

TEXTBOOK OF

# ESSENTIAL OF HOME ECONOMICS

Foundational  
8



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Textbook of

# Essential of Home Economics

for Grade-8



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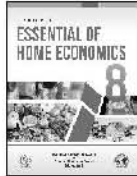
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A Textbook of **Essential of Home Economic**  
for Grade 8



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**Management**

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# Preface

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# 1

## INTRODUCTION TO HOME ECONOMICS

Contents	Learning Outcomes Students should be able to
1.1. Definition of Home Economics	<ul style="list-style-type: none"><li>• Define Home Economics</li></ul>
1.2. Aims and objective of Home Economics	<ul style="list-style-type: none"><li>• Describe the aims of Home Economics</li><li>• Discuss the main objective of studying Home Economics</li></ul>
1.3. Integration of Home Economics with other subjects	<ul style="list-style-type: none"><li>• Describe how Home Economics is linked with other subjects.</li><li>• Describe the relationship of Home Economics to other fields of study.</li></ul>



## 1.1 DEFINITION OF HOME ECONOMICS

It is always useful to start a subject with its definition. Home Economics can be defined as a science of running a home. It is a vast subject which deals with all matters and activities of home life. House hold activities usually include cooking, sewing, looking after children and decorating the house.

Home Economics is a science which helps a person to make the best use of her sources to meet the requirements of her home. A house wife having the knowledge of Home Economics manages the home in such a way that all the members of the family get maximum benefit of the available resources.

## 1.2 AIMS AND OBJECTIVES OF HOME ECONOMICS

1. Home Economics aims to develop clear understanding of home and family.
2. It aims to develop well balanced personality of the student.
3. It aims to enhance the physical, mental and social well being of students.
4. It aims to groom and train students to make positive contribution.
5. It aims to give education through practical experience.

### Objective of Home Economics

#### Students will be able to

1. To know the different fields of Home Economics.
2. To discuss the significance of food and nutrition as a science and understand the importance of food hygiene.
3. To know the reason and effect of cooking food and the method of food preservation.
4. To understand and promote positive self concept.
5. To strengthen personality by character building.
6. To understand fiber identification.
7. To learn different stitches.
8. To understand colour and design and types of design.
9. To inculcate the dignity of labour by work simplification.
10. To develop efficient time, energy and money management with special reference to home and family.
11. To develop well balanced personality.
12. To enhance their physical, mental and social well being.



## 1.3 INTEGRATION OF HOME ECONOMICS WITH OTHER SUBJECTS

Home Economics is a vast subject. It is a science as well as an art. Although fundamentally it is treated as a science, it is closely related with the subjects of both science and art. Let us now discuss how Home Economics is related with other subjects.

Fashion & Fabrics (2012:7)	Food & Nutrition (2012:6)	Home Management (2012:6)
<ol style="list-style-type: none"> <li>1. the importance of technology in textile and clothing industry;</li> <li>2. environmental issues related to textiles;</li> <li>3. textile policies at national and international level;</li> <li>4. decision-making as a consumer on contemporary Fashion and Fabrics issues;</li> <li>5. foundation skills to enable them to cope with the challenges of an ever-changing environment;</li> <li>6. managerial and entrepreneurial skills in a textile business;</li> <li>7. interest and enjoyment of creative use of textiles;</li> <li>8. selecting and using resources effectively;</li> <li>9. evaluating textile activities and products</li> </ol>	<ol style="list-style-type: none"> <li>1. the role of Food and Nutrition in improving the health status of individuals;</li> <li>2. to be productive and adaptive to meet the challenges of an everchanging environment;</li> <li>3. Food Policies at national and international level;</li> <li>4. effective organization and management of resources in relation to Food and Nutrition;</li> <li>5. consumer awareness for decision making in contemporary Food and Nutrition issues;</li> <li>6. managerial and entrepreneurial skills in Food and Nutrition;</li> <li>7. indigenous foods and traditional dishes.</li> </ol>	<ol style="list-style-type: none"> <li>1. consumer awareness and appreciation for decision making in the world of work/globally;</li> <li>2. environmental issues and sustainable use of resource</li> <li>3. aesthetic awareness in the living environment;</li> <li>4. managerial and entrepreneurial skills for effective use of resource;</li> <li>5. to solve both theoretical and practical problems;</li> <li>6. attitudes and practices to ensure quality health;</li> <li>7. critical and analytical skills to enhance effectiveness in decision making and problem solving in a contemporary society;</li> </ol>

