

STUDY MATERIAL

FOOD PRODUCTION (809)

CLASS – XI

(2018-19)

PART-B

UNIT 1: Hospitality Industry as a Career

Objectives:

- To explain the scope of hospitality Industry.
- To describe the core and allied areas of hospitality industry.
- To identify the career opportunities in hospitality industry.
- To enumerate the qualities required in personnel willing to join hospitality industry.

Introduction – Scope of Hospitality Industry

The term 'Hospitality industry' is a generic word which includes various fields of service industry such as lodging, event management, transportation – air, rail, water and roadways, theme parks / amusement parks, restaurants, bars, discotheques etc.

Hospitality providers include

1. Hotel Industry
2. Restaurants / Fast food outlets / Bakery shops
3. Travel Agencies
4. Transport Sector – cruise lines, airlines, railways & roadways
5. Banqueting and Event Management
6. MICE – Meetings, Incentive, Conferences & Exhibitions
7. Bars
8. Discotheques & Clubs
9. Time Share holidays
10. Serviced Apartments
11. Retail Sector etc

Hospitality industry is thus very complex and diverse. However, even after all the diversity, the entire industry is unified by one single factor – 'Customer satisfaction'. Hence, the very foundation of the industry is that the customer is treated and referred to as a 'Guest'. This is in accordance with our ancient Indian tradition of '*Atithi Devo Bhava*'.

The hotel industry – Core area



The hotel industry is responsible for providing lodging or accommodation, food & beverage or both to the guests. There is a

vast difference between different types of hotels. Some are budget hotels while others cater to the luxury segment. Similarly some hotels are near airports while other are located in the centre of business hubs. Some hotels may provide only lodging while other may offer a vast variety of services.

There are various kinds of hotels:

- Depending on size – Small, Medium or Large
- Depending on location – Downtown / commercial, Resort, Motel, Transit hotel etc
- Depending on the facilities and services the hotel offers – Star categorization i.e. one star, two star, five star etc

A good five star hotel usually provides following facilities:

- i. Room / bathrooms
- ii. Radio, Television, video in rooms
- iii. Restaurants / Coffee shop / Bakery shop
- iv. Lounges
- v. Bar
- vi. Room Service
- vii. Laundry
- viii. Meetings and Conference halls
- ix. Health club and gymnasium
- x. Swimming Pool
- xi. Business Centre – teleconferencing, internet, office assistance
- xii. Shopping area
- xiii. Doctor on call
- xiv. Travel Desk
- xv. Round the clock assistance

The guest may choose his stay based on facilities offered, location of the hotel and his budget. We must understand that all the hotels are catering to the needs of different segment of guests and each of them is contributing to the growth of tourism in the country. We must thrive to ensure these establishments to be safe and clean for all the tourists in addition to the facilities they offer.

A five star hotel has following departments:

1. Rooms division
 - a) Front Office – This department deals with letting of rooms, taking advance reservations, checking in a guest, allocation of rooms, accepting payments, providing luggage transfers,



coordinating airport pickup & drops, providing foreign exchange, discounts, allowances etc. Front Office personnel form the face of the hotel from the moment guest enters and therefore should be presentable with good knowledge and communication skills.

- b) Accommodation / Housekeeping operations – This department



deals with cleaning of guest rooms and public areas, decorations, flower arrangements, lost & found items, laundry and coordinates with engineering to maintain guest rooms and public areas. Housekeeping personnel

thus are very hard working, honest and have an eye for detail.

2. Food & Beverage division

- a) Food Production – This department is responsible for preparation of food to be served in all restaurants, coffee shop, room service, bars, banquets, lounges etc. The chef is also responsible for indenting, storing, preparation, controlling wastages and menu development. Given the vast variety of cuisines all around the world and the variety of food in our own country, the job demands skill and knowledge about food, ingredients, cooking techniques and a physical stamina to tolerate heat and standing for long hours.
- b) Food & Beverage service – This department is responsible for proper service of all the food items prepared in kitchen, preparation and service of all alcoholic & non alcoholic beverages, maintain stocks, controlling wastages and pilferages etc. The personnel must have knowledge of the dishes on menu, standard accompaniments along with proper cutlery and crockery required to serve the dish. He must be willing to serve and have good communication skills.

3. Supporting departments

- a) Hotel Engineering – To maintain HVAC (Heating, Ventilation and Air conditioning), all types of electrical, plumbing, carpentry work and routine maintenance of the hotel.
- b) Kitchen Stewarding – To keep all the kitchen area clean at all times, garbage disposal, dishwashing and making all crockery, cutlery available for use.
- c) Human Resource – To recruit, train, develop all the staff members from all departments.
- d) Sales & Marketing – To sell rooms or banquets, take function bookings, to promote hotel sale by approaching clientele / companies, offering discounts etc

- e) Accounts / Finance – To handle all money related documents and procedures. This includes audits, payroll, payments to suppliers, credit control, maintain all the books of accounts etc
- f) Purchasing & Store Management – To identify suppliers, procure material at the most economic rates and proper storage and issue of commodities.
- g) Telephone exchange – To ensure smooth internal and external telephonic communication
- h) Security – To keep the hotel and guests safe at all points of time. This includes checking all vehicles, baggage, persons entering the hotel, internal CCTV cameras etc
- i) Horticulture – The art of garden cultivation is important to maintain the façade of the hotel and enhance the decor.

Allied Areas of Hospitality Industry

The hospitality industry is very complex and varied. Hence apart from hotels there are many allied areas where hospitality graduates can make a career.

Some of the key allied areas are:

1. Fast Food / QSR (Quick Service Restaurants)

Foods that are prepared and dispensed quickly areas known as fast foods. This is possible as there are many pre-processed ingredients such as sauces, seasonings, buns etc are purchased and are simply assembled and cooked to finish quickly after receiving orders. Thus both the preparation and service takes much less time than normal meals. The menus include burgers, french fries, chicken Lollypops/nuggets, ice-creams, aerated beverages, iced tea, pizzas, fish and chips etc. Some of the popular fast food chains include Dominos, Pizza Hut, McDonalds, KFC, Burger King, Subway etc. The concept is based on consistency of product, quickness of preparation /service and economical costs. The personnel working in this segment must be updated with all pre-processed products in market, take special care of hygiene and should be multi- skilled in cooking, service, management and customer handling.

2. Restaurants / Bakery Shops:

Apart from being a part of a large hotel, there are many stand-alone or restaurant chains that offer only food & beverage and do not deal with lodging. These chains vary from self service, casual dining to formal luxurious dining. They may serve only one cuisine or may be multi-cuisine. They may also be theme based – e.g. a Gujarati restaurant, an Italian restaurant etc.



The bake shops usually sell sweet and savouries prepared in bakery such as breads, *paos*, cakes, pastries, croissants, patties etc in the form of sit-down or take away.

3. Travel Agency :

Travel agencies are service providers who provide travel and tourism related services to the customers which include hotel bookings, car rentals, air ticketing, cruise bookings, guided tours, travel insurance, foreign exchange etc under one roof. This helps the customer as it saves time and energy of organising all the above individually. On the other hand they are a source of business for hotels, airlines, cruise lines, taxi operators etc thus earning some commissions from them and availing some discounts that may partly be passed on to the customers. Hence, it is possible to book a hotel room on lower price through a travel agency than directly from the hotel.

There are many renowned travel agencies such as SOTC, Cox & Kings, Thomas Cook, Kesari, Make my trip, Yatra, Go Ibibo, Travel guru, Mercury travels etc. These agencies today use internet and customise tours as per customer's needs.

A travel agent should therefore must have complete knowledge of the products he sells, should have excellent communication skills along with all rules and regulations related to foreign exchange, travel bookings, visa procedures etc.

4. Transport Sector – cruise lines, airlines, railways & roadways

Transport is an essential feature of hospitality industry. People travel to various destinations for varied reasons.

Cruise lines are shipping companies that have luxurious ships or yachts which sail on a particular ocean route carrying passengers from one destination to another. They are luxurious hotels on a ship with all the modern facilities on board like butler service, suites, restaurants, bars, swimming pool, gymnasiums, movie theatres, library and even amusement parks. Some renowned cruise liners are Carnival Cruise Line, Royal Caribbean International, Costa cruises etc.

Airlines provide public transport via airplanes. This service requires host of hospitality services on ground and in air. Ground duties include ticketing, check-in of passengers, luggage handling etc while in-air services include flight catering by cabin crew who are responsible for seating, catering, explain emergency procedures etc during the flight. There are also flight kitchens run by various organisations such as Taj SATS, Chefair flight catering, Skygourmet catering etc near major airports that are responsible for hygienically cooking & packing meals that are to be served on board various domestic and international flights.

Similar to airlines, in India, IRCTC (Indian Railways Catering & Tourism Corporation), a subsidiary of Indian railways handles catering, tourism and ticketing of the Indian railways. The vast network of Indian railway makes catering a complex task as one needs to take care of costs, timings of service, variations in palate and hygiene all at the same time.

Roadways' catering is a sector with varied motels (motorway hotels), small restaurants or *dhabas* and fast food outlets on main highways across the country. In India these are all independent outlets. However there may be an organised roadways catering segment e.g. 'Moto Hospitality' is a company that operates about 58 motorway service stations across United Kingdom.

5. Banqueting and Event Management

Banqueting is organising functions which may involve functions like a product launch of a company, a wedding, fashion show, state event etc. The requirements of each of the function are varied in terms of number of people who are to be catered to, decoration, menu, lighting, seating etc. Banqueting can be a part of a large hotel or may be stand alone. There are huge banquets which can be converted to smaller halls with partitions to hold multiple functions at the same time. The banquet employs Chefs, F & B Service personnel, Sales personnel, Managers etc.

6. MICE – Meetings, Incentive tours, Conferences & Exhibitions

MICE is the specialised field which usually combines pleasure and business. This may include making travel arrangements, bookings of accommodation, providing conference venues, arrangement of sightseeing and excursions, events, entertainment and even activities for companions accompanying delegates.

7. Bars

Bars can be a part of larger hotel or within a restaurant at times known as resto-bars. However, there are many bars which have a snack menu alongside a more elaborate drinks menu. There are bars which specialise in serving freshly brewed beer. Thus, the personnel working in the bar must have a thorough knowledge of the drinks and should be able to mix them correctly to prepare cocktails. This includes showmanship as well.

8. Discotheques & Clubs

They are entertainment venues with restaurant and bar and are generally characterized by live music and dance floor for the guests to enjoy dance along with food and drinks.

9. Time Share holidays

Time share is a concept which is also popular by the name of vacation ownership. It is a property with a divided form of ownership or use rights among various people. Each owner of the property is allotted a period of time each year for the usage of property. This base concept is now modified in many ways to suit needs of various time share owners. Some popular time share companies are Club Mahindra, Sterling Resorts, Country vacations etc. Management of these time share properties is a part of hospitality industry.

10. Serviced Apartments

These are fully furnished apartments available for a short-term or long-term stay providing hotel like amenities such as housekeeping, room service and laundry. It may have other amenities such as a common lounge, fitness centre, a kitchenette etc. Though open to public, many companies hire these apartments for their executives deputed for an assignment away from home or even for the duration till they can locate a suitable residence. They are also used by officials who work in another city away from their residence.

11. Retail Sector



Retail is selling of consumer goods or services to customers through multiple levels to earn a profit. Retailing means procuring in bulk and fulfilling small orders of large number of end users of a product. This is done through large stores such as Walmart, Reliance, Wills lifestyle, Home Centre etc or even through internet using online applications or websites. Retail marketing is done in departmental stores, warehouse, boutique, convenience stores, super markets, malls etc. The sales team is the backbone of this operation. Their salesmanship, diplomacy, communication, product knowledge and helpful behaviour is what attracts new customers and keeps the regular once loyal to the brand.

Career opportunities in Hospitality Industry

The hospitality sector is renowned for the variety of opportunities it unfolds. This sector employs people who possess knowledge of product, skill to do a work and have a good communication skill. The career opportunities are available in both private and public sector in the form of jobs. It also equips a person to be an entrepreneur.

The Hotel Industry: Job positions are available in various core and supporting areas for a hospitality management graduate. They are:

- a) Front Office Assistant / Supervisor
- b) Guest Relations Executive

- c) Banquet & Room Sales
- d) Housekeeping Assistant / Supervisor
- e) Chef de partie (Section Chef)
- f) Commis
- g) Food & Beverage Assistant / Supervisor
- h) Butler service
- i) Human resource / Training Assistants / Supervisor

Allied areas : Job positions available for a hospitality management graduate are:

- a) Travel agency managers
- b) Domestic travel operators
- c) International travel operators
- d) Air ticketing officers
- e) Forex (Foreign exchange) officers
- f) Guest relations officers
- g) Chef in an airline catering company
- h) Airline stewards / flight attendants
- i) Airline ground operations
- j) Industrial canteen managers
- k) Railway catering managers
- l) MICE Operators
- m) Event Coordinators
- n) All the core positions of hotel industry are available on cruise lines

Retail Industry:

- a) Store Managers
- b) Customer relations officers
- c) Sales Associates
- d) Sales Executives
- e) Shift Managers

Entrepreneurship:

An entrepreneur is a person who sets up a business of his own developing his own business model or entering into a franchise agreement and gathers his own resources to run the business. This is a major advantage for hospitality industry personnel as he is equipped with knowledge and skill to be an entrepreneur whether it be opening a restaurant, event management, bakery, travel agency, catering company etc. Entrepreneurship is crucial for economic growth and job creation in a country's economy. It fulfils the desire of a person to be his own boss. It

involves some financial risks initially but when handled well reaps great benefits.

Food critics/writers/bloggers:

Many good magazines, media and newspapers use the services of food critics. This is a platform for reviewing the food and services of a hotel / restaurant. This may help to elevate the standing of the outlet or may be detrimental. The critics / writers may also write about prevailing food trends, compare similar restaurants or even write about successful personalities from the industry. They are well versed in the culinary arts and contribute their finding to newspapers, magazines and media.

Qualities required by a personnel willing to join hospitality industry

The hospitality industry is a service based sector. Making a guest feel at ease, providing him with product he is paying for, making him feel value for his money are the core factors that can keep a company maintain a goodwill in this highly competitive market. To be a successful hospitality professional, one must develop some attitudinal and behavioural traits:

- a) Personal hygiene
- b) Workplace hygiene.
- c) Good communication skills
- d) A smiling and welcoming nature
- e) Following social decorum and manners
- f) Having a happy to serve attitude
- g) Honesty
- h) Diplomacy
- i) Having a sense of responsibility towards completing the task assigned
- j) Following all safety regulations in the work area.
- k) Being quality conscious.
- l) Following standard operating procedures.
- m) A good team player
- n) A keen attitude to learn new things.
- o) A sound knowledge/skill of the work assigned.
- p) Respecting the values of the organization.
- q) To continually thrive to enhance ones skill and knowledge.
- r) Being patient to bear the work pressure in busy times.

Summary

Hospitality industry is a service oriented industry that includes core area such as various hotels and allied areas such as travel agencies, airlines, cruise liners, stand alone restaurants, bars, motels etc. Rooms division and Food & Beverage division are the major departments in a hotel. A hospitality graduate can carve a career in any of the core or allied areas. Apart from this the course equips one with knowledge and skill to be an entrepreneur or even a food critic. One can also enter retail marketing area for a career. It is important to have a pleasing manner, communication skills, product knowledge and a service attitude to succeed in this sector.

