discuss the importance of negotiation
17. Discuss how to negotiate
18. Discuss how to identify new business opportunities
19. Discuss how to identify business opportunities within your business
20. Understand the meaning of entrepreneur
21. Describe the different types of entrepreneurs
22. List the characteristics of entrepreneurs
23. Recall entrepreneur success stories
24. Discuss the entrepreneurial process
25. Describe the entrepreneurship ecosystem
26. Discuss the government's role in the entrepreneurship ecosystem
27. Discuss the current entrepreneurship ecosystem in India
28. Understand the purpose of the Make in India campaign
29. Discuss the relationship between entrepreneurship and risk appetite
30. Discuss the relationship between entrepreneurship and resilience
31. Describe the characteristics of a resilient entrepreneur
32. Discuss how to deal with failure

10.5.1 Concept Introduction, (Characteristic of an Entrepreneur, types of firms / types of enterprises): Entrepreneurs and Entrepreneurship

Anyone who is determined to start a business, no matter what the risk, is an entrepreneur. Entrepreneurs run their own start-up, take responsibility for the financial risks and use creativity, innovation and vast reserves of self-motivation to achieve success. They dream big and are determined to do whatever it takes to turn their idea into a viable offering. The aim of an entrepreneur is to create an enterprise. The process of creating this enterprise is known as entrepreneurship.

Importance of Entrepreneurship

Entrepreneurship is very important for the following reasons:

1. It results in the creation of new organizations
2. It brings creativity into the marketplace
3. It leads to improved standards of living
4. It helps develop the economy of a country

Characteristics of Entrepreneurs

All successful entrepreneurs have certain characteristics in common.

They are all:

• Extremely passionate about their work

• Confident in themselves

• Disciplined and dedicated

• Motivated and driven

• Highly creative

• Visionaries

• Open-minded

• Decisive

Entrepreneurs also have a tendency to:

• Have a high risk tolerance

• Thoroughly plan everything

• Manage their money wisely

• Make their customers their priority

• Understand their offering and their market in detail

• Ask for advice from experts when required

• Know when to cut their losses

Examples of Famous Entrepreneurs

Some famous entrepreneurs are:

• Bill Gates (Founder of Microsoft)

• Steve Jobs (Co-founder of Apple)

• Mark Zuckerberg (Founder of Facebook)

• Pierre Omidyar (Founder of eBay)

Types of Enterprises

As an entrepreneur in India, you can own and run any of the following types of enterprises:

Sole Proprietorship

In a sole proprietorship, a single individual owns, manages and controls the enterprise. This type of business is the easiest to form with respect to legal formalities. The business and the owner have no separate legal existence. All profit belongs to the proprietor, as do all the losses - the liability of the entrepreneur is unlimited.

Partnership

A partnership firm is formed by two or more people. The owners of the enterprise are called partners. A partnership deed must be signed by all the partners. The firm and its partners have no separate legal existence. The profits are shared by the partners. With respect to losses, the liability of the partners is unlimited. A firm has a limited life span and must be dissolved when any one of the partners dies, retires, claims bankruptcy or goes insane.

Limited Liability Partnership (LLP)

In a Limited Liability Partnership or LLP, the partners of the firm enjoy perpetual existence as well as the advantage of limited liability. Each partner's liability is limited to their agreed contribution to the LLP. The partnership and its partners have a separate legal existence.

Tips

• Learn from others' failures.

• Be certain that this is what you want.

• Search for a problem to solve, rather than look for a problem to attach to your idea.

10.5.2 Leadership & Teamwork:
Leadership and Leaders

Leadership means seeing an example for others to follow. Seeing a good example means not asking someone to do something that you wouldn't willingly want to do yourself. Leadership is about figuring out what to do in order to win as a team, and as a company.

Leaders believe in doing the right things. They also believe in helping others to do the right things. An effective leader is someone who:

• Creates an inspiring vision of the future.

• Motivates and inspires his team to pursue that vision.

Leadership Qualities That All Entrepreneurs Need

Building a successful enterprise is only possible if the entrepreneur in charge possesses excellent leadership qualities. Some critical leadership skills that every entrepreneur must have are:

1. **Pragmatism**: This means having the ability to highlight all obstacles and challenges, in order to resolve issues and reduce risks.

2. **Humility**: This means admitting to mistakes often and early, and being quick to take responsibility for your actions. Mistakes should be viewed as challenges to overcome, not opportunities to point blame.

3. **Flexibility**: It is critical for a good leader to be very flexible and quickly adapt to change. It is equally critical to know when to adapt and when not to.

4. **Authenticity**: This means showing both, your strengths and your weaknesses. It means being human and showing others that you are human.

5. **Reinvention**: This means refreshing or changing your leadership style when necessary. To do this, it's important to learn where your leadership gaps lie and find out what resources are required to close them.

6. **Awareness**: This means taking the time to recognize how others view you. It means understanding how your presence affects those around you.

Benefits of Effective Leadership

Effective leadership results in numerous benefits. Great leadership leads to the leader successfully:

• Gaining the loyalty and commitment of the team members

• Motivating the team to work towards achieving the company's goals and objectives

• Building morale and instilling confidence in the team members

• Fostering mutual understanding and team-spirit among team members

• Convincing team members about the need to change when a situation requires adaptability

Teamwork and Teams

Teamwork occurs when the people in a workplace combine their individual skills to pursue a common goal. Effective teams are made up of individuals who work together to achieve this common goal. A great team is one who holds themselves accountable for the end result.

Importance of Teamwork in Entrepreneurial Success

For an entrepreneurial leader, building an effective team is critical to the success of a venture. An entrepreneur must ensure that the team he builds possesses certain crucial qualities, traits and characteristics. An effective team is one which has:

1. **Unity of purpose:** All the team members should clearly understand and be equally committed to the purpose, vision and goals of the team.

2. **Great communication skills:** Team members should have the ability to express their concerns, ask questions and use diagrams, and charts to convey complex information.

3. **The ability to collaborate:** Every member should feel entitled to provide regular feedback on new ideas.

4. **Initiative:** The team should consist of proactive individuals. The members should have the enthusiasm to come up with new ideas, improve existing ideas, and conduct their own research.

5. **Visionary members:** The team should have the ability to anticipate problems and act on these potential problem before they turn into real problems.

6. **Great adaptability skills:** The team must believe that change is a positive force. Change should be seen as the chance to improve and try new things.

7. **Excellent organizational skills:** The team should have the ability to develop standard work processes, balance responsibilities, properly plan projects, and set in place methods to measure progress and ROI.

Tips

- Don't get too attached to your original idea. Allow it to evolve and change.

- Be aware of your weaknesses and build a team that will complement your shortfalls.

- Hiring the right people is not enough. You need to promote or incentivize your most talented people to keep them motivated.

- Earn your team's respect.

10.5.3 Communication Skills: Listening & Speaking:
The Importance of Listening Effectively

Listening is the ability to correctly receive and understand messages during the process of communication. Listening is critical for effective communication. Without effective listening skills, messages can easily be misunderstood. This results in a communication breakdown and can lead to the sender and the receiver of the message becoming frustrated or irritated.

It's very important to note that listening is not the same as hearing. Hearing just refers to sounds that you hear. Listening is a whole lot more than that. To listen, one requires focus. It means not only paying attention to the story, but also focusing on how the story is relayed, the way language and voice is used, and even how the speaker uses their body language. The ability to listen depends on how effectively one can perceive and understand both, verbal and non-verbal cues.

How to Listen Effectively

To listen effectively you should:

- Stop talking
- Stop interrupting
- Focus completely on what is being said
- Nod and use encouraging words and gestures
- Be open-minded
- Think about the speaker's perspective
- Be very, very patient
- Pay attention to the tone that is being used
- Pay attention to the speaker's gestures, facial expressions and eye movements
- Not try and rush the person
- Not let the speaker's mannerisms or habits irritate or distract you

How to Listen Effectively

How successfully a message gets conveyed depends entirely on how effectively you are able to get it through. An effective speaker is one who enunciates properly, pronounces words correctly, chooses the right words and speaks at a pace that is easily understandable. Besides this, the words spoken out loud need to match the gestures, tone and body language used.