for an identified context or need; 10. individual and teamwork skill development		8. competency and opportunity available in the world 9. teamwork and interpersonal skills in a productive and construction manner
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### Home Economics and Psychology

Home Economics studies the problems of the children of different age groups, personality and self-concept. In psychology we study the personality, physical development and needs of a child. In Home Economics, therefore we try to solve the children's problems and groom the personality with the help of psychology.

### Home Economics and Economics

Home Economics lay emphasis on the correct use of the money. It studies how we can save money and make best use of our income. As Economics also includes the study of budget and expenses, the Home Economics is therefore, closely related with Economics.

### Home Economics and Art

The principles of Art i.e. lines, colour, condition of surface, form, harmony, balance help in decorating a house or adorning the dress. These are essential in the works of Art like painting, sculpture and making of a statue, in the same way these must be kept in view while making the selection of clothes and decorating a house. For this reason Home Economics cannot be separated from Art.

### Home Economics and Civics

One of the aspects of Home Economics is to help an individual to develop his personality. It studies how a person can make his personality good looking, healthy, charming and popular. In Home Economics there are topics like how to make girls and boys good citizens of the country, the basic knowledge of civics is essential for the students of Home Economics.

### Home Economics and Chemistry

Home Economics is closely related with chemistry, Study about food and the basic parts of food are chemicals which are dealt with by chemistry. The methods we use for the preservation of food are also related to chemical. The subject of food and nutrition, therefore cannot be separated from the study of chemistry.



## Exercise

1. Define Home Economics. Also discuss its aims and objectives?
2. How is Home Economics related with other subjects?
3. How is Home Economics linked with Psychology and Art?
4. Fill in the blanks with appropriate words:
  - i) Home Economics is defined as \_\_\_\_\_ of running a home.
  - ii) Home Economics is a \_\_\_\_\_ subject.
  - iii) The knowledge of \_\_\_\_\_ help in management of money.

- iv) Homes are managed by \_\_\_\_\_.
- v) The methods used for the preservation of food are studied also by \_\_\_\_\_.

**4. Write (T) and (F) in front of true and false statements respectively:**

- i) Home Economics is only a science.
- ii) In chemistry, we study the chemistry of food.
- iii) The principles of Art helps in decorating home.
- iv) Home Economics is not related with other subjects.
- v) Home Economics lays emphasis on correct use of money.