-----Exercise-----

Q.1. Write short notes on:

- a) Hospitality industry
- b) MICE
- c) Event Management
- d) Time Share
- e) Service attitude
- f) Motels

Q.2. a) List the major and supporting departments in a hotel? Explain their role.

b) Do you think supporting departments are important for guest satisfaction in a hotel. Why?

Q.3. What are the behavioural traits one must develop to succeed in hospitality industry?

Practical:

1. Make small groups in class and choose either a core or allied area of hospitality industry. Prepare a presentation / chart on the given area including the following:
 - a) Scope of work in the area
 - b) Major companies / brands operating
 - c) Job position available to a hospitality graduate
 - d) Personality traits required to work in the given area

Present to the class or display charts on boards.

UNIT 2: The Food Production department

Objectives:

- Introduction to the operations of a commercial kitchen.
- To list the various sections of a kitchen and their major functions.
- To identify skill and knowledge components to be developed for working in commercial kitchen.
- To enumerate the attitude development for working in kitchen.
- To draw the organization structure of the commercial kitchen
- To write the duties and responsibilities associated with each hierarchical position in the organization structure.

Introduction to the kitchen operations

Activity: You have planned to invite one of your friend's family for dinner tomorrow evening at your home. Prepare a list of tasks you need to do for preparing the meal at home tomorrow so that you are able to serve fresh and tasty food without any last minute problems.

A commercial kitchen is responsible for catering to a large number of guests. The menu lists more than fifty dishes that can be ordered by the guests. Hence this complex task is to be planned well in advance.

The kitchen operations begin from the time when the section chef of the kitchen checks the already available ingredients in the kitchen. He then checks the next day's sales forecast and places the order for ingredients in the purchase department through Indents. The purchase department further compiles orders from various kitchens and places the order with the suppliers of meats, vegetables, grocery, milk and milk products etc. The raw material is received and stored. The raw material is then issued to various sections as per their requirement. Each section of the kitchen then processes the food, cooks and handover to the service department as per guest's orders. The server then takes the food from kitchen and serves it to a guest in the restaurant.

It is important that all the dishes listed in the menu should be available for service to the guest. However, a chef cannot order or cook unlimited quantities. Food is a perishable commodity. It will deteriorate with time and unsold food will be a waste. A chef has to therefore balance the quantity of raw material he orders and cooks so as minimise wastages.

The food should be prepared hygienically and be consistent in quality & quantity at all times.

Sections in a kitchen

A hotel kitchen is divided into various sections for ease of work. These sections can be small or large depending on the volume and type of business. Each section has its own set of responsibilities. All the sections together work as a team to fulfil the guests need and prepare food in time.

It is important to divide the hotel kitchen in sections because:

1. Cooking is a highly skilled task. There Chefs specialize in one or few fields of cookery e.g. there may be a Chef who can make very good *Tandoori* dishes but may not be able to make Italian food well. Similarly, another may specialise in Japanese cuisine and will not be able make an excellent bread. The division of work in sections is important to get the best of each of the chef's expertise for tasty food and happy guests.
2. The division clarifies the responsibility of each section so that work can be carried out well in time without any chaos.
3. This is also important to maintain consistent quality and taste of the dishes. Each section has few chefs who share the responsibility of preparing a consistent quality, taste and presentation of dish to the guest. Whenever a new chef joins the team, he is introduced and taught the same preparation to maintain consistency.

Sections in a kitchen:

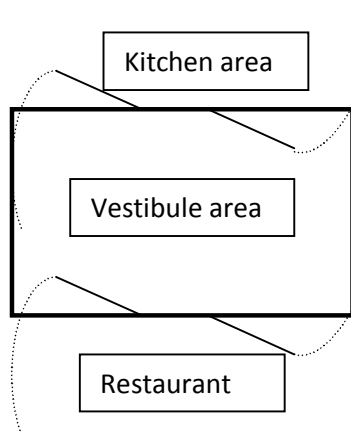
A large commercial kitchen can be divided into many sections. Some of them are:

- a) *Pre-preparation & Cooking area*
- b) *Dish wash & Pot wash area*
- c) *Storage area*
- d) *Chef's office*

Pre-preparation & Cooking area:

1. Main Kitchen: This section of the kitchen works 24 hours and caters to the orders of Coffee Shop and In-room dining (Room Service) that are open round the clock. This kitchen occupies a large space and provides a wide range of food varieties such as Indian, Continental, Fast food and popular local food. It has various sub-sections and a large pick-up counter. The dishes vary from time to time – breakfast, lunch, dinner and round the clock dishes. Hence, the chefs work in three shifts – morning, evening and night to complete required tasks. This kitchen acts as nerve centre of all the kitchens in the hotel.

2. Specialization kitchens: These kitchens are designed specially to cook a particular cuisine such as Indian, Italian, Continental, Japanese, Oriental etc. and cater to a specialty restaurant in the hotel. The layout of each kitchen varies considering the kind of ingredients to be processed and equipments required for preparing special dishes. They are also called 'Satellite kitchens'. These kitchens are always located near the specialty restaurant separated by double doors / traffic



doors, then a vestibule and another set of double doors. The double doors are designated on left side to enter and right side to exit always to prevent collision. The vestibule separation helps to control the noise from kitchen escaping in to restaurant and also cushions the variation in temperature between kitchen and restaurant. The satellite kitchen staff is well trained to be able to prepare the dishes of the specialty cuisine. The kitchen has its own equipments, cold store, crockery and work schedule. Many of the staff members are deputed on break shifts i.e. work for lunch and dinner timings and a break of 3 to 4 hours in between.

Many restaurants today have a 'Show Kitchen'. This is usually a satellite kitchen which is partly or wholly visible to the guests dining in the restaurant through a partition panel. The guests can see the chefs working and preparing food while sitting in the restaurant.

3. Butchery: This is a section which specializes in cutting of poultry, meat and all types of seafood. The chefs take care of the hygiene and are trained to process all types of animal meat. The butchery has its own walk-in store and deep freezer. The chef cuts the meat as per requirement, weighs and vacuum seal it before labelling and storing in the deep freezer. It is from this common butchery from where all other kitchens take meats as per requirement for preparation of final dishes. For e.g. Chicken are received in Butchery. They are processed to prepare boneless chunks,



drumsticks, minced chicken meat, chicken lollipops etc as per the menu, weighed, vacuum sealed, labelled with a meat tag and stored. Various kitchens indent the meat as per their requirement and take it from butchery. The principle of FIFO – First In First Out is applied while issuing. Special care is taken while processing and storage to ensure hygiene and temperature control so as to prevent any kind of bacterial growth.

4. **Bakery&Pâtisserie:** Bakery is a section which is responsible for preparing fermented baked breads such as whole wheat bread, baguette, rye bread, brioche etc while *Pâtisserie* deals with sugary colourful baked goods like pastries, cakes, pies, tarts, puddings, croissant, macaroons etc. These breads and sweets are an important part of buffets in coffee shops, lounges and other F & B outlets. Many hotels have an in-house bakery shop where breads, cookies, tarts, pies etc are available for sale.



cheese platters etc. Cold meat platters include a variety of sausages, galantines, mousse, pâté etc. These platters are kept on cold buffet in coffee shop or restaurants and served in lounges during hi-tea.

6. **Banquet Kitchen:** A banquet is a large hall which is used to hold a variety of functions as per guests need. This could be a fashion show, product launch, diplomatic dinner, conference, wedding etc. Therefore the menu is varied – from Indian, Continental, Snacks, Sweets, and Drinks etc. The type of service also varies from buffet, platter to plate service or proper formal sit down dinner may be in the form of a *Thali* in case of an Indian meal. This kitchen is responsible for preparing food of various types in varying quantities. Some range from preparing food for 50 guests while others cater to 1000 guests. A Banquet Sheet or a Function



Prospectus is prepared well in advance detailing each requirement of the guest and is then circulated to various departments. The banquet chef has to plan in advance, indent and prepare food as per guest requirements for each function.



7. Commissary: Some hotels have a separate section altogether to clean and cut vegetables and fruits. This section is called Commissary and it is responsible for preparing vegetables and fruits ready to use in other kitchens. They peel and cut and process vegetables and fruits, pack and supply to other kitchens for cooking dishes.

Storage area

Each of the above pre-preparation and cooking areas have their own storage areas easily accessible from the kitchen. These include:

1. Dry store: Dry store includes flour, rice, pulses, cereals, jams etc. Cupboards and racks are there in each section to keep dry ingredients at room temperature. The area should be free from odours and pests.
2. Commercial refrigerators: They are big capacity four door refrigerators to store products in a working kitchen. It is quickly accessible.
3. Walk-in: A large refrigerated room where one can walk inside and store ingredients on racks in crates. A temperature of about 4°C is maintained suitable to store fruits, vegetables, milk, eggs etc. Segregation of ingredients is essential.
4. Deep freezers: A room usually behind walk-in with another door where sub-zero temperature is maintained. This is used to store meats, ice creams and other frozen products. Each item should be kept in separate racks and tagged. The products should be used on FIFO basis and never used post expiry date.



Pot wash & Dish wash area:

All the kitchen utensils, pots and pans must be clean and hygienic at all times. Hence, after each use they are kept in a separate pot wash area near kitchen. The kitchen stewarding department is responsible for keeping the kitchen and kitchen equipments clean at all times. Once cleaned, the utensils are

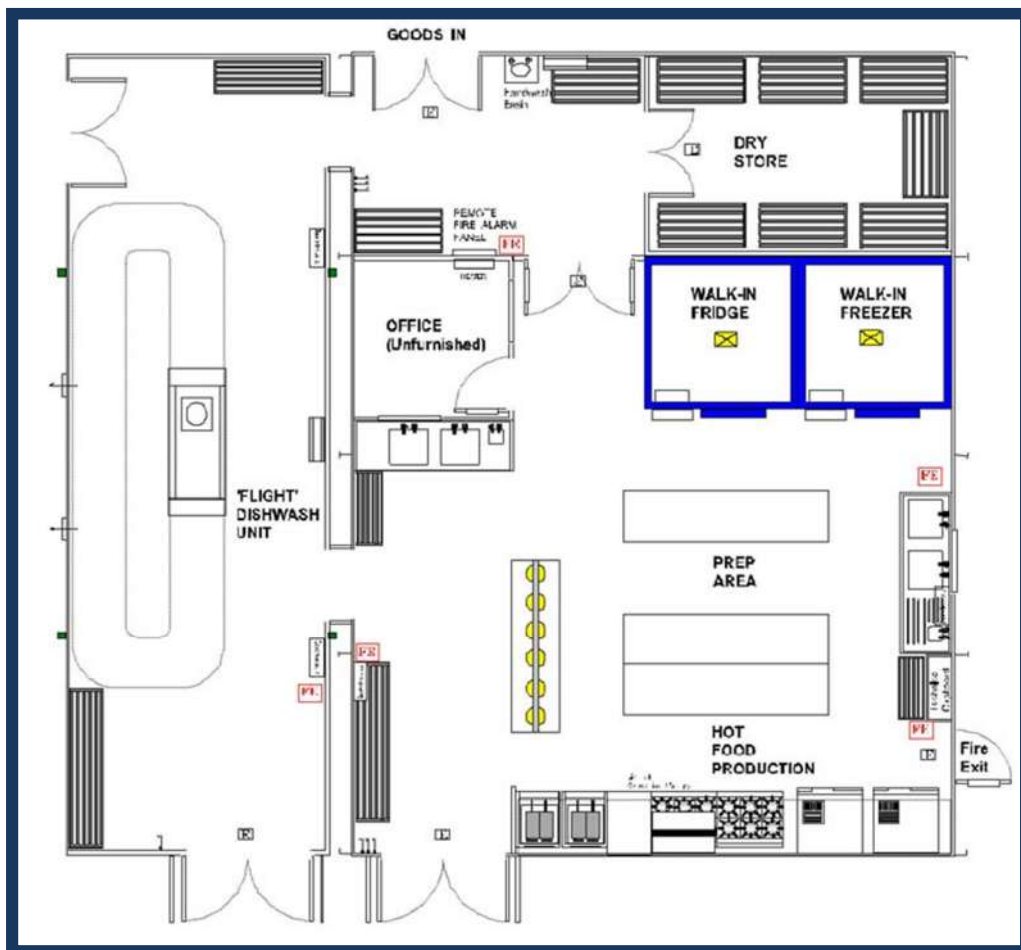
kept in a pot rack and reused. Similarly, all the crockery, glassware, serving platters and cutlery used in the restaurant is also kept in dish



wash area. These too are cleaned and sanitized after each use. Dish washing machines are used for the task. The kitchen stewarding workers clean all the kitchen pots, floor as per their daily schedule and ensure cleanliness at all times. They also empty out the garbage bins from time to time.

Chef's Office: This is an area from where the Executive chef does all his administration tasks and paperwork. It is also used to place orders to purchase department and to check food cost data. Chef is also responsible to ensure good quality of food being served by kitchens. He checks the day to day operations and plans for any changes in menu, celebrating special food festivals and is responsible for prevention of wastage and pilferage from the kitchen. His office is usually located near main kitchen.

A sample kitchen layout is given below:



Each hotel has its own best possible layout as per their requirement. They may have some or all the sections in the kitchen. Many hotels do not have a separate commissary. They may even have more for e.g. a bakery can further be divided into baking area and pastry or confectionary area as colder temperatures are needed here.

Knowledge, Skill and Attitude in the kitchen

Knowledge is information acquired through experience or education. Skill is the expertise in doing a task practically. Attitude is mindset or thinking towards a particular task. All three are thus interrelated and are equally essential for a professionally sound work.

Knowledge is acquired through books and experience. A chef must know his ingredients and their taste, varieties available, season in which they are available, changes that take place on application of heat or cold, cooking in acidic or alkaline medium etc. Unless a chef knows his ingredients well, he cannot make best use of them. The chef should also know about equipment used in kitchen. These equipments are an essential part of a commercial kitchen. They speed up the work, make it easy and also help in maintaining consistent quality. A chef must also have knowledge of market prices and costs of ingredients and dishes. A hotel is after all a business which survives on profits. A major chunk of cost is food cost. Hence, controlling food cost is an important part of being a chef. A chef in modern time is a chef, sales executive, cost controller, entrepreneur, artist and scientist!

Skill is practical application of knowledge gained. Each ingredient carries a unique taste and is cooked in some traditional ways. One can also experiment the new tastes, combinations and presentations. So, practically making a tasty dish & presenting it beautifully is a skill. This needs to be developed by continuous practice and repetitions to overcome shortcomings.

Attitude means mind-set or approach of a person towards work. Behaviour is ones general conduct or manners. Both attitude and behaviour are inter-related. If we imbibe positive thoughts in our minds and keep a responsible attitude, it will naturally be visible in our acts, conduct and manners. A commercial kitchen is hub of activities. Many people belonging to different regions, educational background, age groups, religion work in a kitchen. Also, during the regular shift, one is always on the toes to complete assigned tasks and responsibilities. For working in such circumstances one must develop some attitudinal and behavioural traits to work as a successful professional:

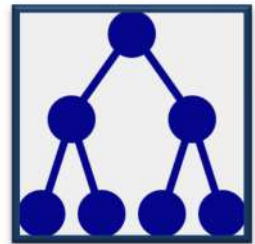
- s) Maintain personal and workplace hygiene.
- t) Follow safety rules and regulations in kitchen.
- u) Following standard operating procedures.
- v) Being responsible, honest and committed to complete the tasks assigned.
- w) A good team player and being responsible for ones share of responsibility.
- x) A keen attitude to learn new things.
- y) Physically healthy and being able to stand for long hours patiently.