What you say, and the tone in which you say it, results in numerous perceptions being formed. A person who speaks hesitantly may be perceived as having low self-esteem or lacking in knowledge of the discussed topic. Those with a quiet voice may very well be labelled as shy. And those who speak in commanding tones with high levels of clarity, are usually considered to be extremely confident. This makes speaking a very critical communication skill.

How to Speak Effectively

To speak effectively you should:

- Incorporate body language in your speech like eye contact, smiling, nodding, gesturing etc.

- Build a draft of your speech before actually making your speech.

- Ensure that all your emotions and feelings are under control.

- Pronounce your words distinctly with the correct pitch and intensity. Your speech should be crystal clear at all times.

- Use a pleasant and natural tone when speaking. Your audience should not feel like you are putting on an accent or being unnatural in any way.

- Use precise and specific words to drive your message home. Ambiguity should be avoided at all costs.

- Ensure that your speech has a logical flow.

- Be brief. Don't add any unnecessary information.

- Make a conscious effort to avoid irritating mannerisms like fidgeting, twitching etc.

- Choose your words carefully and use simple words that the majority of the audience will have no difficulty understanding.

- Use visual aids like slides or a whiteboard.

- Speak slowly so that your audience can easily understand what you're saying. However, be careful not to speak too slowly because this can come across as stiff, unprepared or even condescending.

- Remember to pause at the right moments.

Tips

- If you're finding it difficult to focus on what someone is saying, try repeating their words in your head.

- Always maintain eye contact with the person that you are communicating with, when speaking as well as listening. This conveys and also encourages interest in the conversation.

10.5.4 Problem Solving & Negotiation skills: What is a Problem?

As per The Concise Oxford Dictionary (1995), a problem is, "A doubtful or difficult matter requiring a solution"

All problems contain two elements:

1. Goals   2. Obstacles

The aim of problem solving is to recognize the obstacles and remove them in order to achieve the goals.

How to Solve Problems

Solving a problem requires a level of rational thinking. Here are some logical steps to follow when faced with an issue:

Step 1: Identify the problem   **Step 2:** Study the problem in detail

Step 3: List all possible solutions   **Step 4:** Select the best solution

Step 5: Implement the chosen solution   **Step 6:** Check that the problem has really been solved

Important Traits for Problem Solving

Highly developed problem solving skills are critical for both, business owners and their employees. The following personality traits play a big role in how effectively problems are solved:

- Being open minded
- Being proactive
- Having a positive attitude
- Asking the right questions
- Not panicking
- Focusing on the right problem

How to Assess for Problem Solving Skills

As an entrepreneur, it would be a good idea to assess the level of problem solving skills of potential candidates before hiring them. Some ways to assess this skill are through:

1. **Application forms**: Ask for proof of the candidate's problem solving skills in the application form.

2. **Psychometric tests**: Give potential candidates logical reasoning and critical thinking tests and see how they fare.

3. **Interviews**: Create hypothetical problematic situations or raise ethical questions and see how the candidates respond.

4. **Technical questions**: Give candidates examples of real life problems and evaluate their thought process.

What is Negotiation?

Negotiation is a method used to settle differences. The aim of negotiation is to resolve differences through a compromise or agreement while avoiding disputes. Without negotiation, conflicts are likely to lead to resentment between people. Good negotiation skills help satisfy both parties and go a long way towards developing strong relationships.

Why Negotiate

Starting a business requires many, many negotiations. Some negotiations are small while others are critical enough to make or break a startup. Negotiation also plays a big role inside the workplace. As an entrepreneur, you need to know not only know how to negotiate yourself, but also how to train employees in the art of negotiation.

How to Negotiate

Take a look at some steps to help you negotiate:

Step 1: Pre-Negotiation Preparation	Agree on where to meet to discuss the problem, decide who all will be present and set a time limit for the discussion.
Step 2: Discuss the Problem	This involves asking questions, listening to the other side, putting your views forward and clarifying doubts.
Step 3: Clarify the Objective	Ensure that both parties want to solve the same problem and reach the same goal.
Step 4: Aim for a Win-Win Outcome	Try your best to be open minded when negotiating. Compromise and offer alternate solutions to reach an outcome where both parties win.
Step 5: Clearly Define the Agreement	When an agreement has been reached, the details of the agreement should be crystal clear to both sides, with no scope for misunderstandings.
Step 6: Implement the Agreed Upon Solution	Agree on a course of action to set the solution in motion

Tips

- Know exactly what you want before you work towards getting it
- Give more importance to listening and thinking, than speaking
- Focus on building a relationship rather than winning
- Remember that your people skills will affect the outcome
- Know when to walk away – sometimes reaching an agreement may not be possible

10.5.5 Business Opportunities Identification: Entrepreneurs and Opportunities

"The entrepreneur always searches for change, responds to it and exploits it as an opportunity."
Peter Drucker

The ability to identify business opportunities is an essential characteristic of an entrepreneur.

What is an Opportunity?

The word opportunity suggests a good chance or a favourable situation to do something offered by circumstances.

A business opportunity means a good or favourable change available to run a specific business in a given environment, at a given point of time.

Common Questions Faced by Entrepreneurs

A critical question that all entrepreneurs face is how to go about finding the business opportunity that is right for them.

Some common questions that entrepreneurs constantly think about are:

• Should the new enterprise introduce a new product or service based on an unmet need?

• Should the new enterprise select an existing product or service from one market and offer it in another where it may not be available?

• Should the enterprise be based on a tried and tested formula that has worked elsewhere?

It is therefore extremely important that entrepreneurs must learn how to identify new and existing business opportunities and evaluate their chances of success.

When is an Idea an Opportunity?

An idea is an opportunity when:

• It creates or adds value to a customer

• It solves a significant problem, removes a pain point or meets a demand

• Has a robust market and profit margin

• Is a good fit with the founder and management team at the right time and place

Factors to Consider When Looking for Opportunities

Consider the following when looking for business opportunities:

• Economic trends
• Changes in funding
• Changing relationships between vendors, partners and suppliers

• Market trends
• Changes in political support
• Shift in target audience

Ways to Identify New Business Opportunities

1. Identify Market Inefficiencies

    When looking at a market, consider what inefficiencies are present in the market. Think about ways to correct these inefficiencies.

2. Remove Key Hassles

    Rather than create a new product or service, you can innovatively improve a product, service or process.

3. Create Something New

    Think about how you can create a new experience for customers, based on existing business models.

4. Pick a Growing Sector/Industry

    Research and find out which sectors or industries are growing and think about what opportunities you can tap in the same.

5. Think About Product Differentiation

    If you already have a product in mind, think about ways to set it apart from the existing ones.

Ways to Identify Business Opportunities Within Your Business

1. SWOT Analysis

    An excellent way to identify opportunities inside your business is by creating a SWOT analysis. The acronym SWOT stands for strengths, weaknesses, opportunities, and threats. SWOT analysis framework:

STRENGTH

What are your strengths?

What unique capabilities do you posses?

What do you do better than others?

What do others percieve as your strengths?

S

WEAKNESSES

What are your weaknesses?

What do your competitors do better than you?

W

OPPORTUNITIES

What Trends may positively impact you?

What oppprtunities are available to you?

O

T

THREATS

Do you have solid financial support?

What trends may negatively impact you?

Fig. 10.3 Business opportunities

Consider the following when looking for business opportunities:

By looking at yourself and your competitors using the SWOT framework, you can uncover opportunities that you can exploit, as well as manage and eliminate threats that could derail your success.

2. Establishing Your USP

Establish your USP and position yourself as different from your competitors. Identify why customers should buy from you and promote that reason.

Opportunity Analysis

Once you have identified an opportunity, you need to analyze it.