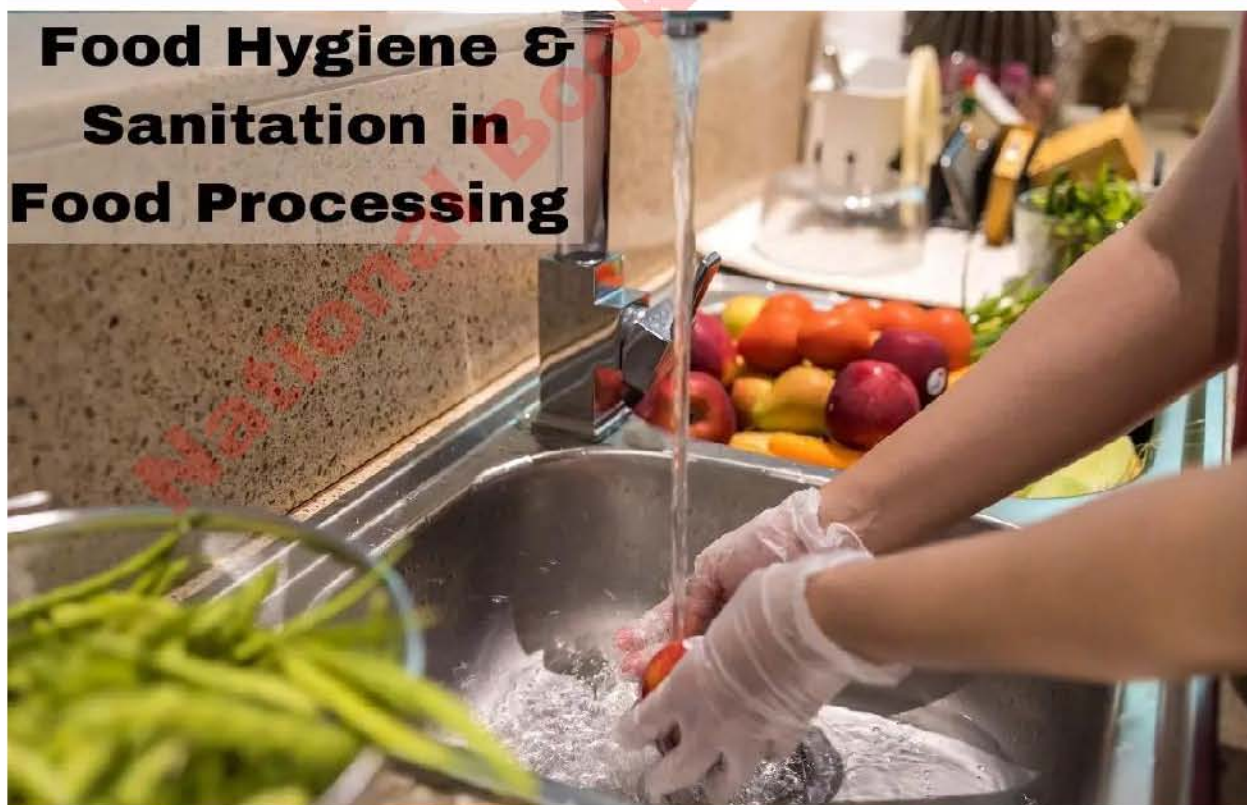
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# 2

## FOOD AND NUTRITION

Contents	Learning Outcomes Students should be able to
2.1 Food and Nutrition as a Science	<ul style="list-style-type: none"><li>• Discuss the significance of food and nutrition as a science</li></ul>
2.2 Food habits	<ul style="list-style-type: none"><li>• Define food habits</li><li>• Discuss the impact of food habits on the eating patterns of teenagers.</li></ul>
2.3 Food hygiene	<ul style="list-style-type: none"><li>• Define food hygiene</li><li>• Explain the importance of food hygiene</li><li>• Understand the importance of food hygiene in storage</li></ul>



## 2.1 SIGNIFICANCE OF FOOD AND NUTRITION AS A SCIENCE

In common use the term nutrition has two meanings:-

It refers to a bodily condition that is often called the state of nutrition. The others mean furnishing the body with adequate nourishment for growth, maintenance and repair of the body.

Nutrition may be defined very simply as the science of nourishing the body properly that is providing nutrients adequately for its growth, maintenance and repair.

Nutrition is the science of food as it relates to health. It includes all the processes by which living organism ingests, digest, absorbs and uses the nutrients in the food.

Nutrition comprises a number of processes through which the nourishment and growth of the body is effected and the structural efficiency of every cell, maintained. Good nutrition forms the basis of good health, as it directly affects reproduction, growth and development, the physical and mental well-being and the working capacity of the individual. Nutrition is the most important factors on which the health of an individual or of a nation depends.

### **Scientific understanding of nutrition includes:-**

1. The study of food requirements of an individual.
2. The study of food requirements at different age levels to meet physiological and physiological changes.
3. The study of nutritive values of different foods.
4. The selection of food for a balanced diet.