- z) Respecting the values of the organization.
- aa) Willing to enhance one's skill and knowledge.
- bb) Being patient to bear the work pressure in busy times.
- cc) Support the team members and encourage all to work better.
- dd) To have passion for cooking.

Cooking is a continuous life-long learning. There is no end to learning how to prepare new dishes, various ways of cooking one dish, the art of presentation etc.

Organizational Structure of the kitchen

The structural hierarchy of a kitchen is known as Kitchen organization. Hierarchy refers to the flow of authority from top to bottom in an organization and with respect to the kitchen, it refers to the flow of authority commencing from executive chef and goes to the bottom i.e. Kitchen helpers.



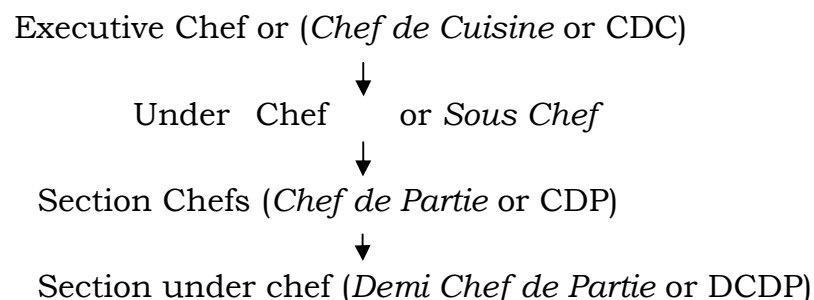
The number of positions and also the number of employees at each position differ from hotel to hotel depending on following factors:

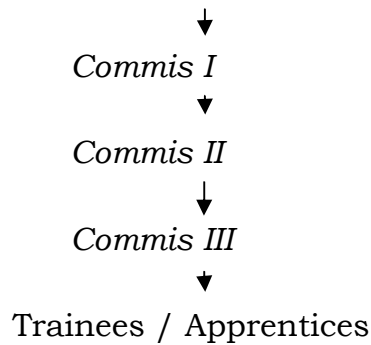
- The variety of dishes that are offered on the menu
- Number of people expected to be dining in the restaurant.
- Use of convenience foods – e.g. Readymade burger patties which need to only be deep fried not prepared.
- Types of equipment available - the level of automation – e.g. if there is a machine such as a commercial food processor for cutting and chopping, less number of people are required to do the job.
- Need of skill involved at the various levels – specialization jobs e.g. a cook trained to work on *tandoor*.

The kitchen is divided into various sub-sections and each section contributes in preparation of food.

Hierarchy in Kitchen

Hierarchy positions in hotel kitchens are more popularly known by French names. A typical kitchen hierarchy is as following:





The Executive Chef is the head of the kitchen department. The *Sous Chef* or Under Chef who assists him in his work and looks after everyday operations directly. The kitchen is divided into various sections and each section has a section head called CDP. The number of CDPs in each hotel varies depending on the need of the organisation. Various CDP's can be Larder Chef (*Chef de Garde Manger*), Bakery Chef (*Chef de Boulangerie*), CDP of Main kitchen, CDP of Indian / Italian / Oriental restaurant etc. Each CDP may have a DCDP or a section under chef to look after actual operations. He is further assisted by Commis or assistant cooks. Assistant cooks are further divided according to seniority and experience as *Commis I*, *Commis II* and *Commis III*. Number of commis in a kitchen is dependant on the amount of work. Lastly there are trainees and apprentices who are still learning skills to take up a career in food production department.

Duties and Responsibilities

EXECUTIVE CHEF

The **Executive Chef** is manager who is responsible for all the aspects of food production, including:

- An overall in-charge of the department and is responsible for quality of food prepared in the kitchen.
- Responsible for developing menus for new restaurant or updating old menus.
- Responsible for keeping a track on food costs and controlling them so that profit can be maximized without compromising the standard quality.
- Ensures proper and timely availability of raw materials required in liaison with purchasing department.
- Plays a significant role in selection of new staff and training them according to the hotel's standard procedures.
- Ensures that hygiene and safety practices are followed by all the employees in kitchen.
- Coordination with all other departments of the hotel to ensure smooth workflow and guest satisfaction.

- Involved in taking all long term decisions regarding forecasting, costing, renovations etc involving financial aspect.
- A team leader with positive attitude and managing the entire workforce effectively to the organization goal.

SOUS CHEF / UNDERCHEF

- The direct in-charge of production operations and work as second in command to the executive chef whose job is more administrative in nature.
- Responsible for following of standard recipes, presentations and procedures in kitchen.
- Train Staff on improved work procedures, quality food production, economical usage of food materials and the attractive presentation of Food items.
- Account for the usage, consumption, spoilage and control of food stuff produced or stored under his supervision
- Look after the function of the executive chef during his/her Absence.



CHEF DE PARTIE / SECTION CHEF

- In-charge of a section of kitchen e.g. Bakery, Indian kitchen, Chinese kitchen, Larder (cold kitchen) etc.
- Directly responsible for overall working of their section and coordination with other sections of the kitchen.
- Maintain food costs of their department – reducing wastages.
- Indenting (preparing a list of ingredients required the next day or in near future) for their department on daily basis.
- Preparing duty rosters of the staff in their section and managing leaves.
- Maintaining hygiene and safety in their departments.
- Following standard procedures and presentations.

DEMI-CHEF DE PARTIE / SECTION UNDER CHEF

- Helping CDP in all the daily operations of the section.
- Taking over all responsibilities of CDP in his absence / leave.
- Training Commis in day to day operations of section.
- Duty allocation to Trainees / Apprentices in the department.

ASSISTANT COOKS

Usually there are three levels termed as *Commis I*, *Commis II* and *Commis III*. They are deputed in a department and deal with carrying ingredients from stores, pre-preparations (cutting, chopping etc.), storing raw materials properly and helping the section chef in preparing and presentation of the dishes.

TRAINEES

These are usually either new staff learning work or even students studying hotel management and willing to take up career in hotels.

Thus the kitchen brigade works together to ensure smooth flow of operations and maintain a consistent and hygienic product.

Summary

A commercial kitchen has a vast variety of operations. It is divided into various sections to ensure clarity of functioning. These are Pre-preparation & cooking area, Pot wash area, Storage area & Chef's office. Various sections in cooking area are Main kitchen, Specialty / Satellite kitchens, Bakery, Butchery, Larder etc. The Executive Chef or CDC heads the food production department. A team of chefs comprising of Sous Chef, CDP / Section Chefs, DCDP and Commis in the hierarchy work in their respective kitchens and ensure a quality product for sale in the hotel. Good knowledge of ingredients, methods of cooking and food is the necessary for the job. Skill to prepare and present delicious food is another essential feature for the job. A service attitude, passion for cooking and physical strength to withstand long standing hours is necessary to be a chef.

-----Exercise-----

Q.1. Write short notes on:

- a) Satellite kitchen
- b) Kitchen Stewarding
- c) Factors affecting organizational hierarchy in a kitchen
- d) Bakery & *Pâtisserie*

Q.2. Compare and list the knowledge, skill and attitudinal traits required to work in a commercial kitchen.

Q.3. Write the duties and responsibilities of the following:

- a) Executive Chef
- b) Chef de partie
- c) Commis

Q.4. Discuss why is it important to have sections in a kitchen?

Activity:

Plan a visit to a large hotel requesting to see both 'front of the house' and 'back of the house areas.' Notice the uniforms and sections of various departments.

Practical:

Draw the Kitchen organization chart of a commercial kitchen

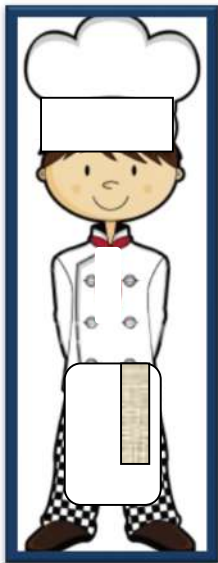
Unit 3: Uniform, Safety and Hygiene in kitchen

Objectives:

- To describe the uniform & protective clothing worn by a Chef and its importance thereof.
- To enumerate the general safety rules in a kitchen.
- To explain the importance of hygiene in a kitchen.
- To list Do's and Don'ts for personal hygiene
- To identify good practices for workplace hygiene and safe food handling

Uniform & Protective Clothing

A Chef's job includes cooking on gas burners, using various electrical equipments, cutting with equipments having sharp blades such as in a bone saw or a gravity slicer etc. He uses hot oil, hot water and enters deep freezers to keep or take some ingredients. At the same time, it is also very important to cook hygienically i.e. with clean hands, no hair fall, no dripping sweat due to heat, clean cloths used for wiping etc. The uniform protects the



Chef from work hazards and also prevents contamination of food. It is for these reasons that a uniform & protective clothing are necessary for working in a kitchen.

Chef's Uniform:

Chef's uniform is made up of white cotton material. However, many restaurant's have chef's uniform designed in theme colours or designs. Apart from these minor variations, a chef's uniform comprises of the following:

1. **Chef Coat:** A double breasted buttoned coat, full sleeved covering the arms, chest and stomach. This is made up of cotton so as to prevent catching fire easily and protecting chef's body by absorbing thermal shocks from entering and exiting the walk-in refrigerators frequently. The fitting should be comfortable ensuring free movement of arms and body – neither loose nor body fitted.
2. **Chef's Trousers:** A comfortable trouser traditionally of small check pattern in black & white, made of cotton is worn. This should also be of comfortable fit.
3. **Apron:** A Chef's apron is worn over chef coat to protect the belly area of the body which is likely to touch work table / food and is nearest to heat while working on gas range. This is also made up of cotton and is white

in colour. This protects chef and chef coat from small spills and stains. It is easy to change, hence helps to keep the kitchen personnel have tidy appearance at all times.

4. **Neckerchief / Chef's scarf:** A chef's neckerchief is a small triangular shaped cotton cloth which is folded and worn like a tie. However, unlike tie, the hang of the cloth is small and is tucked back inside the knot. The neckerchief absorbs all the sweat from our neck and prevents it from falling down. It is traditionally made up small check patterns in various colours such as black & white, green & white etc which depict the designation of the chef. However, it could be plain white or of any other colour.
5. **Safety shoes:** The safety shoes have non-slippery sole, hard toe and cover the entire foot. This is important to have a hard toe so as to protect foot from hot liquids in case they spill.
6. **Chef Cap:** There are a variety of chef caps. They can be made with cotton cloth or different types of paper. Paper caps are disposable one time use caps. Cloth caps should be washed, starched and ironed. They are available in different shapes and designs. Irrespective of type, it must cover the entire hair and fit on the forehead. This prevents hair from falling in the food and also absorbs perspiration on the forehead.
7. **Name Tag:** Many chef coats have embroidered names on them. As per the hotel policy, the chef might be asked to wear their name tags if not embroidered. However, this is not a compulsory part of uniform.
8. **Dish cloth:** The chefs are always advised to keep one or two dish cloths handy tucked into apron. This can be used to clean tables, hold hot pots or even wipe hands. The cloth should not leave lint on hands or surfaces and should have absorption quality.

General Safety / Precautions in the kitchen:

- Never run in a kitchen, even if in hurry. This prevents collisions and skidding on floor.
- Ensure that all gas knobs are switched off when not in use. Leakage of cooking gas can be smelt and this should immediately be checked.
- Keep all the knives and other equipments in a safe place. Leaving them near edge of a table or hidden under lots of pots may cause an injury.
- Always follow standard operating procedures while operating equipments. For e.g. always wear the metal glove before handling bone saw.

- Keep your eyes open and be observant. Never play with gas flame or knives.
- Keep work area uncluttered. Also ensure you pick the ingredients and keep them back in designated areas only not lying here and there.
- Keep the work area clean at all times. Spillages of oil or water can cause slips and injuries.
- Always wear protective clothing and suitable antiskid shoes.
- Never carry hot oil or water. Let it cool. Then transport.
- Allow hot equipment to cool before cleaning.

Maintaining Hygiene

Hygiene refers to conditions and practices that help in maintaining health and prevention of diseases by employing cleanliness. Harmful bacteria and other pathogens can spoil the food and the contamination is passed on to all those people who eat the food making them sick. Hence the job of a chef is to ensure that the food he cooks is safe to eat. To ensure this one must follow personal hygiene, workplace hygiene and employ safe food handling practices.

Personal Hygiene

Personal hygiene is about keeping our body clean from head to toe. This is essential for breaking the cycle of disease transmission from one person to another. Good personal hygiene practices include:

- Brushing teeth twice a day. No foul breath.
- Taking a bath everyday.
- Clipping the nails.
- Not wearing any nail paints / colours on nails.
- Shaving everyday else keeping trimmed moustaches and beard tied with net.
- Short hair or tied in a bun to keep them under cap while at work.
- Minimal jewellery / rings
- Clean clothes
- Polished shoes
- Covering any cuts or boils in hand, else refraining from cooking till healthy.
- No transmittable skin related infections / diseases.
- Good hand washing habits
- No chewing gums, strong perfumes etc
- Cover mouth while coughing and sneezing.

Personal hygiene is important to protect self from diseases and gives us confidence to interact socially.

Workplace hygiene

A chef works in kitchen all day. The heat, grease and moisture in the kitchen makes it imperative that it be cleaned regularly to ensure hygiene. Keeping workplace hygiene includes:

- Clean work tables, equipments and floor area.
- Throwing garbage in designated bins and keeping them covered.
- Cleaning any spillages immediately.
- Keeping used vessels / pots in pot wash area.
- Washing perishables in designated areas preventing spillages on the floor.
- Regular cleaning schedules by the kitchen stewarding department – cleaning equipments, floors, emptying garbage bins etc
- Weekly or monthly cleaning of ducts, chimneys and other high cleaning depending on requirement.
- Ensuring proper ventilation in the kitchen.
- Keeping the kitchen pest free.
- Covered and clean drainage system.
- Provision of clean and suitable sanitary conveniences near kitchens for employees to use.
- Hand washing areas in each & every kitchen with warm water, soap and paper towels. Many kitchens also have hand wash areas where tap is opened using foot pedal instead of hands.



Safe food handling

Handwash is the foremost requirement before handling food. Hands should be washed before beginning the work, after using sanitary conveniences, coughing or sneezing, eating, smoking, clearing of garbage, cleaning work tables or areas, touching body parts like wiping forehead, itching hair etc. While working one must wash hands frequently to prevent contamination. Though a small task, it is very important to wash hands properly.

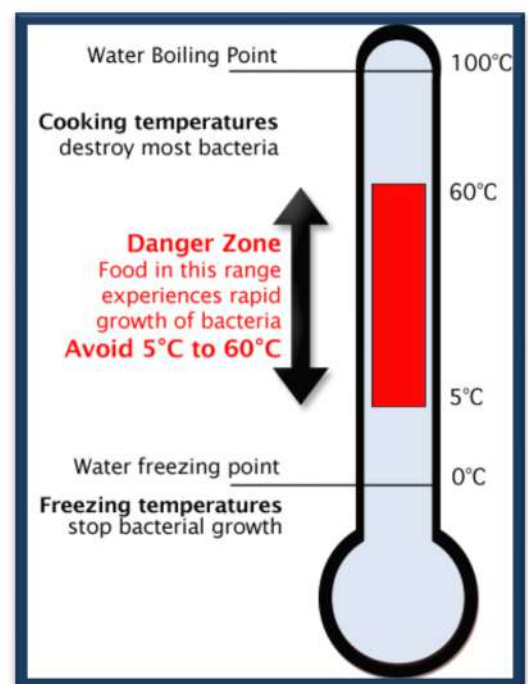
1. Wash hands with water including wrists.
2. Apply soap and rub well the palms, in between the fingers, back of the hand and wrists.
3. Wash with clean preferably warm water thoroughly to remove all soap.
4. Wipe dry with clean towels.