To analyze an opportunity, you must:

- Focus on the idea

- Focus on the market of the idea

- Talk to industry leaders in the same space as the idea

- Talk to players in the same space as the idea

Tips

- Remember, opportunities are situational.

- Look for a proven track record.

- Avoid the latest craze.

- Love your idea.

10.5.6 Entrepreneurship Support Eco - System: What is an Entrepreneur?

An entrepreneur is a person who:

- Does not work for an employee
- Runs a small enterprise
- Assumes all the risks and rewards of the enterprise, idea, good or service

Types of Entrepreneurs

There are four main types of entrepreneurs:

1. **The Traditional Entrepreneur**: This type of entrepreneur usually has some kind of skill – they can be a carpenter, mechanic, cook etc. They have businesses that have been around for numerous years like restaurants, shops and carpenters. Typically, they gain plenty of experience in a particular industry before they begin their own business in a similar field.

2. **The Growth Potential Entrepreneur**: The desire of this type of entrepreneur is to start an enterprise that will grow, win many customers and make lots of money. Their ultimate aim is to eventually sell their enterprise for a nice profit. Such entrepreneurs usually have a science or technical background.

3. **The Project-Oriented Entrepreneur**: This type of entrepreneur generally has a background in the Arts or psychology. Their enterprises tend to be focus on something that they are very passionate about.

4. **The Lifestyle Entrepreneur**: This type of entrepreneur has usually worked as a teacher or a secretary. They are more interested in selling something that people will enjoy, rather than making lots of money.

Characteristics of an Entrepreneur

Successful entrepreneurs have the following characteristics:

- They are highly motivated
- They are creative and persuasive
- They are mentally prepared to handle each and every task
- They have excellent business skills – they know how to evaluate their cash flow, sales and revenue
- They are willing to take great risks
- They are very proactive – this means they are willing to do the work themselves, rather than wait for someone else to do it
- They have a vision – they are able to see the big picture
- They are flexible and open-minded
- They are good at making decisions

Entrepreneur Success Stories

Dhiru Bhai Ambani

Dhirubhai Ambani began his entrepreneurial career by selling "bhajias" to pilgrims in Mount Girnar on weekends. At 16, he moved to Yemen where he worked as a gas-station attendant, and as a clerk in an oil company. He returned to India with Rs. 50,000 and started a textile trading company. Reliance went on to become the first Indian company to raise money in global markets and the first Indian company to feature in Forbes 500 list.

Dr. Karsanbhai Patel

Karsanbhai Patel made detergent powder in the backyard of his house. He sold his product door-to-door and offered a money back guarantee with every pack that was sold. He charged Rs. 3 per kg when the cheapest detergent at that time was Rs.13 per kg. Dr. Patel eventually started Nirma which became a whole new segment in the Indian domestic detergent market.

The Entrepreneurial Process

Let's take a look at the stages of the entrepreneurial process.

Stage 1: Idea Generation. The entrepreneurial process begins with an idea that has been thought of by the entrepreneur. The idea is a problem that has the potential to be solved.

Stage 2: Germination or Recognition. In this stage a possible solution to the identified problem is thought of.

Stage 3: Preparation or Rationalization. The problem is studied further and research is done to find out how others have tried to solve the same problem.

Stage 4: Incubation or Fantasizing. This stage involves creative thinking for the purpose of coming up with more ideas. Less thought is given to the problem areas.

Stage 5: Feasibility Study: The next step is the creation of a feasibility study to determine if the idea will make a profit and if it should be seen through.

Stage 6: Illumination or Realization. This is when all uncertain areas suddenly become clear. The entrepreneur feels confident that his idea has merit.

Stage 7: Verification or Validation. In this final stage, the idea is verified to see if it works and if it is useful.

Take a look at the diagram below to get a better idea of this process.
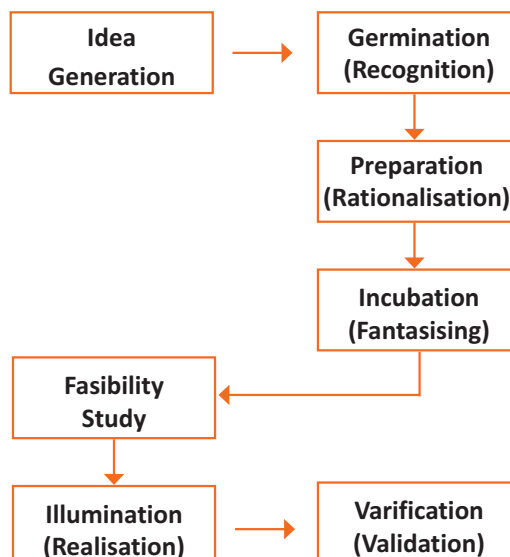
Fig. 10.4 Entrepreneurial process
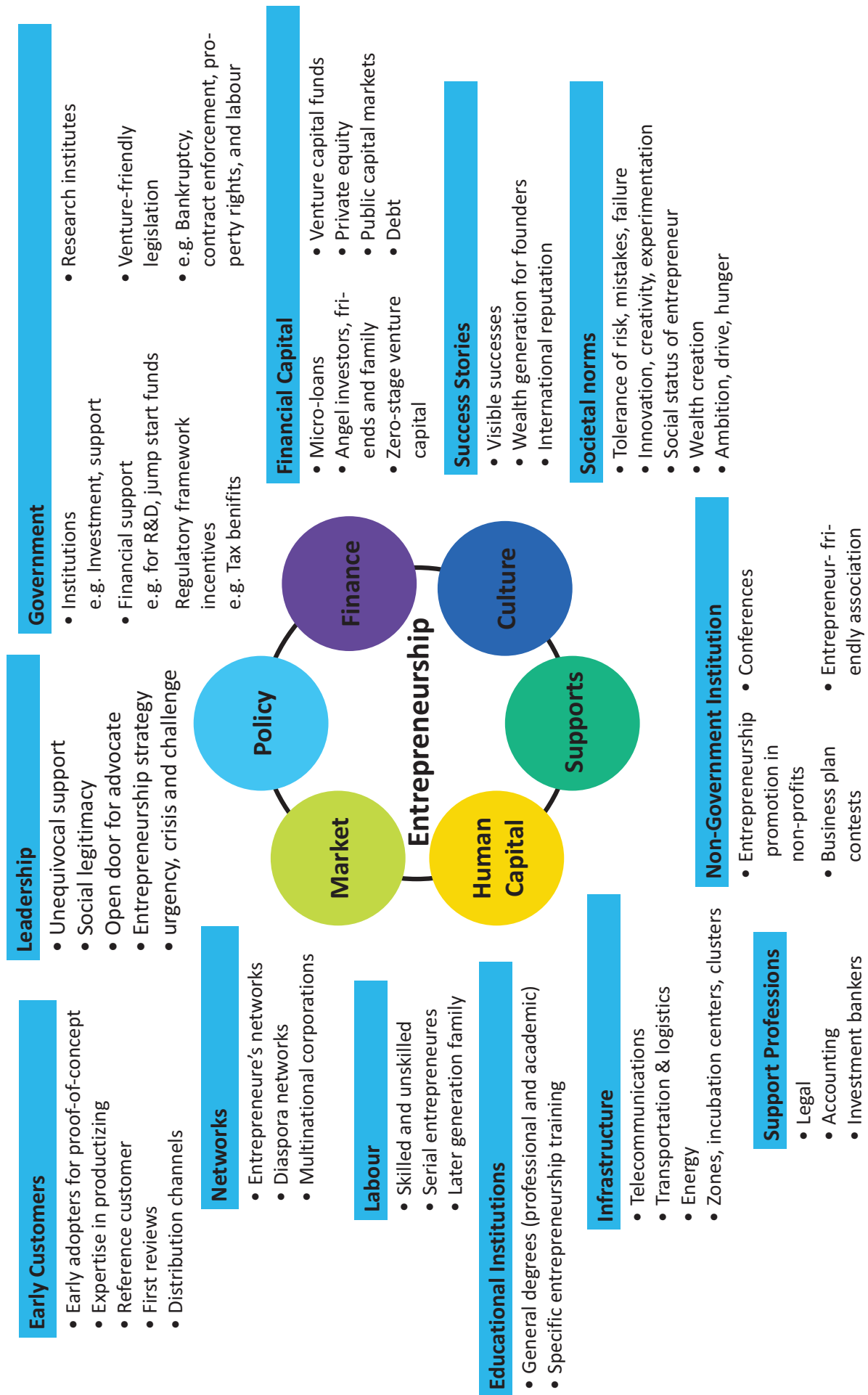
What is an Entrepreneur?