## 2.2 FOOD HABITS

Eating habits are defined as conscious, collective, and repetitive behaviors, which lead people to select, consume and use certain foods or diets, in response to social and cultural influences. Food habits begin to form almost as soon as a child is born. They result from repeated experience with food and are modified, rather easily in the early years, as experience changes. First modification is in spacing meals to eliminate night time feedings.

Food habit refers to the way in which different people select, cook, serve and eat food that are available to them. The actions, reactions, and thoughts of an individual are influenced.



## Eating Habits of Teenagers

Healthy eating behaviors become less common as young people move through adolescence, with the frequency of breakfast consumption, eating fruit and having evening meals with the family decreasing between ages 11 and 15, and soft drink consumption increases with age.



## Impact of food habits on the eating patterns of Teenagers

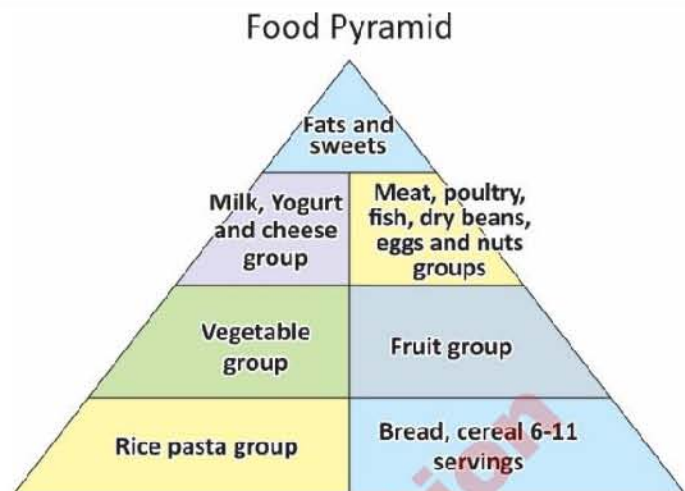
Adolescence is the transition period between childhood and adulthood, a time of life that begins at puberty. For girls, puberty typically occurs between ages 12 and 13, while for boys it occurs between ages 14 and 15. It is one of the fastest growth periods of a person's life. During this time, physical changes affect the body's nutritional needs, while changes in one's life style may affect eating habits and food choices.

Nutritional health during adolescence is important for supporting the growing body and for preventing future health problems.

## Tips for helping your teen eat healthy

Continue to maintain a "Division of Responsibility" in regard to feeding, but realize that as teens mature, they need to learn to take on more responsibility for what to eat. ¾

parents are responsible for what foods and beverages are brought into the home. What foods are on or off limits for snacks and what foods are served for family meals.  $\frac{3}{4}$  teens are responsible for whether to eat and how much to eat. They can decide what to eat for snacks and for meals outside the home (like at school or at friend's home).



1. At home, limit eating in rooms of the house other than the kitchen and dining room.
2. Have family meals and keep mealtimes pleasant. Turn off the T.V so you can enjoy being together.
3. Invite your teen to help you plan menus, grocery shop, choose new foods, find healthy recipes, cook and clean-up after meals.
4. Encourage your teen to make his own snacks and meals, like breakfast. Ask him to plan some family meals, perhaps even ones with a theme (holiday, cuisine, sports, favourite book or subject etc.)
5. Help your teen start her/his day with a healthy breakfast which includes foods from at least 3 main food groups. Together, create and post a list of breakfast ideas as a handy reference. Do the same for snacks and packed lunch ideas.