While in cold kitchen i.e. preparing salads, canapés etc, one should wear disposable gloves and should change them frequently.

Raw food handling:

- a) It is important to ensure that all raw dry store such as rice, flour, sugar, pulses be kept in air-tight containers, in a clean pest free environment. They should be used and replaced in the same containers.
- b) Raw vegetables, fruits and herbs must be washed in clean water, drained and stored in refrigerator at about 4°C. Use a clean chopping board and knife to peel and cut them.
- c) All meats and seafood must be thawed and cut. The chopping boards or knives should be clean and disinfected using chlorine solution / Electric UV sterilization cabinet. Raw meats and raw vegetables should be cut on separate tables on different cutting boards. This prevents 'Cross Contamination'. It occurs when juices from raw meats are transferred to ready to eat foods such as salads or others and cause contamination.
- d) All milk and milk products should be stored at 4°C and canned, bottled and tinned foods as per instructions on them.

Cooked food handling: The temperature range in which food-borne bacteria can grow is known as the Danger Zone. This is roughly 5°C to 60°C. To prevent food borne illnesses one must keep all food ingredients away from this danger zone. Hence, all cold foods such as sandwiches, salads, cold meat cuts, cheese should be kept below 5°C and all hot foods such as dals, vegetables, meats, fish etc must be kept above 60°C.



Summary

A chef's uniform comprises of Chef Coat, Chef Trouser, Neckerchief, Apron and Chef Cap. This is made up of cotton and acts as protective clothing keeping a chef safe from fire, heat and thermal variations. Personal hygiene is an important requirement of working in a kitchen and comprises of keeping oneself clean from head to toe. Apart from this keeping work area clean and hygienic food handling are must to prevent food borne illnesses.

-----Exercise-----

Q.1. Write short notes on:

- g) Personal Hygiene
- h) Danger Zone
- i) Cross contamination

Q.2.

- a) Discuss the importance of having Chef's uniform.
- b) Describe various parts of Chef's uniform.

Q.3. List the general safety rules to be followed while working in a kitchen.

Practical:

1. Make a chart illustrating step wise method of hand washing. Demonstrate in kitchen and discuss it's importance.
2. Prepare a check-list to keep your food production lab clean after work. Also write who is responsible for the tasks in your check-list.
3. Write some safety instructions / precautions to be taken while working in kitchen on sheets and paste at appropriate place in your kitchen.

UNIT 4: Kitchen Equipment

Objectives:

- To identify and classify kitchen equipment.
- To explain the use and care of kitchen equipment.
- To recognize various parts of a knife.
- To distinguish between various types of knives used in kitchen.
- To employ safety procedures in handling kitchen equipments.

The kitchen equipment

Equipment are essential to make a task easier and complete it in less time with more accuracy. There are a lot of equipment used in a commercial kitchen. They can be classified on various basis:

Classification of kitchen equipment

I. Classification of equipment based on size –

- a) Small size equipment: These include ladles, flat spoons, frying spoons, fish slicers, whisks, spatula, chopping board, rolling pin, potato mashers, egg slicers, egg beaters, knives, small pots and frying pans, small *kadah* etc



- b) Medium size equipment: These include mixers, grinders, juicers, mincing machine (keema machine), salamander, vacuum sealing machine etc



- c) Large size equipment: The



se equipment are fixed at the time of installation and are therefore difficult to move. These include walk-in coolers, four door refrigerators, potato peeling machine, deep fat fryer, bone sawmachine, ovens, work tables, gas ranges, grillers, brat pans, robot coupe, gravity slicers, dough maker, *masala grinders* etc



II. Classification of equipment based on source of energy:

- a) Manual equipment: The equipment that is operated manually is called manual equipment. E.g. whisk, egg slicer, knives etc
- b) Fuel operated equipment: The equipment that are operated by Liquefied Petroleum Gas, Coal / Wood or Diesel are termed as fuel operated equipment. Cooking ranges and ovens can be operated on LPG. *Tandoor* requires coal as a fuel. There are some pizza ovens that need wood as fuel. Diesel is a fuel for many large commercial ovens.
- c) Electrically operated equipment: Many equipment in a commercial kitchen are operated by electricity. This includes mixers, grinders, dough makers, refrigerators, potato peelers, deep fat fryers, ovens etc

There are many manufacturers of kitchen equipment. Before purchasing equipment it should be ensured that the material used in manufacturing of equipments should be non-toxic., non-flaking, corrosion-resistant, durable, resistant to heat and resistant to mild acids. Food contact surface should be easy to clean, smooth and continuous without breaks, cracks, open seams, chips or pitting. Equipments must be so designed and constructed and finished in such a way that it can be cleaned and disinfected easily, safely, thoroughly and rapidly.

Cooking equipments such as pots come in various sizes varying from small say 1 litre capacity to very large say 40 litres capacity. Similarly electrical equipments also come in varying capacities. The food service consultant must accurately estimate the capacity of each of the various types of kitchen equipment to be used. Too low capacity will result in delays and too high will result in expensive and inefficient equipment. Then an estimation of total number of portions must be made and portion sizes fixed. Once we arrive at the volume of food to be prepared, the method of preparation must be determined i.e. Items individually prepared to order, items prepared in small batches, items prepared in large batches and items that are partially batch prepared and finished when orders are received. At this stage the consultant is able to determine the **usable capacity** of

equipment to be purchased considering minor future variations. Apart from this following must also be considered:

- ✓ Price of equipment
- ✓ Ease of installation
- ✓ Ease of maintenance and operation
- ✓ Safety
- ✓ Ease of usage and cleaning
- ✓ Attractiveness
- ✓ Source of supply – after sale services

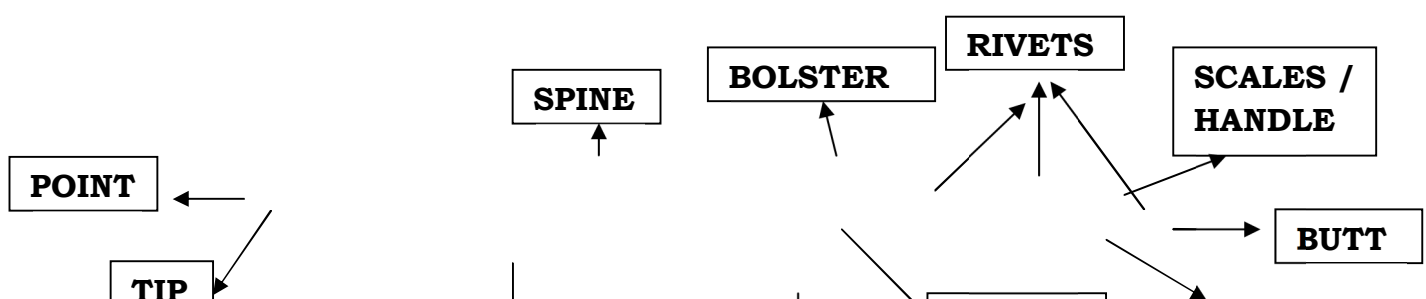
Care of equipment

Equipment is capital investment. Their purchase requires lots of money. It is necessary that once purchased, they should be used and cared for. An equipment should be used as per the usage manual. Some equipment need fixed water supply, electric connection and drainage (e.g. potato peelers, steam ovens etc). They should be installed in such a way that there are no loose connections, electric sparks or leakages. The usage of the equipment should be done as per their user manual. Routine cleaning and maintenance is necessary for every equipment. This is important for hygiene purposes also. All manual equipments can be cleaned with warm soap/detergent solution. Abrasions should be avoided. The body can also be wiped clean with a cleaning sponge if not washable because of wirings or being fixed equipment. Apart from that there must be a preventive maintenance schedule for all the equipments in which the engineering department checks wires, gas connections and other fittings for being in order.

Kitchen knives and their maintenance

Knife is the most important tool for a chef. Kitchen knives are made of a variety of material such as iron, varieties of steel, ceramic etc. Knife blade made up of iron is sharp but rust easily and is thus not hygienic. A blade made up of various types of stainless steel is more popular and hygienic. Stainless steel is safe to use, does not rust but is difficult to keep sharp for a long time. Carbon steel is a popular choice for rough use knives. Carbon steel tends to be much tougher and much more durable, and easier to sharpen than stainless steel. Ceramic knives are harder than metals but more brittle. Ceramic knives can be sharpened with silicon carbide or diamond sandpaper but chip when sharpened on a hard stone or hit a hard surface.

Parts of a knife:





The knife has two main parts – blade and a handle. The sharp end of the blade is called a point. This is used for may be removing eye from a tomato. Next to point on the sharp side of blade is the tip which is used for many purposes such as making incisions in onion, meat etc. The major part of the sharp side is the edge which is used for cutting and chopping. The end of the sharp side is heel. The blunt thicker side of the blade is called its spine. Thicker the spine, the blade will remain straight. Thinner the spine, the blade will have flexibility. The blade forms a thick end called bolster. A part of blade extends into the handle to keep it firmly attached to the handle. This is called tang. The tang is covered with scales to form handle and they are held together with rivets. The bolster is curved at the bottom and not sharp to protect first finger from abrasions while cutting. This is called finger guard. End of the handle forms a butt.

Maintenance of the knife:

A knife should be used, washed, disinfected and wiped dry with a clean cloth. This is then kept in a stand or in a case. One should ensure that knife is sharp at all times. Knife can be sharpened using carborundum stone, knife sharpening tools or sharpening steel. There are also professionals in markets who can sharpen the knife for you. It is important to have a sharp knife for even and effortless cutting. We execute more pressure to cut from a blunt knife. This may cause it to tilt a little and cut finger instead. Also, cutting with a blunt knife yields uneven vegetable cuts and tires our hands.



Types of knife:

There are many types of knife used in a kitchen. Some of them are:

- Chef knife – An all purpose knife for cutting and chopping. It is available in various sizes.
- Filleting knife – A knife with little flexible blade to remove flesh of fish from bones.
- Tomato knife – An upturned serrated blade for slicing tomatoes.

- Cleaver – A knife with broad blade used as an all purpose knife in Chinese cuisine. It is also used for cutting meats.
- Palette knife – A straight, rectangular, flexible, blunt blade as the knife is intended to spread icings on cake rather than cutting anything.
- Bread knife – A knife with serrated grooved flexible blade for cutting breads.

There are many more types of knives specially designed for various purposes. One should purchase wisely depending on the intended usage.

Discussion: It is important to employ some general safety procedures while handling equipments. Discuss and list what precautions you will take when working in kitchen with various equipments.

Safety procedures in handling equipments

- Never switch on / off electrical equipment with wet hands.
- If there is a smell of gas leakage, it is important to immediately switch off the main supply. Check the knobs and other equipments for leakage and mend it.
- Never use equipments with sharp blades without following necessary precautions as per its usage manual provided by the manufacturer. E.g. Always wear metal guard before operating bone saw machine. Never put hands inside the blenders, robot coupe or keema machine.
- Hot oils are dangerous. Never try to transport hot oil in kitchen eg. From a deep fat fryer. Let it cool and then strain or transport it. Cleaning of fryer is to be done after the oil cools and it is removed from the equipment.
- Take care while opening lids of steamers, pressure cookers, steam kettles or pots. If hot liquid is inside, it will release steam that can burn the hands or face.
- Do not use water to clean electrical equipments. Only mixer jars to be washed with warm soap water not the motor or base.
- Always follow standard operating procedure for operating a equipment.
- Always store knives carefully in a box or with a cover on sharp edge. Do not carry knives in pockets, tucked in aprons or in hands. Never leave dirty knife in the sink over which other pots and pans may be kept. Once the sink is full of water, the knife wouldn't be visible and someone may cut his hands. Do not keep knives on the edge of work tables. If they fall, do not attempt to catch. Step away.

Summary

Equipment are necessary to simplify and speed up work in a kitchen. Kitchen equipment can be classified based upon their size such as small, medium or large equipment or based upon the fuel they use to operate such as manual, LPG, Coal/Wood or electricity operated. It is important to take care of them as per their manual and follow routine cleaning and maintenance. Since purchasing equipments involves a high cost, usability of equipments must be considered before purchasing. Knives

-----Exercise-----

- Q.1. Classify kitchen equipment giving suitable examples.
- Q.2. Explain the parts of a knife with a neat diagram.
- Q.3. List the safety precautions to be followed while handling knives in kitchen.
- Q.4. What are the factors to be considered before purchasing an equipment?
- Q.5. Write a note on use, care and precautions for:
- a) The electrical equipment in a kitchen.
 - b) LPG operated equipment in a kitchen.
 - c) Manual equipment in a kitchen.

Practical:

1. Identify different types of knives and list their functions.
2. Draw/paste pictures and write names of about thirty different types of kitchen equipments and classify them.

UNIT 5:

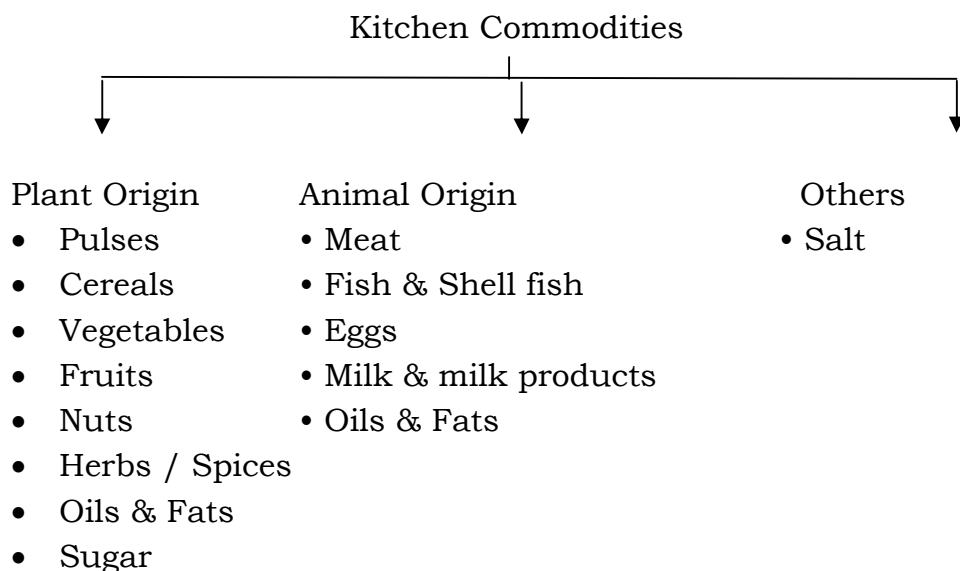
KITCHEN COMMODITIES

Objectives

- To classify kitchen commodities as per their origin.
- To identify and enlist various groups of commodities such as cereals, pulses, fruits, nuts, vegetables, spices, herbs, fats and oils, dairy products, eggs, meats and seafood and their role in food.
- To describe quality criteria for checking freshness of vegetables and fruits.
- To enumerate nutritional contribution of vegetables and fruits in diet.
- To explain the effect of heat on colour, texture and flavor of vegetables.
- To list ways to preserve nutrients while processing of kitchen commodities.