The entrepreneurship support ecosystem signifies the collective and complete nature of entrepreneurship. New companies emerge and flourish not only because of the courageous, visionary entrepreneurs who launch them, but they thrive as they are set in an environment or 'ecosystem' made of private and public participants. These players nurture and sustain the new ventures, facilitating the entrepreneurs' efforts.

An entrepreneurship ecosystem comprises of the following six domains:

1. **Favourable Culture:** This includes elements such as tolerance of risk and errors, valuable networking and positive social standing of the entrepreneur.

2. **Facilitating Policies & Leadership:** This includes regulatory framework incentives and existence of public research institutes.

3. **Financing Options:** Angel financing, venture capitalists and micro loans would be good examples of this.

4. **Human Capital:** This refers to trained and untrained labour, entrepreneurs and entrepreneurship training programmes, etc.

5. **Conducive Markets for Products & Services:** This refers to an existence or scope of existence of a market for the product/service.

6. **Institutional & Infrastructural Support:** This includes legal and financing advisers, telecommunications, digital and transportation infrastructure, and entrepreneurship networking programmes.

These domains indicate whether there is a strong entrepreneurship support ecosystem and what actions should the government put in place to further encourage this ecosystem. The six domains and their various elements have been graphically depicted.

Early Customers
- Early adopters for proof-of-concept
- Expertise in productizing
- Reference customer
- First reviews
- Distribution channels

Leadership
- Unequivocal support
- Social legitimacy
- Open door for advocate
- Entrepreneurship strategy
- urgency, crisis and challenge

Government
- Institutions
  e.g. Investment, support
- Financial support
  e.g. for R&D, jump start funds
- Regulatory framework
  incentives
  e.g. Tax benifits
- Research institutes
- Venture-friendly
  legislation
- e.g. Bankruptcy,
  contract enforcement, property rights, and labour

Financial Capital
- Micro-loans
- Angel investors, friends and family
- Zero-stage venture
  capital
- Venture capital funds
- Private equity
- Public capital markets
- Debt

Success Stories
- Visible successes
- Wealth generation for founders
- International reputation

Societal norms
- Tolerance of risk, mistakes, failure
- Innovation, creativity, experimentation
- Social status of entrepreneur
- Wealth creation
- Ambition, drive, hunger

Networks
- Entrepreneure's networks
- Diaspora networks
- Multinational corporations

Labour
- Skilled and unskilled
- Serial entrepreneures
- Later generation family

Educational Institutions
- General degrees (professional and academic)
- Specific entrepreneurship training

Infrastructure
- Telecommunications
- Transportation & logistics
- Energy
- Zones, incubation centers, clusters

Support Professions
- Legal
- Accounting
- Investment bankers

Non-Government Institution
- Entrepreneurship
  promotion in
  non-profits
- Business plan
  contests
- Conferences
- Entrepreneur- friendly association

Entrepreneurship

- Finance
- Culture
- Policy
- Supports
- Market
- Human Capital

Every entrepreneurship support ecosystem is unique and all the elements of the ecosystem are interdependent. Although every region's entrepreneurship ecosystem can be broadly described by the above features, each ecosystem is the result of the hundred elements interacting in highly complex and particular ways.

Entrepreneurship ecosystems eventually become (largely) self-sustaining. When the six domains are resilient enough, they are mutually beneficial. At this point, government involvement can and should be significantly minimized. Public leaders do not need to invest a lot to sustain the ecosystem. It is imperative that the entrepreneurship ecosystem incentives are formulated to be self-liquidating, hence focusing on sustainability of the environment.

Government's Role in the Entrepreneurship Ecosystem

Encouraging new ventures is a major focus for policymakers. Governments across the world are recognizing that new businesses flourish in distinctive types of supportive environments. Policymakers should study the scenario and take into account the following points whilst they formulate policies and regulations that enable successful entrepreneurship support ecosystems.

1. Policymakers should avoid regulations that discourage new entrants and work towards building efficient methods for business startups. Policies and regulations that favour existing, dominant firms over entrepreneurial ventures, restrict competition and obstruct entry for new companies.

2. Instead of developing policies conceptually intended to correct market failures, policymakers should interact with entrepreneurs and understand the challenges faced by them. The feedback should be used to develop policies that incite idea exploration, product development and increased rates of deal flow.

3. Entrepreneurial supporters should create a database that enables identifying who the participants in the ecosystem are and how they are connected. These ecosystem maps are useful tools in developing engagement strategies.

4. Disruptions are unavoidable in economic and social life. However, it's important to note that economic disruption gives rise to entrepreneurial opportunities. Architects of the entrepreneurship ecosystems (entrepreneurs, mentors, policymakers and consumers,) should anticipate these dips, thus capitalizing on the opportunities they create.

The need for effective strategies to enable local entrepreneurship support ecosystems is a practical one. Better understanding of the actual ecosystems provides a framework within which policy makers can ask relevant questions, envisage more efficient approaches, and assess ensuing outcomes.

Snapshot of the Entrepreneurship Ecosystem in India

Entrepreneurship has earned a newfound respect in India. Many Indians, with exposure to the world of business, who traditionally would have opted for a job, are setting up their own ventures. Many elements of the entrepreneurship ecosystem are beginning to come together. For example, increase in venture capitalists, government schemes and incubators, academia industry linkages, and emerging clusters and support to rural economy. All these initiatives are effective but there is a need to scale up and enrich the ecosystem further in the following ways:

1. We need to review our attitude towards failures and accept them as learning experiences.

2. We must encourage the educated to become entrepreneurs and provide students in schools and colleges with entrepreneurship skills.

3. Universities, research labs and the government need to play the role of enablers in the entrepreneurship support ecosystem.

4. Policymakers need to focus on reducing the obstacles such as corruption, red tape and bureaucracy.

5. We need to improve our legal systems and court international venture capital firms and bring them to India.

6. We must devise policies and methods to reach the secondary and tertiary towns in India, where people do not have access to the same resources available in the cities.

Today, there is a huge opportunity in this country to introduce innovative solutions that are capable of scaling up, and collaborating within the ecosystem as well as enriching it.

Make in India Campaign

Every entrepreneur has certain needs. Some of their important needs are:

• To easily get loans

• To easily find investors

• To get tax exemptions

• To easily access resources and good infrastructure

• To enjoy a procedure that is free of hassles and is quick

• To be able to easily partner with other firms

The Make in India campaign, launched by Prime Minister Modi aims to satisfy all these needs of young, aspiring entrepreneurs. Its objective is to:

• Make investment easy

• Support new ideas

• Enhance skill development

• Safeguard the ideas of entrepreneurs

• Create state-of-the-art facilities for manufacturing goods

Tips

• Research the existing market, network with other entrepreneurs, venture capitalists, angel investors, and thoroughly review the policies in place to enable your entrepreneurship.

• Failure is a stepping stone and not the end of the road. Review yours and your peers' errors and correct them in your future venture.

• Be proactive in your ecosystem. Identify the key features of your ecosystem and enrich them to ensure self-sustainability of your entrepreneurship support ecosystem.

10.5.7 Risk Appetite & Resilience:
Entrepreneurship and Risk

Entrepreneurs are inherently risk takers. They are path-makers not path-takers. Unlike a normal, cautious person, an entrepreneur would not think twice about quitting his job (his sole income) and taking a risk on himself and his idea.