6. Keep plenty of calcium rich foods and beverages on hand.
7. Watch for signs of an eating disorder, extreme concern or fear about body weight and shape, refusal to eat, excessive exercising, laxative abuse, bingeing, (over eating) vomiting after meals, if you have any concerns about your teen, seek professional help.
8. Encourage iron-rich foods to meet the increased needs for menstruating females (to replace iron loss in blood) and for males (as their muscle mass develops). Good iron sources: beef and part (choose lean cuts: round and loin) shellfish, skinless poultry, fish iron fortified cereals and breads, tofu, legumes, dried fruits, dark green vegetables. Vitamin C (found in many fruits and vegetables enhances the absorption of iron from plant food sources.
9. Be a positive role model. If you eat and enjoy a well balanced diet, try new foods, use polite table manners and practice healthy eating habits, chances are that your teen will do the same.
10. Educate for healthy foods served at school and extracurricular activities. Cook and sold for fundraisers.

## 2.3 FOOD HYGIENE

Food safety is a scientific discipline describing handling, preparation and storage of food in ways, that prevent food borne illness. This includes a number of routines that should be followed to avoid potentially severe health hazards. The hygienic handling and preparation of food are of great importance in the prevention of food contamination and food poisoning.

### Importance of food hygiene

- Buy food from clean, reputable shops, where the assistants handle the food hygienically.
- Check that there are no animals in food shops.
- Check the date stamps on fresh foods.
- Choose fresh foods wisely (see individual foods for factors affecting choice).
- Be aware of fresh foods sold on market stalls, they should be covered to protect them from dust and flies.

### Personal hygiene

- Before preparing food, tie hair back, wash hands and scrub nails clean.
- Always wash the hands after visiting the toilet.

- Never cough, sneeze, spit or smoke over the food.
- Cover up skin infections and cuts.
- Wear a clean apron.
- Do not lick fingers or spoons and then touch the food with them.

### **Importance of food hygiene in storage**

- Store fresh foods in a cool place. Use them up fairly rapidly and certainly within the time recommended on the label or pack.
- Use up old stocks of dried and canned foods before new ones.
- Cool left over foods rapidly and eat within 24 hours.
- Keep food protected from flies, pests, and rodents, by the use of most in cloth, plastic film, or a food net.
- Regularly wash and clean work surfaces, and floor.
- Keep utensils clean and well stored when not in use.
- Wipe up spills as they occur.





## Exercise

### Fill in the blanks:

1. The puberty age for boys are \_\_\_\_\_.
2. Do not \_\_\_\_\_ finger or spoon and then touch the food with them.
3. \_\_\_\_\_ fresh food in a cool place.
4. Cool leftover food should eat within \_\_\_\_\_ hours.

### Short Question:

1. Define food hygiene.
2. Write a short note on importance of food hygiene during storage.
3. Define food habits.

### Long question:

1. Write down the significance of food and nutrition?
2. What is the impact of food habits on eating pattern of teenagers?

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# 3

## COOKING AND PRESERVATION OF FOOD

Contents	Learning Outcomes Students should be able to
3.1 Reasons of cooking food	<ul style="list-style-type: none"><li>• Illustrate the reasons of cooking food</li><li>• Discuss effects of cooking on quality of food</li></ul>
3.2 Methods of food preservation	<ul style="list-style-type: none"><li>• Define food preservation</li><li>• List methods of home food preservation</li></ul>
3.3 Causes of decay of food	<ul style="list-style-type: none"><li>• Explain the process of decaying</li><li>• Describe the causes of food decay</li></ul>



### 3.1 REASONS OF COOKING FOOD

When food is prepared and cooked well, it tends to look and taste better and the nutritional content becomes more valuable. There are many reasons for nutrition loss like overexposure to air, too much added oil or fat, excessive heat an unsuitable cooking method or utensils and other variables can destroy the nutritional quality of our food. Skills and appropriate methods in food preparation and cooking are very important to get and utilize the nutritional food value. You can adopt varying recipes and time saving techniques. Neat, orderly and systematic working in the kitchen along regular clearing of the surfaces is a must, it can check and control the hygienic handling of food.

#### Effects of Cooking on Quality of Food

##### (i) Effect on vegetable:

Heat can provide moisture and modify the texture of vegetable to make it easier to chew and digest. Eating cook vegetable reduce risk of contamination from bacteria.