It is important for a chef to identify the variety of ingredients used in kitchen. It is also important to know and understand the variety of each of them, their taste, colour, texture, nutritional value and nature of product that results when cooked by different methods.

Kitchen commodities can be classified as per their origin – plant or animals.



PLANT ORIGIN

Pulses: A pulse is an annual leguminous crop which yields seeds within a pod. Pulses are an important source of proteins in diet. They contain about 20 – 25% protein

by weight. They contain no cholesterol and little fat or sodium. Pulses also provide iron, magnesium, phosphorus, zinc and other minerals, which play a variety of roles in maintaining good health.

The seeds are dried and milled to ultimately result in the product we get in market as 'Dal'. There are numerous varieties of pulses grown and eaten in the world. However, some common varieties of pulses eaten in India are:

a) Black gram (Urad dal) –

This dal is available in three forms in market:

- As whole black seed called Urad sabut or Mah ki dal which is used in dishes such as Dal Makhani.
- The split form is used in preparing khichdi or dals.
- The de-skinned form called urad dhuli is used in many south Indian preparations such as vada, dosa and idli. It is also cooked on its own as dal.



b) Green gram (Moong) –

This dal is also available in three forms in market:

- As whole green seed called Moong sabut dal which can be cooked on its own or sprouted to prepare salads.
- The split form is used to prepare khichdi or dal.
- The de-skinned form is considered to be easy to digest and light and usually takes on seasoning and spices well. It is used in khichdi, for pancakes (*chilla*) and in savouries.



c) Bengal gram (Chana dal) –

This is a versatile dried split yellow coloured lentil which when cooked gives a creamy texture, nutty flavour and is added to a lot of vegetable dishes as well.



d) Red kidney beans (Rajma) –

Red kidney beans are an integral part of meal in North India. They are cooked on their own with tempering and popularly eaten with rice.



e) Cowpea (Lobia) –

Similar to red kidney beans but little smaller and of cream colour with a big black eye, they are also boiled to prepare salads or eaten after tempering as dal along with meal.



f) Red gram (Masoor ki dal) –



This dal is available in two forms in market:

- Whole grey coloured disc shaped dal known as masoor sabut dal.
- Split red coloured dal known as masoor dhuli dal.

g) Chickpea (Safed Chole) – Popularly cooked in India as Pindi chole or the combination of Chana Bhatoor. They can also be boiled and mixed with other ingredients to form salad or sprouted.



h) Pigeon pea (Arhar / Tuvar): This dal is eaten all over India and cooked & tempered on its own or mixed with vegetables such as in Sambhar.



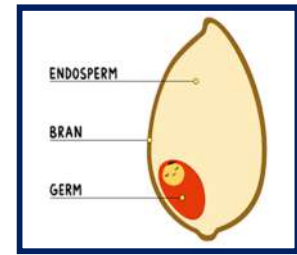
Use of pulses:

- Pulses are cooked on their own as part of Indian meal and eaten as dal / dhal. They are simply boiled with water, salt and spices and are often tempered.
- They are also baked / fried to make an ingredient in savouries (*namkeens*).
- Pulses can be sprouted and used as salads. They may also be just boiled and mixed with spices and other ingredients to yield a variety of salads.
- They are also soaked and grinded to prepare a wide variety of pancakes (dosa / Chilla), vadas, bhallas etc
- Pulses can also be soaked, made into a paste, spiced and made into dumplings called wadi or mangodi and also used to make papad / poppadums. These are sundried after preparation and can be cooked in a variety of ways later.
- Pulses can also be cooked to make desserts e.g. *pal payasam*, *moong dal halwa* etc

Cereals: A **cereal** is a **grass**, cultivated for the edible components of its **grain**. Cereal grains are grown in greater quantities and provide more food energy worldwide than any other type of crop - they are therefore **staple crops**. A **staple food**, is a **food** that is eaten routinely, and in such quantities that it constitutes a dominant portion of a standard diet in a given population, supplying a large fraction of the needs for energy-rich materials and generally a significant proportion of the intake of other nutrients as well. In their natural form (as in **whole grain**), cereals are a rich source of **vitamins**, **minerals**, **carbohydrates**, **fats**, oils, and



protein. When refined by the removal of the bran (outer skin mostly fibre) and germ (contains micronutrients), the remaining **endosperm** is mostly **carbohydrate**.



Most commonly grown and eaten cereals in India are wheat and rice. However other cereals include oats, corns, maize, ragi, jowar, bajra etc. They are a rich source of carbohydrates in diet.

- a) Wheat – It is a rich source of carbohydrates, proteins and dietary fibre. It contains a protein **gluten** which is essential for bread making. Wheat is milled to produce semolina (sooji/ rava), Whole wheat flour, Refined flour (Maida) and even Porridge (Dalia). It is used to make rotis, cakes, biscuits, bread, pasta, noodles, breakfast cereal, idlis, upma etc.



- b) Rice – Eaten on its own or made into a flour. There are hundreds of varieties of rice grown in the world. Each varies in grain size and starch content. Thus each variety is unique in final appearance after cooking, aroma, texture, taste and nutritional value. Rice itself is cooked to prepare a wide variety of pulao and biryani. Rice flour is used to make roti, idli, dosa and sweets such as modak or phirni.



- c) Maize – Maize and **cornmeal** (ground dried maize) constitute a **staple food** in many regions of the world. It is popularly eaten in tacos & tortillas in Mexico, as Polenta in



Italy and the flour is used to prepare Punjabi Makki di Roti. It is also popular as popcorn or boiled corn snack and as breakfast cereal cornflakes. The whole cob is char grilled to be eaten as *bhutta* / *challi* in many parts of India.



- d) Pearl Millet (Bajra) - It is majorly grown in Rajasthan and the flour is used to prepare bajre ki roti, bhakri and khakhra. It is also used as porridge and in khichdi.



- e) Barley - Even though wheat and barley look similar, there is difference between them - Wheat has a weaker taste whereas barley has a stronger taste. Barley has a higher fiber content than wheat and Barley can be cooked easily as rice although wheat has to be milled before cooking. Barley is thus mostly used to produce malt i.e. used in preparation of malted beverages and beer.



- f) Oat – Oats are most popular as porridge. However oat flour or oat meal is used in preparation of cookies, as breakfast cereal and to prepare oatmeal breads



- g) Finger Millet (Ragi) – A cereal majorly grown in Karnataka, it is commonly consumed in many states. Ragi flour is used to prepare dosas, bhakri or rotis. It is also used to make puttu. The grain may be malted and ground and then mixed with milk, boiled water or curd.



Vegetables

A **vegetable** is any part of a plant that is consumed by humans as food as part of a savoury course or meal.

The following classification is based on the part of plant being used as vegetable:

Type	Description	Common example	Quality criteria	Uses
Bulbs	They grow just below the surface of the ground and produce a fleshy, leafy shoot above the ground. Bulbs may contain layers or clustered segments.	Onion 	Firm, dry papery outer skin. No green shoots or soft spots.	Onion is the most used flavouring vegetable in the world. Onions can be eaten raw or cooked. They can be used in so many dishes : soups, vegetable and <i>dal</i> tempering, gravies, pizzas, pies, pasta, salads etc.
		Garlic	White, firm, dry skin. No green	Raw garlic gives a strong pungent

			shoots. Break cloves just before use as they tend to dry up once broken.	flavour while on cooking it gives a mellow flavour. Can be used in salads, soups, <i>dals</i> , vegetables, gravies, meats even in curd.
		Spring onions 	Bright unblemished hollow green ends and firm small bulb.	They are milder than onions, making them more suitable for eating raw in salads.
		Leeks 	Small or medium size bulbs as large ones are woody. Unblemished fresh greens.	Traditionally they are served with a white or cheese sauce. The white may be sliced and used in salads. Pairs well with ham or bacon and meats.
Roots	They grow below the ground as long or round shaped tap root and have green leafy shoots above the ground.	Carrot 	Firm, well formed and have a good orange red colour. Smaller carrots tend to be sweeter and more tender. Thick big ones tend to have a hard woody centre. Should be firm.	Can be eaten raw or cooked and are found in savoury as well as sweet dishes, such as carrot cake, carrot <i>halwa</i> . They are used in vegetable dishes, salads, sandwiches, meat roasts etc
		Radish 	Smooth and firm white colour. Should be crisp and not drying and turning easily when held.	Radishes are mostly eaten raw in salads and may also be used cooked in vegetables, stuffing for <i>paranthas</i> .
		Turnip	Choose small to	Turnips give a

			medium firm roots with smooth skins.	slightly peppery taste. It can be eaten raw as salad or cooked as a vegetable.
		Beet root 	Roots should be smooth with a firm skin and deep red colour. The leaves, if they're still attached, should be fresh and crisp.	The roots can be used raw, grated or finely sliced into a salad. The tender leaves can also be used as vegetable.
Tubers	Tubers are various types of modified plant structures that are enlarged to store nutrients . They can be root or stem.	Potato 	Pale yellow, dry skin, thin and smooth, firm no black eyes or shoots, no green surface.	Potatoes are cooked differently: Mealy or floury potatoes with high starch (suitable for mashing) and Waxy potatoes with low starch (suitable for salads, soups etc)
		Ginger 	Choose firm, shiny-skinned and smooth knobs. Don't buy roots with sprouts.	Used to flavour numerous dishes such as <i>dals</i> , vegetables, meats, salads, curd, rice etc
Flowers	These are edible flowers of certain plants.	Cauliflower 	The leaves at the base of the flower should be fresh and hard not falling off. Tight buds, white in colour, compact - not far apart from each other.	Used in preparing dry vegetable dishes, snacks (<i>pakodas</i>), filled in <i>paranthas</i> and can even be made into sweets.
		Broccoli	Compact bud clusters with no	Broccoli has many uses - cooked, raw

			yellowish or large open buds.	or lightly blanched - the serving possibilities are endless. From salads, pasta dishes, omelettes, quiches and soups and simple vegetable preparation.
		Globe Artichoke 	Should be with a tight, compact heavy head which yields slightly to pressure.	Serve artichokes as a hot or chilled vegetable either alone or with a sauce.
Fruits	Fleshy fruits of a plant eaten as vegetables.	Capsicum / Bell peppers 	Capsicums should be well shaped and have skins which are firm and shiny. There should not be soft spots or a shrivelled appearance	They can be used raw in a salad or cooked in casseroles, kebabs, noodles, pizza topping, with meats or used to prepare snacks.
		Cucumber 	The best cucumbers will have a firm skin, blemish free and an even dark green colour.	Usually eaten raw as salad but may also be used to prepare cold soups, sandwich filling or canapé topping.
		Brinjals 	Choose aubergines that feel heavy with smooth, taut, unblemished skin and no holes on surface.	They can be cooked as vegetable preparation, roasted and mashed to make a <i>bhartha</i> , snack (<i>pakoda</i>) or baby brinjals may

				be stuffed with spices to form stuffed vegetables. They also go well with lamb dishes.
		Chilli 	Chilli peppers should be well shaped and have skins which are firm and shiny. No shrivelled appearance.	Chilli peppers are the key flavouring ingredient in a lot of Mexican, Spanish, Indian and Asian, especially Thai, dishes. They are also stuffed and fried to form snacks or cooked as <i>Mirchi ka Salan</i> . It's often pickled.
		Pumpkin & Squash 	Choose firm pumpkins and squash that have undamaged skin and feel heavy for their size.	They are cooked to prepare vegetable dish, sweets, stuffed, added to pulses, made into soups etc.
		Tomato 	Choose smooth, firm and plump tomatoes with an even colour and no blemishes.	Tomatoes are very versatile and easily prepared. They can be eaten raw in salad, put in sandwich filling, canapé topping, pasta sauce, pizza topping, soup, vegetable dishes, tempering, gravies etc.
Leaf	Edible leaves of a plant	Cabbage	Firm heads that are heavy for their size with even colour and crisp outer leaves.	They are eaten raw in salads, stir fried for noodles, can be blanched and used as a wrapping for meat fillings. It is

				also pickled.
		Lettuce (<i>Salad patta</i>) 	No sign of wilting, crisp, smooth and blemish free leaves.	Tender crisp leaves are used as salad.
		Mustard leaves (<i>Sarson ka saag</i>) & Fenugreek leaves (<i>methi</i>) 	Crisp greens that are not wilted or blemished.	Mustard leaves are typically cooked in winters as <i>sarson ka saag</i> along with other greens such as spinach and fenugreek leaves. It may also be cooked with meat.
		Spinach (<i>Paalak</i>) 	Choose crisp green leaves with no signs of wilting or blemishes.	Young leaves are eaten raw as salad. The flavour of spinach is particularly good with eggs and is used in many soufflé, omelette or quiche dishes. Spinach is great in soups, paté and pasta sauces. It is also the base for green Indian gravy.
Pods (Legumes)	A legume that opens and contain seeds. These	French beans	Firm, even green, should break when bent at 90° angle	Used in vegetable dishes, noodles etc

	are the pods that are eaten while seeds are still tender and pods are green.			
		Peas 	Look for firm bright green pods which are not too full. Once picked the sugars naturally present in the peas are converted to starches, hence the fresher the pea the sweeter it will be.	Used as a vegetable, soup or added in snacks.
Stems	The edible stalks of plants when the stalk is the main part of the vegetable	Asparagus 	Firm i.e. if a stem is broken, it should "crack" easily, should be of good colour and closed tips.	White asparagus is used to make thick, creamy soup. Green asparagus is traditionally eaten as a side vegetable or as an ingredient with pasta.
		Celery 	Stems should be firm and crisp when snapped. Leaves should be fresh green and not wilted.	Celery is added to stocks, soups, salads, pies, roasts etc. Lightly stir fried celery with sesame oil is a vegetable dish in itself.
		Kohlrabi 	It should be about the size of a tennis ball or smaller. Should be thin, tender and have unblemished skin.	Kohlrabi is served mainly as a side vegetable, steamed, mashed or in a stir-fry. It may also be baked, stuffed, or added to casseroles and soups.
Fungi	All varieties of	Button	With all	They are frequently

	mushrooms fall into this category	mushrooms , Enoki, Shittake, Truffle, Oyster mushrooms 	mushrooms, the fresher the better. They should have good colour and avoid the ones with damaged or bruised skin or stem. Mushrooms continue to grow after harvesting and they respire or 'sweat' in plastic bags. They should be stored in paper bags.	served either on their own, although sometimes stuffed: and in stir-fry recipes too with soy sauce. Mushrooms are incredibly versatile and will add flavour to many dishes. They can be used with meat, in soups, sauces, on pizzas, in casseroles, in stir-fries, in omelettes, in pies and salads.
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Use of vegetables:

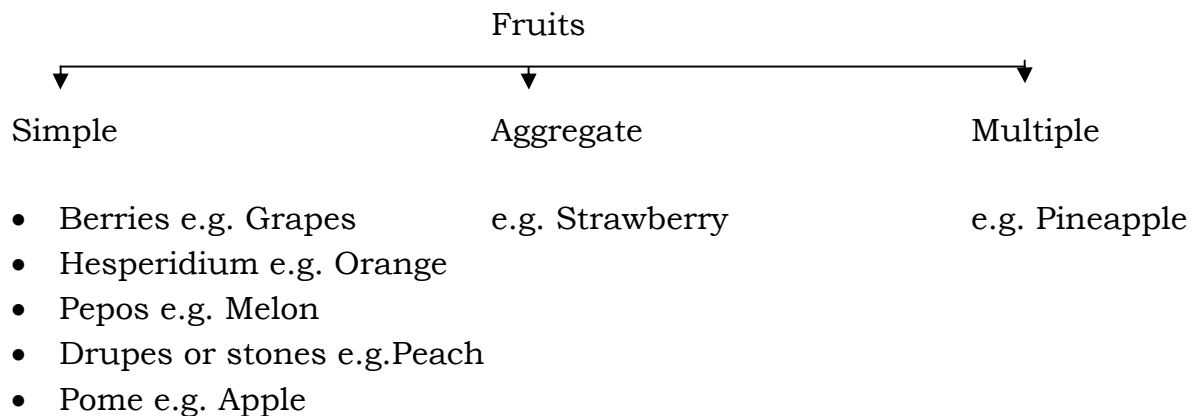
- Vegetables form an integral part of daily meal as it is a source of vitamins, minerals and fibre. They are cooked in various combinations either as a dry preparation or with some gravy.
- Vegetables are also used to prepare snacks.
- Some vegetables are even used to prepare sweets such as *ghiya ki lauz*, *carrot halwa*, *petha* etc.
- Cooked vegetables mixed with dressings and other ingredients form a nutritious salad. They are also added to curd to form *Raitas*.
- They are also used in stuffing the Breads or Pastries (e.g. quiche).
- Juices can also be extracted from vegetables and used on their own (Carrot / Beetroot/ Bottle gourd etc.) or may be in a cocktail (e.g. tomato juice in Bloody Mary)

Fruits

Fruits are a very good source of Vitamins and Minerals essential to our health. Fruit is the structure of plant that contains its seeds. Botanically many vegetables fall into the category of 'fruits' such as capsicum, tomato etc. However, as per culinary classification, we consider the final use of the ingredient. Hence, the fleshy fruits that have a slightly acidic or sweet taste that are not used as vegetables are culinary fruits.