An entrepreneur is aware that while pursuing his dreams, assumptions can be proven wrong and unforeseen events may arise. He knows that after dealing with numerous problems, success is still not guaranteed. Entrepreneurship is synonymous with the ability to take risks. This ability, called risk-appetite, is an entrepreneurial trait that is partly genetic and partly acquired.

What is Risk Appetite?

Risk appetite is defined as the extent to which a company is equipped to take risk, in order to achieve its objectives. Essentially, it refers to the balance, struck by the company, between possible profits and the hazards caused by changes in the environment (economic ecosystem, policies, etc.). Taking on more risk may lead to higher rewards but have a high probability of losses as well. However, being too conservative may go against the company as it can miss out on good opportunities to grow and reach their objectives.

The levels of risk appetite can be broadly categorized as "low", "medium" and "high." The company's entrepreneur(s) have to evaluate all potential alternatives and select the option most likely to succeed. Companies have varying levels of risk appetites for different objectives. The levels depend on:

• The type of industry

• Market pressures

• Company objectives

For example, a startup with a revolutionary concept will have a very high risk appetite. The startup can afford short term failures before it achieves longer term success. This type of appetite will not remain constant and will be adjusted to account for the present circumstances of the company.

Risk Appetite Statement

Companies have to define and articulate their risk appetite in sync with decisions made about their objectives and opportunities. The point of having a risk appetite statement is to have a framework that clearly states the acceptance and management of risk in business. It sets risk taking limits within the company. The risk appetite statement should convey the following:

• The nature of risks the business faces.

• Which risks the company is comfortable taking on and which risks are unacceptable.

• How much risk to accept in all the risk categories.

• The desired tradeoff between risk and reward.

• Measures of risk and methods of examining and regulating risk exposures.

Entrepreneurship and Resilience

Entrepreneurs are characterized by a set of qualities known as resilience. These qualities play an especially large role in the early stages of developing an enterprise. Risk resilience is an extremely valuable characteristic as it is believed to protect entrepreneurs against the threat of challenges and changes in the business environment.

What is Entrepreneurial Resilience?

Resilience is used to describe individuals who have the ability to overcome setbacks related to their life and career aspirations. A resilient person is someone who is capable of easily and quickly recovering from setbacks. For the entrepreneur, resilience is a critical trait. Entrepreneurial resilience can be enhanced in the following ways:

• By developing a professional network of coaches and mentors

• By accepting that change is a part of life

• By viewing obstacles as something that can be overcome

Characteristics of a Resilient Entrepreneur

The characteristics required to make an entrepreneur resilient enough to go the whole way in their business enterprise are:

• A strong internal sense of control
• Ability to diversify and expand
• Strong social connections
• Survivor attitude
• Skill to learn from setbacks
• Cash-flow conscious habits
• Ability to look at the bigger picture
• Attention to detail

Tips

• Cultivate a great network of clients, suppliers, peers, friends and family. This will not only help you promote your business, but will also help you learn, identify new opportunities and stay tuned to changes in the market.

• Don't dwell on setbacks. Focus on what the you need to do next to get moving again.

• While you should try and curtail expenses, ensure that it is not at the cost of your growth.

10.5.8 Success & Failures: Understanding Successes and Failures in Entrepreneurship

Shyam is a famous entrepreneur, known for his success story. But what most people don't know, is that Shyam failed numerous times before his enterprise became a success. Read his interview to get an idea of what entrepreneurship is really about, straight from an entrepreneur who has both, failed and succeeded.

Interviewer: Shyam, I have heard that entrepreneurs are great risk-takers who are never afraid of failing. Is this true?

Shyam: Ha ha, no of course it's not true! Most people believe that entrepreneurs need to be fearlessly enthusiastic. But the truth is, fear is a very normal and valid human reaction, especially when you are planning to start your own business! In fact, my biggest fear was the fear of failing. The reality is, entrepreneurs fail as much as they succeed. The trick is to not allow the fear of failing to stop you from going ahead with your plans. Remember, failures are lessons for future success!

Interviewer: What, according to you, is the reason that entrepreneurs fail?

Shyam: Well, there is no one single reason why entrepreneurs fail. An entrepreneur can fail due to numerous reasons. You could fail because you have allowed your fear of failure to defeat you. You could fail because you are unwilling to delegate (distribute) work. As the saying goes, "You can do anything, but not everything!" You could fail because you gave up too easily – maybe you were not persistent enough. You could fail because you were focusing your energy on small, insignificant tasks and ignoring the tasks that were most important. Other reasons for failing are partnering with the wrong people, not being able to sell your product to the right customers at the right time at the right price… and many more reasons!

Interviewer: As an entrepreneur, how do you feel failure should be looked at?

Shyam: I believe we should all look at failure as an asset, rather than as something negative. The way I see it, if you have an idea, you should try to make it work, even if there is a chance that you will fail. That's because not trying is failure right there, anyway! And failure is not the worst thing that can happen. I think having regrets because of not trying, and wondering 'what if' is far worse than trying and actually failing.

Interviewer: How did you feel when you failed for the first time?

Shyam: I was completely heartbroken! It was a very painful experience. But the good news is, you do recover from the failure. And with every subsequent failure, the recovery process gets a lot easier. That's because you start to see each failure more as a lesson that will eventually help you succeed, rather than as an obstacle that you cannot overcome. You will start to realize that failure has many benefits.

Interviewer: Can you tell us about some of the benefits of failing?

Shyam: One of the benefits that I have experienced personally from failing is that the failure made me see things in a new light. It gave me answers that I didn't have before. Failure can make you a lot stronger. It also helps keep your ego in control.

Interviewer: What advice would you give entrepreneurs who are about to start their own enterprises?

Shyam: I would tell them to do their research and ensure that their product is something that is actually wanted by customers. I'd tell them to pick their partners and employees very wisely and cautiously. I'd tell them that it's very important to be aggressive – push and market your product as aggressively as possible. I would warn them that starting an enterprise is very expensive and that they should be prepared for a situation where they run out of money.

I would tell them to create long term goals and put a plan in action to achieve that goal. I would tell them to build a product that is truly unique. Be very careful and ensure that you are not copying another startup. Lastly, I'd tell them that it's very important that they find the right investors.

Interviewer: That's some really helpful advice, Shyam! I'm sure this will help all entrepreneurs to be more prepared before they begin their journey! Thank you for all your insight!

Tips

- Remember that nothing is impossible.

- Identify your mission and your purpose before you start.

- Plan your next steps – don't make decisions hastily.

UNIT 10.6: Preparing to be an Entrepreneur

Unit Objectives 🎯

At the end of this unit, you will be able to:

1. Discuss how market research is carried out
2. Describe the 4 Ps of marketing
3. Discuss the importance of idea generation
4. Recall basic business terminology
5. Discuss the need for CRM
6. Discuss the benefits of CRM
7. Discuss the need for networking
8. Discuss the benefits of networking
9. Understand the importance of setting goals
10. Differentiate between short-term, medium-term and long-term goals
11. Discuss how to write a business plan
12. Explain the financial planning process
13. Discuss ways to manage your risk
14. Describe the procedure and formalities for applying for bank finance
15. Discuss how to manage your own enterprise
16. List important questions that every entrepreneur should ask before starting an enterprise

10.6.1 Market Study / The 4 Ps of Marketing / Importance of an IDEA: Understanding Market Research

Market research is the process of gathering, analyzing and interpreting market information on a product or service that is being sold in that market. It also includes information on:

• Past, present and prospective customers

• Customer characteristics and spending habits

• The location and needs of the target market

• The overall industry

• Relevant competitors

Market research involves two types of data:

• Primary information. This is research collected by yourself or by someone hired by you.

• Secondary information. This is research that already exists and is out there for you to find and use.

Primary research

Primary research can be of two types:

• Exploratory: This is open-ended and usually involves detailed, unstructured interviews.

• Specific: This is precise and involves structured, formal interviews. Conducting specific research is the more expensive than conducting exploratory research.

Secondary research

Secondary research uses outside information. Some common secondary sources are:

• Public sources: These are usually free and have a lot of good information. Examples are government departments, business departments of public libraries etc.