1. Always use fresh vegetables.
2. Thoroughly wash vegetables under clean and running water.
3. Peel thin skins from vegetables because vegetables peeled with thick skins lose their nutritive value. Use a sharp knife for scraping bitter gourds cut them in center to remove the seeds.
4. Cut off rotten parts of vegetables and cut vegetables into medium sized pieces.
5. Prolong soaking of vegetables should be avoided because vitamins and minerals are dissolved in water by soaking.
6. Peel and cut vegetables just before cooking to avoid wastage of water soluble vitamins.
7. Prolong cooking should be avoided.
8. Always cook vegetables with a tight lid, because vitamin C is lost by the action of oxygen. Green leafy vegetables should be cooked with an open lid for a few minutes only to evaporate oxalic acid present in green leafy vegetables.
9. Use required quantity of water to make the vegetables tender. Cook vegetables in their own water to avoid the wastage of vitamins and minerals.
10. Cook with skins on whenever possible.
11. Boiling, steaming, frying and baking are commonly used methods of cooking vegetables.

##### (ii) Effects on Fruits:

Fruits may be stewed or baked for variety. Cooking diminishes the acute flavours of fresh fruits, brings about a change in colour and softens the cellulose so that it is more readily digested.



### (iii) Effects on Meat:

The main objective of cooking the meat is to increase its taste and flavour to make it palatable and digestible and to kill the germs and parasites present in the meat. Meat is full of nutrients, special care should be taken while cooking it so as to maintain its nutritive value.

1. Remove hair and other particles from fresh meat. Wash it under running water once or twice and cook it.
2. Frozen meat should not be soaked in water. It should be cooked directly.
3. Always cook meat on low heat. Cooking meat on high heat makes it stiff. Its nutritive value and flavour are lost. Meat cooked on low heat is tender and delicious.
4. Meat cooked by frying will make it more palatable and delicious and its nutritive value will be saved.
5. Use only required quantity of water for cooking.
6. Common methods of cooking meat are broiling, baking in oven, braising and boiling.



### (iv) Effects on Milk:

The boiling of milk is required in the preparation of many dishes to change its flavour. Albumin sticks to the sides and bottom of the pan, bringing some calcium down with it, therefore a double boiler is advisable in milk cookery. Milk should not be allowed to boil, except where boiling becomes necessary for sterilization of the milk. Milk is used in a variety of recipes including sauces, beverages, soups, custards etc.

### (v) Effects on Cereals:

Cereals are cooked in order to soften or rupture the cellulose walls of the starch cells to make it digestible. Cooking of cereals also improves their flavour. Starch cells absorb water, expand and become more soluble on boiling. The aim in cooking rice is to make the grains tender and swell them to their full capacity without breaking. Each grain should stand apart and not be sticky or gummy.

### (vi) Effects on Macaroni and Pasta:

Macaroni and Spaghetti are also cooked in large amount of boiling water, then drained as soon as cooking is complete to avoid excessive pastiness. Dry starchy beans or pulses should be sorted washed and covered with water to soak for two to six hours according

to size and type of the legume. Pressure cooking also takes short time to make the dry beans and pulses tender. Baking soda is also used to shorten cooking time.



### METHODS OF PRESERVATION



• Drying	• Smoking	• Cooling
• Freezing	• Salting	• Pickling
• Clanning		

### 3.2 DEFINE FOOD PRESERVATION:

Food preservation usually involves preventing the growth of bacteria, fungi like yeasts, or any other micro-organisms. Food preservation can also be the process that inhibit visual deterioration. Such as the enzymatic browning reaction in apples after they are cut, which can occur during food preparation. Food preservation is defined as "the process in which food is protected and presented to prevent natural and microbial decay, by modifying the conditions that stop enzymatic activity and the growth of microorganism".