A fruit botanically has following parts – The seeds inside, and layer surrounding it called Pericarp. Pericarp is further divided into endocarp

(inner layer), Mesocarp (middle layer) and Exocarp (outer layer). Depending on this structure, fruits can be classified as-



➤ Simple fruits – One fruit develops from one flower.



fruit, etc

- Berries – Mesocarp and endocarp form the pulp in which seeds are scattered. The soft epicarp forms the skin. E.g. Grapes, kiwi, passion

- Hesperidium – It is a fruit with tough aromatic exocarp. All fruits belonging to citrus family fall into this group. E.g. Orange, Lemon, Grapefruit etc



- Pepo – These are fruits where outer pericarp is stiffened. E.g. Melons

- Drupes – Thin epicarp, fleshy mesocarp and stone like hard endocarp. E.g. Cherry, Apricot, Plum and Peach



- Pome – A Pome is a fleshy fruit with thin skin, not formed from the ovary but from another part or parts of the flower. The seeds are contained in chamber in the center of fruit. E.g. apple

➤ Aggregate fruits – Many fruits develop from a single flower. E.g. Strawberry, Blackberry



➤ Multiple fruits – A single fruit is obtained by an aggregate of many flowers. E.g. pineapple, mulberry, fig

Some common fruits are described as under:

Name	Description
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Papaya (<i>Papeeta</i>)		Papaya has nutritional, digestive, and medicinal properties. Raw papaya contains enzyme 'papain' which is used as tenderizer for meats. Ripe papaya aids in digestion.
Banana (<i>Kela</i>)		This is most widely used fruit. Raw bananas are used as vegetable while ripe ones are used as fruits. Banana leaves are used to serve food on and flowers are used as vegetable.
Melon (<i>Tarbooz, kharbooza</i>)		There are many varieties such as Musk melon, Water melon, Cantaloupe and is a popular summer fruit.
Peach (<i>Aaaru</i>)		Peaches have a high acid content and tart flavor. Many a times they are canned in used in baked goods.
Mango (<i>Aam</i>)		India produces world famous Alphonso mango. It is very sweet with fibreless pulp and rich in Vitamin A and C. Apart from this there are many varieties grown all over the world.
Apple (<i>Seb</i>)		There are many varieties of apples grown in India. The skin of apple is rich in Vitamin A.
Pear (<i>Nashpati</i>)		Pears are consumed fresh, canned, as juice, and dried. This includes varieties such as <i>babbugosha</i> .

Oranges (<i>Santara</i>)		Nagpur is famous for oranges which are sweet and has a juicy pulp. The taste of other varieties of oranges varies from sour, sweet to slightly bitter.
Sweet lime (<i>Mausami</i>)		'Citrus fruits' i.e. oranges, lemons, limes and grapefruits are a rich source of Vitamin C which boosts our body immunity.
Pineapple (<i>Ananas</i>)		Pineapples can be consumed fresh, cooked, juiced, and preserved.
Pomegranate (<i>Anaar</i>)		The juice may be sweet and sour and is widely consumed. The fruit is used as garnish in many dishes.
Small fleshy fruits		These include Strawberry, Mulberry (<i>shehtoot</i>), Cherry, Blueberry, Grapes (<i>Angoor</i>), Raspberry (<i>Rasbhari</i>) etc

Uses:

- Fruits can be eaten on their own as a good source of nutrition.
- They can be made into fruit salads with varied dressings such as cream, honey, mayonnaise etc
- Some fruits can be used for pickling e.g. Raw mango
- Fruits are used to prepare jams, jellies, marmalade (the 'preserves') and chutneys.
- Fruits are blended with milk and other ingredients to make a vast variety of shakes, smoothies and chilled drinks.
- Fruits are widely used in flavouring and topping bakery products such as cakes, pastries, tarts etc
- Fruits are also pureed to prepare sauces called 'Coulis'.

Quality criteria for selection of fruits:

- The fruits skin should not have blemishes or soft brown spots.
- There should not be any small holes on any side of the surface.
- A shiny appearance and fresh aroma especially from citrus fruits.

- When pressed a little, they should be firm and must hold their shape.
- Check the stem of the fruit if there. A green stem with firm fruit is fresh in early stages of ripening. A brown and shriveled stem usually means the fruit has been picked from tree for a long time.
- The fruit should feel heavy for its size.
- For a ripe watermelon, tap the melon with your flat hand. If the sound is deep and thick it's probably a ripe and sweet fruit.

Nutritional contribution of fruits and vegetables in diet

- ❖ Vegetables and fruits, are low in calories and fats but contain good amounts of vitamins and minerals. All the Green-Yellow-Orange vegetables are rich sources of calcium, magnesium, potassium, iron, beta-carotene, vitamin B-complex, vitamin-C, vitamin-A, and vitamin K.
- ❖ Vegetables and fruits are a source of many antioxidants. These health benefitting 'phyto-chemical' compounds help protect the human body from stress, diseases, and cancers, and also help the body develop the capacity to fight against these by boosting immunity. They are classified as 'protective food group' in nutrition.
- ❖ Additionally, vegetables and fruits also have soluble and insoluble dietary fiber known as non-starch polysaccharides (NSP) such as cellulose, mucilage, hemi-cellulose, gums, pectin...etc. These substances help to maintain the digestive system of the body and offer protection from conditions like chronic constipation, hemorrhoids, colon cancer, irritable bowel syndrome, and rectal fissures.

Nuts

In culinary terms a nut is a fruit composed of an inedible hard shell enclosing an edible seed. Nuts are generally high in oil content and are a good source of energy. They also contain many essential minerals, vitamin E and vitamin B₂. Some common nuts are:

- Walnut (*Akhrot*)
- Almond (*Badam*)
- Cashewnut (*Kaaju*)
- Peanut (*Moongphali*)
- Pine nut (*Chilgoze*)
- Pistachio (*Pista*)
- Dried fig (*Anjeer*)
- Dried Date (*Chuhara*)
- Dried Apricot (*Khubani*)
- Fox nuts (*Phool makhana*)
- Raisin (*Kishmish*)

Nuts are used in preparation and garnishes of various sweets, bakery products, savouries etc. They can be roasted and salted and eaten on their own as a healthy snack.

Herbs

These are leaves of certain plants that usually grow in temperate climate. They are leaves of soft stemmed non –woody plants. Most of the herbs used in cooking possess some medicinal value. Apart from the nutritional value, they act as antioxidants, antiseptic, fight cough and cold, help in digestion, are anti-bacterial and support body's immune system to maintain health.

Some of the herbs are:

Name	Uses	
Coriander / Cilantro (<i>Dhaniya</i>)		This is the most commonly used herb used in Indian Cookery. It is chopped or used whole to garnish and add flavour & aroma to many North Indian gravies and vegetables. It is also used to flavour soups.
Mint (<i>Pudina</i>)		This herb is refreshingly cold and used in many dishes to add fresh aroma to dishes. It is also used to aid digestion.
Basil (<i>Tulsi</i>)		The holy basil has long been used in India for its medicinal values of curing cough and cold, as antibiotic etc. The sweet basil is popularly used in Italian cookery to flavour various dishes.
Bay leaf (<i>Tej Patta</i>)		This strongly aromatic herb is mostly used in dried form and stored in jars. It is used to flavour gravies, rice and in many European dishes.
Curry leaves (<i>Curry patta</i>)		Like holy basil, curry leaves are also grown in many kitchen gardens all across the country. It is used in tempering and chopped in many dishes such as sambhar, vada, curries etc.

Parsley		Mostly used in European and Mediterranean cuisines, this herb is chopped or used whole to flavour many vegetable and meat dishes.
Oregano		Used in Italian cooking to flavour many dishes such as pizzas, pastas and sauces.
Thyme		This herb is used in European cooking and is used to flavour lamb.
Fennel (<i>Saunf</i>)		A pleasant smelling herb used in European and Mediterranean cooking. It is usually used to flavour salads or chilled drinks.
Rosemary		An aromatic herb from mint family, it is used in European cuisine to flavour meats specially lamb.

Spices

These are the buds, fruits, flowers, bark, seeds and roots of plants and trees which are used in their natural / dried form to impart taste to food. Apart from this they also carry a wide range of medicinal properties, aroma and also may impart colour to the food. Some commonly used spices in Indian kitchen are:

Name		Description and Use
Cumin seed (<i>Jeera</i>)		It is used for tempering dishes. It may also be roasted and powdered and used in curd, rice etc. It may even be used to flavour cookies.

Coriander seed (<i>Dhania</i>)		It is used whole for tempering certain dishes, roasted and powdered and put in gravies.
Caraway (<i>Ajwain</i>)		It is used in tempering and also put in dough of Indian breads and stuffing for flavour. It is known to aid in digestion.
Turmeric (<i>Haldi</i>)		Most commonly used as powder than whole, it is added to many dishes to impart flavour, yellow colour and antiseptic properties.
Red chilli (<i>Laal Mirch</i>)		It is used whole or in powdered form to impart hot flavor to the food.
Cinnamon (<i>Dalchini</i>)		Cinnamon is a bark and is an ingredient of Garam Masala. It has a mild pleasant flavour used in sparing quantities in the food. It also has astringent and antifungal properties.
Clove (<i>Laung</i>)		Used in Garam masala, this possesses antibiotic and antiseptic properties. Clove oil is used in many oral care products.
Asafoetida (<i>Hing</i>)		This is added to many dals and vegetables and provides a typical aroma. Apart from this it is known to aid digestion and is an antibiotic.
Mustard seed(<i>Sarson</i>)		It is used to temper many dishes and provides a characteristic taste and aroma. It may also be made into a paste and

		used in fish curries or in salads.
Nigella (<i>Kalonji</i>)		More often used in pickles in combination with other spices.
Fennel seed(<i>Saunf</i>)		It is also used in pickles, for tempering and may even be powdered to flavour many dishes. It has a pleasant aroma.
Mace (<i>Javitri</i>)		This pink dried flower is an ingredient in Garam Masala and provides aroma. It encircles nutmeg and is part of the same plant.
Nutmeg (<i>Jaiphal</i>)		It should be used in sparing quantities mostly powdered and acts as stimulant and astringent. In excessive quantities it can have narcotic effect.
Fenugreek (<i>Methi</i>)		It is used in tempering and has a slightly bitter taste. It is known to help curing colic, dysentery and diarrhoea.
Sesame seeds (<i>Til</i>)		It is usually roasted and may be grinded to be used as stuffing, or in sweets. It is also used to produce sesame oil. Both black and white varieties are used in cooking.
Cardamom (<i>elaichi</i>)		Black cardamom is used in Garam Masala and spices up the dish. Green Cardamom is more often used to flavour sweets.

Uses:

- Spices are used mainly to enhance the flavour of a dish. Usually spices are used in combination of each other and that of main ingredient to result in a tasteful dish.
- All the spices carry some medicinal properties. If used wisely, they contribute to general total health.
- They may also be used impart colour to food.

Fats & Oils

Fats and oils both are made up of three elements: Carbon, Oxygen and Hydrogen. These elements combine together to form chains known as fatty acids. Three of these chains then join together to form a molecule known as a triglyceride. The triglyceride molecule is the basis of all oils and fats. However, oils containing a greater proportion of unsaturated fatty acids are liquid at room temperature i.e. Oils (sunflower oil, rice bran oil etc.) whereas those with higher amounts of saturated fatty acids will be solid i.e. Fats (Butter, Margarine, Desighee etc.)

Several edible vegetable and animal fats and oils are used for various purposes in cooking and food preparation. The production process of vegetable oil involves the removal of oil from plant components, typically seeds. This can be done via mechanical extraction termed "crushing" or "pressing." The processing of vegetable oil in commercial applications is commonly done by chemical extraction, using solvent extracts, which produces higher yields and is quicker and less expensive. The extracted oil is then purified, refined or chemically altered.

Some of the common oils extracted from plants and used in cooking are:

- a) Mustard oil – This oil has a distinctive pungent taste, characteristic of all plants in the mustard family. It is traditionally used in many parts of India for cooking. The oil makes up about 30% of the mustard seeds. It can be produced from black mustard, brown mustard and white mustard.



- b) Coconut oil – **Coconut oil** or **Copra oil** is an **edible oil** extracted from the kernel or meat of matured **coconuts** harvested from the coconut palm. It has various applications in food, medicine, and industry. Because of its high **saturated fat** content it is slow to oxidize and, thus, resistant to rancidity.

- c) Cottonseed oil - Cotton seed has a similar structure to other oilseeds such as sunflower seed, having an oil-bearing kernel surrounded by a hard outer hull; in processing, the oil is extracted from the kernel. Cottonseed oil is used for salad oil, mayonnaise, salad dressing, and similar products because of its flavour stability.
- d) Groundnut oil – It is often used in Chinese, South Asian and Southeast Asian cuisine. Groundnut oil has a high smoke point relative to many other cooking oils, so is commonly used for frying foods.
- e) Soybean oil – Soybean oil is mostly used for frying and baking. It is also used as a condiment for salads.
- f) Sunflower oil – It is the non-volatile oil compressed from sunflower seeds. Sunflower oil is commonly used in food as a frying oil, and in cosmetic formulations.
- g) Olive oil – Olive oil is a fat obtained from the olive a traditional tree crop of the Mediterranean region. The oil is produced by pressing whole olives and is commonly used in cooking, cosmetics, pharmaceuticals, and soaps, and as a fuel for traditional oil lamps.
- h) Rice bran oil - Rice bran oil is the oil extracted from the hard outer brown layer of rice after rice husk is removed. It is notable for its high smoke point of (232 °C) and its mild flavour, making it suitable for high-temperature cooking methods such as stir frying and deep frying. It is popular as a cooking oil in several Asian countries.