• Commercial sources: These offer valuable information but usually require a fee to be paid. Examples are research and trade associations, banks and other financial institutions etc.

• Educational institutions: These offer a wealth of information. Examples are colleges, universities, technical institutes etc.

The 4 Ps of Marketing

The 4 Ps of marketing are Product, Price, Promotion and Place. Let's look at each of these 4 Ps in detail.

Product

A product can be:

•   A tangible good   •   An intangible service

Whatever your product is, it is critical that you have a clear understanding of what you are offering, and what its unique characteristics are, before you begin with the marketing process.

Some questions to ask yourself are:

• What does the customer want from the product/service?

• What needs does it satisfy?

• Are there any more features that can be added?

• Does it have any expensive and unnecessary features?

• How will customers use it?

• What should it be called?

• How is it different from similar products?

• How much will it cost to produce?

• Can it be sold at a profit?

Price

Once all the elements of Product have been established, the Price factor needs to be considered.

The Price of a Product will depend on several factors such as profit margins, supply, demand and the marketing strategy.

Some questions to ask yourself are:

• What is the value of the product/service to customers?

• Do local products/services have established price points?

• Is the customer price sensitive?

• Should discounts be offered?

• How is your price compared to that of your competitors?

Promotion

Once you are certain about your Product and your Price, the next step is to look at ways to promote it. Some key elements of promotion are advertising, public relations, social media marketing, email marketing, search engine marketing, video marketing and more.

Some questions to ask yourself are:

• Where should you promote your product or service?

• What is the best medium to use to reach your target audience?

• When would be the best time to promote your product?

• How are your competitors promoting their products?

Place

According to most marketers, the basis of marketing is about offering the right product, at the right price, at the right place, at the right time. For this reason, selecting the best possible location is critical for converting prospective clients into actual clients.

Some questions to ask yourself are:

• Will your product or service be looked for in a physical store, online or both?

• What should you do to access the most appropriate distribution channels?

• Will you require a sales force?

• Where are your competitors offering their products or services?

• Should you follow in your competitors' footsteps?

• Should you do something different from your competitors?

Importance of an IDEA

Ideas are the foundation of progress. An idea can be small or ground-breaking, easy to accomplish or extremely complicated to implement. Whatever the case, the fact that it is an idea gives it merit. Without ideas, nothing is possible. Most people are afraid to speak out their ideas, out for fear of being ridiculed. However, if are an entrepreneur and want to remain competitive and innovative, you need to bring your ideas out into the light.

Some ways to do this are by:

- Establishing a culture of brainstorming where you invite all interested parties to contribute

- Discussing ideas out loud so that people can add their ideas, views, opinions to them

- Being open minded and not limiting your ideas, even if the idea who have seems ridiculous

- Not discarding ideas that you don't work on immediately, but instead making a note of them and shelving them so they can be revisited at a later date

Tips

- Keep in mind that good ideas do not always have to be unique.

- Remember that timing plays a huge role in determining the success of your idea.

- Situations and circumstances will always change, so be flexible and adapt your idea accordingly.

10.6.2 Business Entity Concepts:
Basic Business Terminology

If your aim is to start and run a business, it is crucial that you have a good understanding of basic business terms. Every entrepreneur should be well versed in the following terms:

- Accounting: A systematic method of recording and reporting financial transactions.

- Accounts payable: Money owed by a company to its creditors.

- Accounts Receivable: The amount a company is owed by its clients.

- Assets: The value of everything a company owns and uses to conduct its business.

- Balance Sheet: A snapshot of a company's assets, liabilities and owner's equity at a given moment.

- Bottom Line: The total amount a business has earned or lost at the end of a month.

- Business: An organization that operates with the aim of making a profit.

- Business to Business (B2B): A business that sells goods or services to another business.

- Business to Consumer (B2C): A business that sells goods or services directly to the end user.

- Capital: The money a business has in its accounts, assets and investments. The two main types of capital are debt and equity.

- Cash Flow: The overall movement of funds through a business each month, including income and expenses.

- Cash Flow Statement: A statement showing the money that entered and exited a business during a specific period of time.

- Contract: A formal agreement to do work for pay.

- Depreciation: The degrading value of an asset over time.

- Expense: The costs that a business incurs through its operations.

- Finance: The management and allocation of money and other assets.

- Financial Report: A comprehensive account of a business' transactions and expenses.

- Fixed Cost: A one-time expense.

- Income Statement (Profit and Loss Statement): Shows the profitability of a business during a period of time.

- Liabilities: The value of what a business owes to someone else.

- Marketing: The process of promoting, selling and distributing a product or service.

- Net Income/Profit: Revenues minus expenses.

- Net Worth: The total value of a business.

- Payback Period: The amount of time it takes to recover the initial investment of a business.

- Profit Margin: The ratio of profit, divided by revenue, displayed as a percentage.

- Return on Investment (ROI): The amount of money a business gets as return from an investment.

- Revenue: The total amount of income before expenses are subtracted.

- Sales Prospect: A potential customer.

- Supplier: A provider of supplies to a business.

- Target Market: A specific group of customers at which a company's products and services are aimed.

- Valuation: An estimate of the overall worth of the business.

- Variable Cost: Expenses that change in proportion to the activity of a business.

- Working Capital: Calculated as current assets minus current liabilities.

10.6.3 CRM & Networking: What is CRM?

CRM stands for Customer Relationship Management. Originally the expression Customer Relationship Management meant managing one's relationship with customers. However, today it refers to IT systems and software designed to help companies manage their relationships.

The Need for CRM

The better a company can manage its relationships with its customers, the higher the chances of the company's success. For any entrepreneur, the ability to successfully retain existing customers and expand the enterprise is paramount. This is why IT systems that focus on addressing the problems of dealing with customers on a daily basis are becoming more and more in demand.

Customer needs change over time, and technology can make it easier to understand what customers really want. This insight helps companies to be more responsive to the needs of their customers. It enables them to modify their business operations when required, so that their customers are always served in the best manner possible. Simply put, CRM helps companies recognize the value of their clients and enables them to capitalize on improved customer relations.

Benefits of CRM

CRM has a number of important benefits:

- It helps improve relations with existing customers which can lead to:
    - Increased sales
    - Identification of customer needs
    - Cross-selling of products
- It results in better marketing of one's products or services
- It enhances customer satisfaction and retention
- It improves profitability by identifying and focusing on the most profitable customers

What is Networking?

In business, networking means leveraging your business and personal connections in order to bring in a regular supply of new business. This marketing method is effective as well as low cost. It is a great way to develop sales opportunities and contacts. Networking can be based on referrals and introductions, or can take place via phone, email, and social and business networking websites.

The Need for Networking

Networking is an essential personal skill for business people, but it is even more important for entrepreneurs. The process of networking has its roots in relationship building. Networking results in greater communication and a stronger presence in the entrepreneurial ecosystem. This helps build strong relationships with other entrepreneurs.

Business networking events held across the globe play a huge role in connecting like-minded entrepreneurs who share the same fundamental beliefs in communication, exchanging ideas and converting ideas into realities. Such networking events also play a crucial role in connecting entrepreneurs with potential investors. Entrepreneurs may have vastly different experiences and backgrounds but they all have a common goal in mind – they all seek connection, inspiration, advice, opportunities and mentors. Networking offers them a platform to do just that.

Benefits of Networking

Networking offers numerous benefits for entrepreneurs. Some of the major benefits are:

- Getting high quality leads
- Increased business opportunities
- Good source of relevant connections
- Advice from like-minded entrepreneurs
- Gaining visibility and raising your profile
- Meeting positive and enthusiastic people
- Increased self-confidence
- Satisfaction from helping others
- Building strong and lasting friendships

Tips

- Use social media interactions to identify needs and gather feedback.
- When networking, ask open-ended questions rather than yes/no type questions.

10.6.4 Business Plan: Why Set Goals

Setting goals is important because it gives you long-term vision and short-term motivation. Goals can be short term, medium term and long term.