As food is preserved for the following reasons:-

1. To add variety to the diet by making foods available out of season.
2. To make use of food when it is cheap and plentiful and to store it for later use.
3. To vary the diet by preserving food in ways that make a new product out of the food (e.g. pickling, jam making).

## List Methods of Home Food Preservation

- |                   |                       |             |
|-------------------|-----------------------|-------------|
| 1. Pasteurization | 4. Freezing           | 7. Pickling |
| 2. Drying         | 5. Salting and curing |             |
| 3. Refrigeration  | 6. Sugaring           |             |

### 1. Pasteurization

Pasteurization is a process for preservation of liquid food. In this method, milk is heated at about 70°C for 15 to 30 seconds to kill the bacteria present in it and cooling it quickly to 10°C the remaining bacteria present in milk from growing. The milk is then stored in sterilized bottles and pouches in cold places. This method was invented by Louis Pasteur in 1862.

### 2. Drying

Drying is one of the most ancient food preservation techniques. Drying removes the water needed by bacteria yeasts and moulds to grow. If adequately dried and properly stored, dehydrated foods are shelf stable (safe for storage at room temperature). The drying food preservation method is easy to do very safe and can be used for most types of foods like: meats, fruits and vegetables.

### 3. Refrigeration

Refrigeration preserves foods by slowing down the growth and reproduction of microorganisms and the action of enzymes that cause food to rot. Foods such as fresh fruit salads and dairy products can be stored safely for longer periods, particularly during warm weather.

### 4. Freezing

Freezing is also one of the most common processes used commercially and domestically for preserving a very wide range of food stuffs that would not have required freezing in their unprepared state (cold stores provide large-volume, long-term storage of food stocks).

### 5. Salting and curing

Salting or curing draws moisture from the meat through a process of osmosis. Meat is cured with salt or sugar or a combination of the two. Nitrates and nitrites are also often used to cure meat and contribute the characteristic pink color, as well as inhibition of clostridium botulinum.

## 6. Sugaring

Sugar is used to preserve fruits, either in syrup with fruit such as apples, pears, peaches, apricots, plums or in crystallized form where the preserved material is cooked in sugar to the point of crystallization and the resultant product is then stored dry. This method is used for the skins of fruit and ginger.

## 7. Pickling

Pickling is a method of preserving food in an edible anti-microbial liquid. Pickling can be broadly categorized in two categories; chemical pickling and fermentation pickling. In chemical pickling, the food is placed in an edible liquid that inhibits or kills bacteria and other micro-organisms. Typical pickling agents include salts, vinegar and vegetables oil. In fermentation pickling, the food itself produces the preservation agents, typically by a process that produces lactic acid.

### 3.3 DECAY OF FOOD

Once the food is ready for consumption it start to deteriorate and eventually it become unfit for consumption. This deterioration is known as decay and lead to food spoilage. Food spoilage mean original nutritional value, texture, flavour of food is damage the food become harmful to people and unsuitable to eat.



1. Oxidation-oxidize enzymes cause the destruction of certain nutrients e.g. vitamins-C.
2. Browning - if some foods e.g. apples are cut or bruised, the surface will discolour and turn brown due to the activity of enzymes.
3. Ripening enzymes are involved in the process that causes ripening in foods such as fruits and vegetables e.g. bananas, unripe bananas contain starch which gradually converts to sugar.

### Process of Decaying Food

Micro-organisms are microscopic plants or animals, many of which are single celled. Microbiology is the study of micro-organisms.

The main micro-organisms responsible for the contamination of food are:

- Bacteria
- Moulds
- Yeasts

**Food spoilage is caused by two main factors:**

- i) Natural decay
- ii) Contamination by micro-organism

#### Natural decay:

Natural decay in food is the result of

- i) Moisture loss
- ii) The action of enzymes

#### i) Moisture Loss

Moisture loss is most easily demonstrated in vegetables and fruits, which contain large amounts of water. After harvesting, they continue to respire, i.e. their metabolic functions continue, and this results in loss of moisture through leaves and skins. Before harvesting, such water loss would be replaced from the soil through the roots, to retain the structure of the cells of the plants. After harvesting however, lost water is not replaced and the vegetables or fruit shrinks and becomes limp and it's skin becomes wrinkled and leathery. Moisture loss also occurs in other foods, like, meat and fish because of evaporation from the surface.