Uses:

- Both fats and oils are used as cooking medium – for tempering, frying, sautéing etc. While cooking they also impart flavour and aroma to the food.
- Oils are used in preparing dressings of the salads.
- Oils and Fats are also added to dough as shortenings. They coat the gluten proteins of flour and prevent toughness of product. The product is crumbly and soft. E.g. little oil added to *poori* dough to make it crumbly and soft. Similarly fats and oils are used in bakery products too.
- Some vegetable fats are used as spreads in sandwiches e.g. peanut butter

Sugar

Sugar is the generalized name for sweet, short-chain, soluble carbohydrates, many of which are used in food. Sugars are found in the tissues of most plants. There are various types of sugar derived from different sources. Most sugars are extracted from [sugarcane](#) and [sugar beet](#). The juice of sugarcane or beet is collected, heated, purified, filtered and crystallized. This is the most common form of sugar we see and use at home.

However, there are various forms of sugars used in cookery. Some of them are:

- **Granulated sugars** are used to prepare any sweet dishes. They are added to *kheer*, *rabri*, *custard* etc. Sugar in large quantities are also used as a preservative to prevent micro-organisms from growing and perishable food from spoiling as in jams, marmalades, and candied fruits. Sugar is also used in baking as a food for yeast to grow and ferment bread doughs. In addition it gives the crust brown colour in cakes and breads.



- Milled sugars (known as powdered sugar and confectioner's sugar) are ground to a fine powder. They are used as [icing sugar](#) in cakes, icings, or even for decoration on sweet products. They dissolve quickly in cake mixes and other products.

- [Brown sugars](#) are granulated sugars with the grains coated in molasses (remaining sugarcane syrup after production of sugar) to produce a light, dark, or demerara sugar. They are used in baked goods, confectionery, and toffees.



- **Sugar cubes** are white or brown granulated sugars lightly steamed and pressed together in block shape. They are used to sweeten drinks.

- **Caster sugar** is the fine granulated sugar. Because caster sugar crystals are so fine, they dissolve very quickly, so are useful in meringues, custards, and mousses, and for sweetening cold drinks or cocktails. Caster sugar is also used in baking.



- Liquid sugars are strong syrups consisting of 67% granulated sugar dissolved in water. They are used in the food processing of a wide range of products including beverages, ice cream, jams, and hard candy.
- A sugar substitute is a food additive that provides a sweettaste like that of sugar while containing significantly less food energy. Some sugar substitutes are natural and some are synthetic. Those that are not natural are, in general, called artificial sweeteners.



ANIMAL ORIGIN

Meat

Meat is a general term for various animal flesh eaten as food. It is mostly composed of proteins and fat. It is very important to maintain hygiene during rearing of the animal, while butchering and also while cooking the meat. Various state laws control the butchering and selling of animals.

Meat can be classified as:

- a) Game is meat which comes from wild animals and birds that are hunted for food or sport. Game is generally classified as either feathered or furred.
 - Furred game – This includes animals like Deer, Goat, Hare, Rabbit, Wild pig etc.
 - Feathered game – This includes feathered birds like Pigeon, Quail, Wild goose, Pheasant, Guinea fowl, Partridge etc.
- b) Poultry is a general name applied to a range of fowl domestically bred for human consumption. The poultry family generally includes chicken, turkey, duck and geese.
- c) Other animals such as lamb, mutton, sheep, camel, beef etc

Use of meat:

- Meats are cooked along with spices, herbs and vegetables to prepare a dish complete in nutrition.
- Meats are also preserved and eaten as ham, bacon, sausages etc.
- They have a wide usage where they can be used to make salads, main dish, snacks in every cuisine in the world.

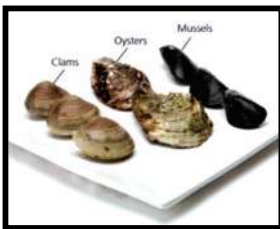
Seafood

This is the general term for all types of fish. There are three basic categories of seafood: fish, shellfish and invertebrates.

- a) Fish can be divided into various sub-categories according to habitat, shape and flesh-type. According to habitat fish is divided into two categories:



- Freshwater fish are those that spend some or all of their lives in **fresh water**, such as **rivers** and **lakes**, with a **salinity** of less than 0.05%. e.g. Trout, Carp, Cod, Eel etc.
 - Saltwater fish are those that spend their lives in saline sea water. E.g. Herring, Snapper, Mackerel etc.
- b) Shellfish: The main difference between fish and shellfish is their skeleton. Shellfish have an external skeleton or shell. There are two main categories of shellfish:
- Crustaceans – They have a segmented body, a chitinous exoskeleton and paired jointed limbs e.g. Crabs, Crayfish, Prawns, Scampi etc.



- Molluscs – They have a soft un-segmented body with a calcareous shell e.g. Clams, Oysters, Snails, Scallops, Mussels etc.

c) Invertebrates: Invertebrates are spineless marine animals with no outer shell. They include the squid and octopus family.

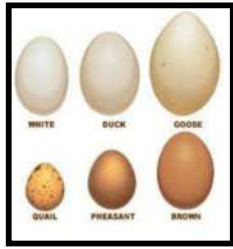
Use:

Fish is a very good source of proteins and is easy to digest. It also contains some amount of fat, minerals, vitamins and trace elements. This is the reason why fish is cooked in variety of ways such as frying, baking, grilling, poaching etc. to make numerous varieties of dishes and snacks. In coastal regions many curries are made with fish and coconut. River water fish are also popularly used in households in various curries or simply batter fried to prepare pakodas.

Egg

Bird eggs are a common **food** and one of the most versatile **ingredients** used in cooking. Eggs are a complete source of proteins specially essential amino acids. It also contains vitamins and minerals in significant quantities.





The most commonly used bird eggs are those from the **chicken**. Other varieties of eggs used in cooking are **duck,goose** or even quail eggs.

It is interesting to note that even fish eggs are used in both Indian and World cuisine. Fish lays thousands of tiny eggs in a jelly like form called Roe. Roe of Sturgeon fish is popularly eaten as ‘Caviar’ which is an expensive commodity. In India too fish eggs are used to prepare snacks and curries in coastal areas.



Uses:

- Eggs are cooked on their own in a variety of ways as breakfast – poached, fried, scrambled, omelettes, boiled etc.
- Eggs are a popular ingredient in baking in cakes, cookies and desserts such as crème caramel or mousse.
- Eggs are used to make sauces Mayonnaise and Hollandaise.
- Eggs are uses as binding agents in various mixtures.
- Eggs are also used to coat ingredients to give them a crispy texture.

Milk:

Milk is an **emulsion** of fat **globules** within a water-based fluid that contains dissolved carbohydrates and protein aggregates with minerals. It also contains sugar Lactose. Cow is reared specially in many countries on cattle farms to produce milk. Apart from this many other kind of livestock are reared to provide milk. This includes buffalo, **goat, sheep, camel, donkey, horse**, reindeer and yak.



Most of the milk we get packaged from market is either cow or buffalo milk. To increase shelf life of milk it is often pasteurized. **Pasteurization** is a process in which milk is heated to at least 63°C for 30 minutes OR 71.5°C for 15 seconds (HTST - High temperature Short Time) so that harmful microorganisms are killed. It is then refrigerated. Whether pasteurized or not, the dairies print expiry dates on each container or packet after which it should be discarded.

Milk may also be **homogenized**. This is a treatment that prevents a cream layer from separating out of the milk. The milk is pumped at high pressures through very narrow tubes, breaking up the fat globules through **turbulence**. A greater number of smaller particles possess more total **surface area** than a smaller number of larger ones, and the original fat globule

membranes cannot completely cover them. Homogenized milk tastes blander but feels creamier in the mouth than un-homogenized milk. It is whiter and more resistant to developing off flavours.

Varieties of Milk:

- **Full cream milk** – The milk which has minimum milk fat 6% and minimum milk solids (not fat) 9%
- **Toned milk** – The milk which has minimum milk fat 3 % and minimum milk solids (not fat) 8.5%
- **Double toned** – The milk which has minimum milk fat 1.5% and minimum milk solids (not fat) 9%
- **Skimmed milk** – The milk which has milk fat not more than .5% and minimum milk solids (not fat) 8.7%.
- Condensed milk – **Condensed milk** is **milk** from which **water** has been removed. It is most often found in the form of **sweetened condensed milk** (SCM), with **sugar** added. Sweetened condensed milk is a very thick, sweet product which is canned.
- Milk powder **Powdered milk** or **dried milk** is a manufactured **dairy product** made by evaporating **milk** to **dryness**. One purpose of drying milk is to preserve it; milk powder has a far longer **shelf life** than liquid milk and does not need to be **refrigerated**, due to its low moisture content.
- Fermented milk - **Fermented milk products**, also known as **cultured milk products**, are dairy foods that have been fermented with **lactic acid bacteria** such as **Lactobacillus**, **Lactococcus**, and **Leuconostoc**. The fermentation process increases the shelf-life of the product, while enhancing the taste and improving the digestibility of milk.

Milk products: Milk is used to make lot products:

- a) Cream is a **dairy product** composed of the higher-**butterfat** layer skimmed from the top of **milk** before **homogenization**. In un-homogenized milk, the fat, which is less dense, will eventually rise to the top. In the industrial production of cream, this process is accelerated by using **centrifuges** called "**separators**". It is of many types such as single cream, double cream, sour cream, clotted cream etc.
- b) Butter is a dairy product made by churning cream, to separate the butterfat from the **buttermilk**. It is generally used as a spread and a condiment, as well as in cooking, such as baking, sauce making, and pan frying.
- c) Curds are a dairy product obtained by introducing



bacteria which consumes natural milk sugars and excretes lactic acid. This causes the milk proteins to curdle and create a solid mass. Little curd from previous batch is added as a starter as it contains necessary live bacteria.

- d) Cheese is a food derived from milk that is produced in a wide range of flavors, textures, and forms by **coagulation** of the milk protein **casein**. During production, the milk is usually acidified, and adding the enzyme **rennet** causes coagulation. The solids are separated and pressed into final form.



e) Ghee is prepared by simmering butter, which is churned from cream, and removing the liquid residue. Spices can be added for flavor. The texture, color, and taste of ghee depend on the quality of the butter, source of the milk used in the process and the duration of the boiling.

f) Chhena: It is fresh cheese made from cow milk. A crumbly and moist form of farmers cheese or paneer, it is used to make desserts such as rasgulla.

- g) Khoya is a dairy product widely used in making sweets milk thickened by heating in an open iron pan.
- h) Paneer is a fresh cheese common in Indian cuisine. It is an unaged, acid-set, non-melting farmer cheese made by curdling heated milk with lemon juice, vinegar, or any other food acids.

Uses:

- Milk is a popular ingredient in daily diet in the form of milk itself or added to tea, coffee and cereals.
- It is used to prepare sweets such as kheer, rabri, rasmalai, custard, ice-cream etc.
- It is used to prepare numerous products used in cookery such as Butter, Ghee, Buttermilk, Curd, Cheese, Chenna etc
- It is often used in bakery for adding nutrients, moisture and fat to the product.
- It is used in preparing sauces such as Béchamel in European cookery.
- Milk is used to prepare chilled shakes and smoothies along with fruits and other ingredients.

Animal Fats

Many fats derived from animal tissues are used in cooking. E.g.

- Lard – Fat obtained from pig.
- Suet – Fat obtained from mutton or beef.
- Poultry fat

This is added in European cuisines to cook meats, in preparing sausages, added as a shortening to pastry to give it a crumbly texture etc.

In India animal fats are used in many minced meat preparations such as kebabs.

Salt

Salt does not contain any carbohydrates, proteins or vitamins but is essential in itself to life. Salt is the most common kitchen commodity. Technically table salt is a mineral primarily sodium chloride and is an essential ingredient of food. Salt can be obtained from:



- Rocks: Vast sedimentary deposits which have been laid down over the millennia from the evaporation of seas and lakes. These are either **mined** directly, producing rock salt, or are extracted in solution by pumping water into the deposit
- Brine (Salty water such as in Oceans): Produced by drying of seawater in shallow ponds.

Types of salt used in cooking: There is a huge variety of salts available in market. However, common ones are -



- **Table salt (*Namak*):** Salt is refined to purify it and improve its storage and handling characteristics. The natural salt is usually fortified. To prevent lump formation or caking of salt, chemical agents are added in small quantities to make it 'free flowing'. Iodine is usually added to prevent its deficiency causing Goitre or mental retardation. Salt may also be fortified with iron to prevent anaemia. In some salts, even fluoride is added which prevents dental caries.



- **Black salt (*Kala Namak*):** It is actually a pinkish-grey color. It has a strong sulphuric smell. Black salt is more hygroscopic than common salt and tends to absorb moisture pretty fast. Store it away from moisture and keeping the cap of the bottle or jar tightly closed. Black salt is used in preparing snacks, chaats, chutneys, raitas and is used as a flavouring for many fried snacks, by sprinkling it as a topping. It is sprinkled on fruits too.



- **Rock salt (*Sendha Namak*):** Rock salt is obtained from the rock, mountains and from the vast beds of dried up ancient lakes and seas. These beds may be hundreds of metres deep. Rock salt is normally colourless to yellow in colour but may also be in various hues of blue and pink, depending on the impurities in it. This salt is mostly used in preparing food during fasting.



Uses:

- Salt is required to give taste to a dish.
- It is added to breads in small quantities to control fermentation and helps in production of breads.
- Salt added to water makes the water boil at a higher temperature, thus reducing cooking time.
- Salt is also used as a preservative e.g. in pickles, hams etc
- It is also used as a cleaning agent because of its abrasive texture and ability to remove greasy or oily stuff from pans.
- Salt also has some medicinal qualities such as it helps in relieving tired feet or removing puffiness. Sodium is essential for nerve transmissions and pH balance.

Summary

The commodities used in kitchen can be classified according to their origin as the ones originating from plants (such as pulses, cereals, fruits, vegetables, spices, herbs and oils), animals (such as milk and milk products, meats, seafood, eggs, animal fats) and others (such as salt). There is a vast variety of these commodities that are used in the world in cooking. These ingredients combine together in various forms to make a wholesome meal. Each commodity is used in cooking in various ways. A chef must be able to identify the ingredient, know the varieties available and then suitably use them to prepare food.

-----Exercise-----

Q.1. Fill in the blanks:

- a) Granulated sugar coated with molasses is called.....
- b) Oils and Fats are also known as in kitchen as they make the product soft and crumbly.
- c) Salt added to water makes it boil at thus cooking time.
- d) Fish eggs are a delicate commodity and roe of sturgeon fish is called
- e) with higher amount of saturated fatty acids are solid at room temperature and with unsaturated fatty acids are liquid at room temperature.
- f) contains enzyme papain used as a meat tenderizer.
- g) Fruits are a group of fruits which are sour and have a high content of Vitamin C.
- h) Semolina (*sooji*) and Porridge (*Dalia*) are made from.....
- i) can be sprouted and used in salads.
- j) is a protein found in wheat essential for bread making.