Short-Term Goals

• These are specific goals for the immediate future.

Example: Repairing a machine that has failed.

Medium-Term Goals

• These goals are built on your short term goals.

• They do not need to be as specific as your short term goals.

Example: Arranging for a service contract to ensure that your machines don't fail again.

Long-Term Goals

These goals require time and planning.

They usually take a year or more to achieve.

Example: Planning your expenses so you can buy new machinery

Why Create a Business Plan

A business plan is a tool for understanding how your business is put together. It can be used to monitor progress, foster accountable and control the fate of the business. It usually offers a 3-5 year projection and outlines the plan that the company intends to follow to grow its revenues. A business plan is also a very important tool for getting the interest of key employees or future investors.

A business plan typically comprises of eight elements.

Elements of a Business Plan

Executive Summary

The executive summary follows the title page. The summary should clearly state your desires as the business owner in a short and businesslike way. It is an overview of your business and your plans. Ideally this should not be more than 1-2 pages.

Your Executive Summary should include:

• The Mission Statement: Explain what your business is all about.

   Example: Nike's Mission Statement

   Nike's mission statement is "To bring inspiration and innovation to every athlete in the world."

• Company Information: Provide information like when your business was formed, the names and roles of the founders, the number of employees, your business location(s) etc.

• Growth Highlights: Mention examples of company growth. Use graphs and charts where possible.

• Your Products/Services: Describe the products or services provided.

• Financial Information: Provide details on current bank and investors.

• Summarize future plans: Describe where you see your business in the future.

Business Description

The second section of your business plan needs to provide a detailed review of the different elements of your business. This will help potential investors to correctly understand your business goal and the uniqueness of your offering.

Your Business Description should include:

• A description of the nature of your business

• The market needs that you are aiming to satisfy

• The ways in which your products and services meet these needs

• The specific consumers and organizations that you intend to serve

• Your specific competitive advantages

Market Analysis

The market analysis section usually follows the business description. The aim of this section is to showcase your industry and market knowledge. This is also the section where you should lay down your research findings and conclusions.

Your Market Analysis should include:

• Your industry description and outlook

• Information on your target market

• The needs and demographics of your target audience

• The size of your target market

• The amount of market share you want to capture

• Your pricing structure

• Your competitive analysis

• Any regulatory requirements

Organization & Management

This section should come immediately after the Market Analysis.

Your Organization & Management section should include:

• Your company's organizational structure

• Details of your company's ownership

• Details of your management team

• Qualifications of your board of directors

• Detailed descriptions of each division/department and its function

• The salary and benefits package that you offer your people

• The incentives that you offer

Service or Product Line

The next section is the service or product line section. This is where you describe your service or product, and stress on their benefits to potential and current customers. Explain in detail why your product of choice will fulfill the needs of your target audience.

Your Service or Product Line section should include:

- A description of your product/service

- A description of your product or service's life cycle

- A list of any copyright or patent filings

- A description of any R&D activities that you are involved in or planning

Marketing & Sales

Once the Service or Product Line section of your plan has been completed, you should start on the description of the marketing and sales management strategy for your business.

Your Marketing section should include the following strategies:

- **Market penetration strategy**: This strategy focuses on selling your existing products or services in existing markets, in order to increase your market share.

- **Growth strategy**: This strategy focuses on increasing the amount of market share, even if it reduces earnings in the short-term.

- **Channels of distribution strategy**: These can be wholesalers, retailers, distributers and even the internet.

- **Communication strategy**: These can be written strategies (e-mail, text, chat), oral strategies (phone calls, video chats, face-to-face conversations), non-verbal strategies (body language, facial expressions, tone of voice) and visual strategies (signs, webpages, illustrations).

Your Sales section should include the following information:

- **A salesforce strategy**: This strategy focuses on increasing the revenue of the enterprise.

- **A breakdown of your sales activities**: This means detailing out how you intend to sell your products or services – will you sell it offline or online, how many units do you intend to sell, what price do you plan to sell each unit at, etc.

Funding Request

This section is specifically for those who require funding for their venture.

The Funding Request section should include the following information:

- How much funding you currently require.

- How much funding you will require over the next five years. This will depend on your long-term goals.

- The type of funding you want and how you plan to use it. Do you want funding that can be used only for a specific purpose, or funding that can be used for any kind of requirement?

- Strategic plans for the future. This will involve detailing out your long-term plans – what these plans are and how much money you will require to put these plans in motions.

- Historical and prospective financial information. This can be done by creating and maintaining all your financial records, right from the moment your enterprise started, to the present day. Documents required for this are your balance sheet which contains details of your company's assets and liabilities, your income statement which lists your company's revenues, expenses and net income for the year, your tax returns (usually for the last three years) and your cash flow budget which lists the cash that came in, the cash that went out and states whether you had a cash deficit (negative balance) or surplus (positive balance) at the end of each month.

Financial Planning

Before you begin building your enterprise, you need to plan your finances. Take a look at the steps for financial planning:

Step 1: Create a financial plan. This should include your goals, strategies and timelines for accomplishing these goals.

Step 2: Organize all your important financial documents. Maintain a file to hold your investment details, bank statements, tax papers, credit card bills, insurance papers and any other financial records.

Step 3: Calculate your net worth. This means figure out what you own (assets like your house, bank accounts, investments etc.), and then subtract what you owe (liabilities like loans, pending credit card amounts etc.) the amount you are left with is your net worth.

Step 4: Make a spending plan. This means write down in detail where your money will come from, and where it will go.

Step 5: Build an emergency fund. A good emergency fund contains enough money to cover at least 6 months' worth of expenses.

Step 6: Set up your insurance. Insurance provides long term financial security and protects you against risk.

Risk Management

As an entrepreneur, it is critical that you evaluate the risks involved with the type of enterprise that you want to start, before you begin setting up your company. Once you have identified potential risks, you can take steps to reduce them. Some ways to manage risks are:

• Research similar business and find out about their risks and how they were minimized.

• Evaluate current market trends and find out if similar products or services that launched a while ago are still being well received by the public.

• Think about whether you really have the required expertise to launch your product or service.

• Examine your finances and see if you have enough income to start your enterprise.

• Be aware of the current state of the economy, consider how the economy may change over time, and think about how your enterprise will be affected by any of those changes.

• Create a detailed business plan.

Tips

• Ensure all the important elements are covered in your plan.

• Scrutinize the numbers thoroughly.

• Be concise and realistic.

• Be conservative in your approach and your projections.

• Use visuals like charts, graphs and images wherever possible.

10.6.5 Procedure and Formalities for Bank Finance: The Need for Bank Finance

For entrepreneurs, one of the most difficult challenges faced involves securing funds for startups. With numerous funding options available, entrepreneurs need to take a close look at which funding methodology works best for them. In India, banks are one of the largest funders of startups, offering funding to thousands of startups every year.

What Information Should Entrepreneurs Offer Banks for Funding?

When approaching a bank, entrepreneurs must have a clear idea of the different criteria that banks use to screen, rate and process loan applications. Entrepreneurs must also be aware of the importance of providing banks with accurate and correct information. It is now easier than ever for financial institutions to track any default behaviour of loan applicants. Entrepreneurs looking for funding from banks must provide banks with information relating to their general credentials, financial situation and guarantees or collaterals that can be offered.

General Credentials

This is where you, as an entrepreneur, provide the bank with background information on yourself. Such information includes:

- Letter(s) of Introduction: This letter should be written by a respected business person who knows you well enough to introduce you. The aim of this letter is set across your achievements and vouch for your character and integrity.

- Your Profile: This is basically your resume. You need to give the bank a good idea of your educational achievements, professional training, qualifications, employment record and achievements.

- Business Brochure: A business brochure typically provides information on company products, clients, how long the business has been running for etc.

- Bank and Other References: If you have an account with another bank, providing those bank references is a good idea.

- Proof of Company Ownership or Registration: In some cases, you may need to provide the bank with proof of company ownership and registration. A list of assets and liabilities may also be required.