## ii) Action of enzymes

Many enzymes are present in foods and some are inactive until a food is harvested or slaughtered. Once activated, such enzymes speed up the process of decay by breaking down the tissues and components of the food in different ways.

### What causes food deterioration?

Specific causes of food deterioration are listed below. Deterioration can be caused by one or more of the following:

- Micro-organisms such as bacteria, yeast and molds;
  - Activity of food enzymes;
  - Infestations by insects, parasites and rodents;
  - Inappropriate temperatures during processing and storage;
  - Gain or loss of moisture;
  - Reaction with oxygen;
  - Light;
  - Time.
- Causes of food decay**
- Physical force or negligence

## Causes of food decay

**Bacteria:** Bacteria are microorganisms. They are single celled organisms found in many places including air, water, soil and food.

### Contamination of food by bacteria

Many species of bacteria cause food poisoning often with serious outcomes. It is important to know what causes food poisoning and how to prevent it.

#### 1) Physical Presence of Bacteria:

If bacteria have been multiplied in large number in a food, then their physical presence in the intestine may cause irritation and food poisoning.

#### 2) Germination of Spore:

The germination of bacterial spores are usually accompanied by the production of highly poisonous substance. They can cause severe illness or death even in very small quantities.

#### 3) Production of Waste Products (toxin):

Microbial toxin produced by microorganism. These toxins promote infection and disease. These can cause irritation to the intestine and food poisoning symptoms. The toxins are not destroyed by normal cooking temperature.

- **Moulds**

Moulds are tiny plants, which are just visible to the naked eye. They grow on many types of food especially cheese, bread and fruits. They grow best in warm moist conditions, but will grow at slower rate in cool places. Mould reproduce by means of sporulation.

Mould growth is prevented by cool, dry storage, heating to destroy moulds and spores.

- **Yeasts**

Yeasts are microscopic single celled fungi, which are found in the air and soil, and on the surface of fruits some can tolerate fairly high acid, salt and sugar concentrations and can grow without the presence of oxygen.

**Yeast cells reproduce by budding**

Yeast can spoil food such as jam and fruits by fermenting the sugars to produce alcohol and carbon dioxide gas. The time this process takes will depend on the concentration of sugar in the food and the length of time it is stored. Fruit flavoured yogurt may also be affected in this way.





## Exercise

### Fill in the blanks:

1. \_\_\_\_\_ cell is produce by budding.
2. Oxidize enzymes destroy vitamin \_\_\_\_\_
3. Prolong \_\_\_\_\_ of vegetables should be avoided.
4. Cooking meat on \_\_\_\_\_ heat make it stiff.

### Short question:

1. Why should we preserve food?
2. What is effect of cooking on cereals
3. Write down method of cooking meat.

### Long question:

1. Write a detail note on contamination of food by micro-organisms.
2. What are the cases of food decay?

### PRACTICAL

1. Preserve vegetables and fruits through drying method.
2. Make an apple jam.

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## قومی ترانہ

پاک سر زمین شاد باد! کشورِ حسین شاد باد!  
تو نشانِ عزمِ عالی شان ارضِ پاکستان  
مرکزِ یقین شاد باد!

پاک سر زمین کا نظام قوتِ اخوتِ عوام  
قوم، ملک، سلطنت پائندہ تابندہ باد!  
شاد باد منزلِ مسراد!

پرچمِ ستارہ و ہلال رہبرِ ترقی و کمال  
ترجمانِ ماضی، شانِ حال جانِ استقبال  
سایہ خدائے ذوالجلال!