Financial Situation

Banks will expect current financial information on your enterprise. The standard financial reports you should be prepared with are:

- Balance Sheet
- Cash-Flow Statement
- Business Plan

- Profit-and-Loss Account
- Projected Sales and Revenues
- Feasibility Study

Guarantees or Collaterals

Usually banks will refuse to grant you a loan without security. You can offer assets which the bank can seize and sell off if you do not repay the loan. Fixed assets like machinery, equipment, vehicles etc. are also considered to be security for loans.

The Lending Criteria of Banks

Your request for funding will have a higher chance of success if you can satisfy the following lending criteria:

• Good cash flow

• Adequate shareholders' funds

• Adequate security

• Experience in business

• Good reputation

The Procedure

To apply for funding the following procedure will need to be followed.

1. Submit your application form and all other required documents to the bank.

2. The bank will carefully assess your credit worthiness and assign ratings by analyzing your business information with respect to parameters like management, financial, operational and industry information as well as past loan performance.

3. The bank will make a decision as to whether or not you should be given funding.

Tips

• Get advice on funding options from experienced bankers.

• Be cautious and avoid borrowing more than you need, for longer than you need, at an interest rate that is higher than you are comfortable with.

10.6.6 Enterprise Management - An Overview:
How to Manage Your Enterprise

To manage your enterprise effectively you need to look at many different aspects, right from managing the day-to-day activities to figuring out how to handle a large scale event. Let's take a look at some simple steps to manage your company effectively.

Step 1: Use your leadership skills and ask for advice when required.

Let's take the example of Ramu, an entrepreneur who has recently started his own enterprise. Ramu has good leadership skills – he is honest, communicates well, knows how to delegate work etc. These leadership skills definitely help Ramu in the management of his enterprise. However, sometimes Ramu comes across situations that he is unsure how to handle. What should Ramu do in this case? One solution is for him to find a more experienced manager who is willing to mentor him. Another solution is for Ramu to use his networking skills so that he can connect with managers from other organizations, who can give him advice on how to handle such situations.

Step 2: Divide your work amongst others – realize that you cannot handle everything yourself.

Even the most skilled manager in the world will not be able to manage every single task that an enterprise will demand of him. A smart manager needs to realize that the key to managing his enterprise lies in his dividing all his work between those around him. This is known as delegation. However, delegating is not enough. A manager must delegate effectively if he wants to see results. This is important because delegating, when done incorrectly, can result in you creating even more work for yourself. To delegate effectively, you can start by making two lists. One list should contain the things that you know you need to handle yourself. The second list should contain the things that you are confident can be given to others to manage and handle. Besides incorrect delegation, another issue that may arise is over-delegation. This means giving away too many of your tasks to others. The problem with this is, the more tasks you delegate, the more time you will spend tracking and monitoring the work progress of those you have handed the tasks to. This will leave you with very little time to finish your own work.

Step 3: Hire the right people for the job.

Hiring the right people goes a long way towards effectively managing your enterprise. To hire the best people suited for the job, you need to be very careful with your interview process. You should ask potential candidates the right questions and evaluate their answers carefully. Carrying out background checks is always a good practice. Running a credit check is also a good idea, especially if the people you are planning to hire will be handling your money. Create a detailed job description for each role that you want filled and ensure that all candidates have a clear and correct understanding of the job description. You should also have an employee manual in place, where you

put down every expectation that you have from your employees. All these actions will help ensure that the right people are approached for running your enterprise.

Step 4: Motivate your employees and train them well.

Your enterprise can only be managed effectively if your employees are motivated to work hard for your enterprise. Part of being motivated involves your employees believing in the vision and mission of your enterprise and genuinely wanting to make efforts towards pursuing the same. You can motivate your employees with recognition, bonuses and rewards for achievements. You can also motivate them by telling them about how their efforts have led to the company's success. This will help them feel pride and give them a sense of responsibility that will increase their motivation.

Besides motivating your people, your employees should be constantly trained in new practices and technologies. Remember, training is not a one-time effort. It is a consistent effort that needs to be carried out regularly.

Step 5: Train your people to handle your customers well.

Your employees need to be well-versed in the art of customer management. This means they should be able to understand what their customers want, and also know how to satisfy their needs. For them to truly understand this, they need to see how you deal effectively with customers. This is called leading by example. Show them how you sincerely listen to your clients and the efforts that you put into understand their requirements. Let them listen to the type of questions that you ask your clients so they understand which questions are appropriate.

Step 6: Market your enterprise effectively.

Use all your skills and the skills of your employees to market your enterprise in an effective manner. You can also hire a marketing agency if you feel you need help in this area.

Now that you know what is required to run your enterprise effectively, put these steps into play, and see how much easier managing your enterprise becomes!

Tips

- Get advice on funding options from experienced bankers.

- Be cautious and avoid borrowing more than you need, for longer than you need, at an interest rate that is higher than you are comfortable with.

10.6.7. 20 Questions to Ask Yourself Before Considering Entrepreneurship

1. Why am I starting a business?

2. What problem am I solving?

3. Have others attempted to solve this problem before? Did they succeed or fail?

4. Do I have a mentor[1] or industry expert that I can call on?

5. Who is my ideal customer[2]?

6. Who are my competitors[3]?

7. What makes my business idea different from other business ideas?

8. What are the key features of my product or service?

9. Have I done a SWOT[4] analysis?

10. What is the size of the market that will buy my product or service?

11. What would it take to build a minimum viable product[5] to test the market?

12. How much money do I need to get started?

13. Will I need to get a loan?

14. How soon will my products or services be available?

15. When will I break even[6] or make a profit?

16. How will those who invest in my idea make a profit?

17. How should I set up the legal structure[7] of my business?

18. What taxes[8] will I need to pay?

19. What kind of insurance[9] will I need?

20. Have I reached out to potential customers for feedback?

Tips

- It is very important to validate your business ideas before you invest significant time, money and resources into it.

- The more questions you ask yourself, the more prepared you will be to handle to highs and lows of starting an enterprise.

Footnotes:

1. A mentor is a trusted and experienced person who is willing to coach and guide you.

2. A customer is someone who buys goods and/or services.

3. A competitor is a person or company that sells products and/or services similar to your products and/or services.

4. SWOT stands for Strengths, Weaknesses, Opportunities and Threats. To conduct a SWOT analysis of your company, you need to list down all the strengths and weaknesses of your company, the opportunities that are present for your company and the threats faced by your company.

5. A minimum viable product is a product that has the fewest possible features, that can be sold to customers, for the purpose of getting feedback from customers on the product.

6. A company is said to break even when the profits of the company are equal to the costs.

7. The legal structure could be a sole proprietorship, partnership or limited liability partnership.

8. There are two types of taxes – direct taxes payable by a person or a company, or indirect taxes charged on goods and/or services.

9. There are two types of insurance – life insurance and general insurance. Life insurance covers human life while general insurance covers assets like animals, goods, cars etc.

Notes

Skill India
कौशल भारत - कुशल भारत

सत्यमेव जयते
GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP

N·S·D·C
National
Skill Development
Corporation
Transforming the skill landscape

FICSI
Food Industry Capacity and Skill Initiative

Address: 801, L-29, 1st Floor, C/o. Awfis, Outer Circle, Connaught Place
(Above Haldirams), New Delhi - 110001
Email: admin@ficsi.in
Web: www.ficsi.in
Phone: 011 65001273
CIN No.:

Price: ₹

FICSI
Food Industry Capacity and Skill Initiative

Participant Handbook

Sector
Food Processsing

Sub-Sector
Bread and Bakery

Occupation
Processing

Reference ID: **FIC/Q5002, Version 1.0**
NSQF Level 4

Craft Baker

Address: 801, L-29, 1st Floor, C/o. Awfis, Outer Circle, Connaught Place
(Above Haldirams), New Delhi - 110001
Email: admin@ficsi.in
Web: www.ficsi.in
Phone: 011 65001273
CIN No.:

Price: ₹