Q.2. Answer in brief:

- a) List commodities obtained from Plants and Animals.
- b) What are the major nutrients obtained from various commodities obtained from plants.
- c) Classify Seafood and give examples of each category.
- d) What is pasteurization?
- e) What is homogenization?
- f) Differentiate between Herbs and Spices.
- g) List the uses of fruits in cookery.
- h) Pulses and Cereals form a major part of our diet. Explain their role in our food.
- i) What are different types of meats?

Discuss:

To understand the nature, taste and cooking of ingredient is important for a chef. Also, each ingredient comes in various varieties that differ from each other. Take examples of rice, mango or potato and explore the varieties available in India. Discuss how the usage differs with varieties.

Practical:

1. List commodities commonly available in your kitchen and classify them. Write their uses.
2. Collect different samples of various types of fruits and vegetables and differentiate between fresh and stale ones. Note the observations which help to identify the fresher ones.

UNIT 6: STORAGE OF COMMODITIES

Objectives:

- To appraise the importance of correct storage of commodities
- To discuss meaning of perishability of an ingredient
- To define shelf life of a commodity
- To enlist qualities of a good store
- To describe storage of various kitchen commodities such as dry ingredients, vegetables and fruits, milk, eggs, meats & seafood, frozen food, fats and oils, canned and bottled products.
- To express various Stock Levels in a store.
- To list the records maintained for storage and issues and explain their use,

A large number and variety of ingredients are used to prepare food. The kitchen commodities vary from dry ingredients like sugar, flour, rice etc. to fresh vegetables and fruits. They also include canned or bottled products, meats, seafood, milk and milk products etc. All these food ingredients should be of required quality to get healthy, safe and tasty meal.



Importance of correct storage-

- Each ingredient is bought for a price. In hotel business, a large amount of money is involved in purchasing kitchen commodities. It is important that this money is used wisely and not wasted. The cost of all the ingredients used in preparing a dish is called its Food Cost. In case of wastages, spoilages or pilferages, the ingredient lost is money lost.
- All kitchen commodities are Perishable i.e. they are spoiled or get unfit for human consumption after some period of time. The time during which the ingredient can be stored and used safely is called Shelf Life of a product.
- Quality of ingredients is an important criteria to determine quality of the dish prepared using these ingredients.

All the ingredients cannot be procured from market immediately as and when they are required by chef. Therefore some quantity of ingredients is always bought in advance and stored in kitchen or general store. Thus it becomes important for a chef to correctly understand the storage requirements of various commodities.

Perishability of a product- Food stuffs that are subject to decay or spoilage are called perishable products. Hence, with time and storage conditions, quality of all the food ingredients deteriorate. If such ingredients are used in cooking, they may cause diseases and may not taste well.

Shelf life of an ingredient is the length of time for which a commodity may be stored in required conditions (temperature, humidity etc.) without becoming unfit for use, consumption or sale.

Techniques of storage:

There is no exact method to determine how long a food will maintain quality and be safe to eat, because many conditions affect quality. The storage life of foods is affected by the:

1. Freshness of the food when it reached the hotel from the supplier.
2. Length of time and the temperature at which it was held before purchase.
3. Temperature of food storage areas.
4. Humidity level in food storage areas.
5. Type of storage container or packaging the food is stored in.
6. Characteristics of the food item.

Qualities of a good store

- A store should be at a location easily accessible from receiving area as well as by kitchen department.
- Good ventilation, air circulation and sufficient lighting. It is important to have a suitable humidity control system in place as dry store such as cereals, pulses, flours etc need dry conditions for storage.
- Hygienic and free of pests such as flies, rats, cockroaches etc.
- Safe and with sufficient racks / containers to store ingredients. Leaving sacks or packages on floor makes them more vulnerable to infestation by pests and makes the store untidy.
- Provision of deep freezers and refrigerators to suitably store kitchen commodities.
- An effective store keeping system to ensure FIFO system (First in First out). This system ensures that the material received first is issued first and thus used first.
- Clear labelling of 'best before' or 'expiry' dates. These should be strictly followed and ingredients must be disposed of after 'best before' dates.
- Regular cleaning schedule is followed.

Storage of kitchen commodities

Foods can be classified into various groups for the purpose of storage –

- a) Dry ingredients like cereals, pulses, sugar, flours, dry fruits, salt, spices and condiments – These should be stored in a food grade air-tight container or if pre-packed then sealed properly. They should be stored in dry (low humidity) area at room temperature. Many products may be in vacuum sealed packing, hence should be kept safe. However, prolonged storage makes them prone to infestation, loss of flavor and aroma in case of dry herbs and spices etc.



- b) Eggs, Milk and milk products – Dairy products are those commodities, which are derived from or based upon milk, and include creams, yoghurts, butter, cheese and ice cream. Eggs, milk and milk products should be stored in the refrigerator at a temperature between 3°C to 4°C. Cream, yoghurts, butter, cheese and eggs should also be stored at between 3 to 4°C. The shelf life of these products will vary depending on their method of manufacturing, and chef should check individual 'use by' dates on the packaging. All dairy products need to be kept well sealed when in storage and away from strong smelling ingredients otherwise they will absorb flavor and aroma from strong smelling foods around them.



- c) Vegetables, Fresh herbs & Fruits – Many vegetables need not be refrigerated and are good in dry room temperature conditions for a reasonable length of time. Depending on type of vegetable, they are stored as follows:

- Cool and dry: **Onion**, Potatoes, Garlic, Bananas, Pineapples etc. They should be stored at about 18°C with good air circulation around them.
- Cool and moist: Most vegetables and fruits as well as fresh herbs are stored in refrigerators. They are stored at about 5°C.
- Warm and dry: **Pumpkin**, **sweet potatoes**, dried **hot peppers**.



- d) Meats – Fresh meat and poultry should be stored between 1°C and 3°C. All meat and poultry should be stored on clean trays and covered with

plastic wrap. Raw and cooked food should never be stored on the same tray. Meats are also cut, vacuum sealed and labelled in butchery and stored frozen at about -18°C in deep freezers.

- e) Seafood has a very short shelf life and must be stored with extra care. It should be stored at 1°C . Seafood should be wrapped in plastic film and stored in the coldest part of the cool room on a bed of crushed ice. It may also be vacuum sealed, labeled and stored frozen at -18°C in deep freezers.



- f) Frozen products such as ice-creams – Ice-creams should be stored at about -18°C in deep freezers away from strong smelling ingredients. Similarly frozen vegetables or ready to eat items should also be kept in deep freezers.

- g) Canned or Bottled products – Many ingredients purchased are packed in cans or bottles such as tomato ketchup, tomato puree, pickles, pineapple tins, sauces etc. These products are labeled as per storage requirements. They should be stored as per manufacturer's instructions – may be in a cool dry room, away from sunlight etc. Any leaky or puffed cans or ones with some mould growth should be immediately discarded.



- h) Fats and Oils – All oils should be sealed in airtight containers to prevent oxidation. They should be stored in a cool, dark place and not exposed to heat and sunlight. Most fats such as lard, butter, margarine should be refrigerated.

Thus proper food storage helps maintain food quality by retaining flavour, colour, texture and nutrients, while reducing the chance of contracting a food-borne illness.

Economic Order Quantity:

In a commercial hotel, there is usually a separate purchasing and stores department which is responsible for all purchasing procedure and maintenance of stores. How much of a commodity is to be stored is a difficult question to answer. It is important to have some stock of almost all the commodities. During operations, if a guest orders a dish from the menu, it must be served. Saying that the dish is 'Not available' carries a negative impression. At the same time we cannot store huge quantities of commodities. Most kitchen commodities have a small shelf life. Their quality

deteriorates with time. Therefore, one must balance the quantity of material one stores.

There are two types of cost associated with storing:

a) Ordering Cost- The cost of acquisition and inbound logistics form part of the ordering cost of procuring inventory. These include:

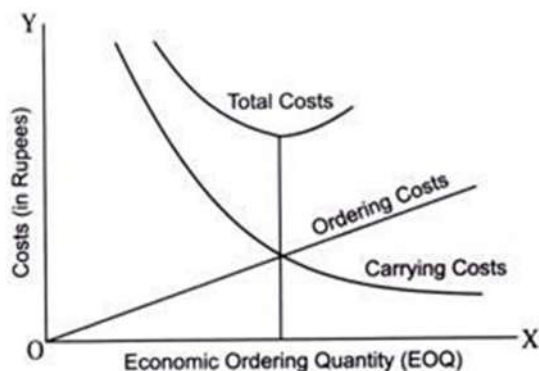
- Time spent finding suppliers and expediting orders
- Clerical costs of preparing purchase orders
- Transportation costs
- Receipt of inwards goods, unloading, inspection and transfer.

Many people are responsible for sourcing products, processing orders, paying accounts, delivery, receipt of goods and movement of stock through the store. Each step is a cost to the company. It is thus clear that bigger the quantity purchased in one order, lesser is this cost per unit.

b) Carrying Cost / Holding cost- This includes warehousing costs such as rent, salaries, inventory costs related to shelf life of commodities etc. Holding cost also includes holding some money in store idle where it could be used for generating more money. Thus carrying cost increases if more quantity of commodity is purchased and stored.

As a storekeeper one is required to arrive at an ordering quantity which minimises these costs.

This can be graphically represented as:



Stock Levels: In order to guard against under-stocking and over-stocking, most of the large companies adopt a scientific approach of fixing stock levels. By adhering to these levels, each item of material will automatically be held within appropriate limits of control. These levels are not permanent and must be changed to suit changing circumstances. Some of the factors which influence the stock levels are:

- Shelf life of the product
- Anticipated rate of consumption

- Amount of capital available
- Availability of storage space
- Cost of storing
- Procurement costs
- Reliability of suppliers
- Minimum order quantities imposed by suppliers.
- Risk of loss due to Obsolescence, deterioration, evaporation or fall in market price, etc.
- Lead time – Time gap between ordering a product and actual receiving of product in the hotel.

It is important to note that highly perishable ingredients like milk, cream, vegetables, fruits and herbs are ordered and received on daily basis depending on the indent received from various kitchens in the store department. There is typically a local supplier and lead time is usually few hours. Depending on the requisition, the sub sections of kitchen take the ordered quantity directly to respective kitchens from receiving area. For these supplies, ordering quantity may vary on daily basis.

The products which have a greater shelf life, following levels are maintained in stores:

a) Reorder Level / Reorder Point

Re-order level= Maximum consumption x Maximum re-order period.

This is that level of material at which purchase requisition is initiated for fresh supplies. This level is fixed somewhere between minimum level and maximum level. This is fixed in such a way that by re-ordering when material falls to this level, then in the normal course of events, new supplies will be received just before the minimum level is reached. The problem of how much to order is solved by determining the economic order quantity.

b) Minimum level=Re-order level-(Normal consumption x normal reorder period).

It is the level below which stock should not normally be allowed to fall. This is essentially a safety stock and is not normally touched. If the stock falls below this level, there is a risk of stoppage in production.

c) Maximum level= Reorder level+ Reorder quantity-(Minimum consumption x Minimum re-order period).

This is the level above which stock should not normally be allowed to rise. The maximum level may, however be exceeded in certain cases, e.g. when unusually favourable purchasing condition arise or even when you wish to import supplies from a far off country where transportation time is uncertain.

d) Danger level=normal consumption x maximum re-order period under emergency conditions.

This is a level at which normal issues are stopped and materials are issued for important jobs only. This level is generally fixed somewhat below the minimum level. When stock reaches this level, urgent action is needed for the replenishment of stock so that stoppage in production can be avoided.

Example

Two materials A and B are used as follows:

Minimum usage- 50 units per week each

Maximum usage- 150 units per week each

Normal usage- 100 units per week each

Re-order quantity (EOQ): A-600 units; B-1000 units.

Delivery period: A- 4 to 6 weeks; B- 2 to 4 weeks.

Calculate various stock levels

Re-order level= Maximum consumption x Maximum re-order period

For A: $150 \times 6 = 900$ Units

B : $150 \times 4 = 600$ Units

Minimum level= Re-order level-(Normal consumption x normal re-order period)

For A: $900 - (100 \times 5) = 400$ Units

B: $600 - (100 \times 3) = 300$ Units

Average delivery period has been taken as normal re-order period.

Maximum level= Reorder level+ Reorder quantity-(Minimum consumption x Minimum re-order period)

For A: $900 + 600 - (50 \times 4) = 1300$ Units

B: $600 + 1000 - (50 \times 2) = 1500$ units

Average stock level= $\frac{1}{2}$ (minimum level + maximum level)

For A= $\frac{1}{2} (400 + 1300) = 850$ units

B= $\frac{1}{2} (300 + 1500) = 900$ units

Maintaining record of storage and issues:

A store has to maintain records of materials which they receive and once they issue. There are many records that are maintained for checking quality, quantity, costing and also to maintain stock levels. Some of the important records maintained in a store are:

1. Goods received book – This book is meant to record all the goods that are received in store. This becomes a permanent record of all the goods that are received. This is then transferred to stores ledger, bin cards and other records for costing purposes. In large hotels there is a separate receiving clerk who receives the goods, enters them in a detailed analytical goods received book and may have detailed columns such as meat, chicken, vegetables, frozen food, milk, grocery etc. The format may differ from hotel to hotel. This book gives information at a glance that how much quantity under various heads is received on a particular day.
2. Stores Ledger - A stores ledger is a record of materials showings receipts, issues, and balances of materials in quantities and value. It is a ready perpetual inventory and also shows the current value of material in store. A sample format is given below:

Hotel XYZ											
<u>Stores Ledger</u>											
Material Code:											
Material Description:								Maximum Quantity:			
Bin No.:								Minimum Quantity:			
Location:								Re-order Quantity:			
Date	Receipts				Issues				Balance		
	G R. N o.	Quan tity	Ra te	Amo unt	Inde nt No.	Quan tity	Ra te	Amo unt	Quan tity	Ra te	Amo unt

3. Bin Card / Cardex - A bin card is a quantitative record of receipts, issues, and balances of material in stores. The bin card is attached to the bin or rack in which materials are stored. It enables to know the quantity of materials in hand at a glance. Bin card maintained by the store-keeper. This card is used not only for recording receipts issues of stores but also assists the store-keeper to control the stock. A bin card the store-keeper to prepare purchase requisition to replenish the exhausted material. It also helps in locating the discrepancy when physical stock verification; undertaken and the balance compared with bin card.

Hotel ABC <u>BIN CARD</u>					
Bin No.:			Package Size:		
Commodity:			Maximum Level:		
Reorder Period:			Minimum Level		
Store Ledger Folio:			Danger Level:		
Date	Received	Issued	Balance	Checked By	Remarks

4. Meat Tag – Tags are put on meats as soon as they are received and inspected against specifications. The tags are pre-numbered and rest of the details are filled. The tag is then separated along the perforation with the control office copies of the invoice or delivery note and the kitchen copy is attached to the food item. When the item is issued, at a later date, to the kitchen for use, the tag attached to the item is removed and send to control with the date of issue filled in. The control office then reconciles these tags for costing purposes.

<u>MEAT TAG</u>	NO.22928
Item	Chicken
Cut	Leg
Total cut	
Total value	
Cost/Kg	
Supplier	XYZ Meat Co.
Date Recd.	
Date issued	
1. FOOD CONTROL COPY	
<u>MEAT TAG</u>	NO.22928
Item	Chicken
Cut	Leg
Total cut	
Total value	
Cost/Kg	
Supplier	XYZ Meat Co.
Date Recd.	
Date issued	
2. STORE COPY	
Send to food control on day of issue to kitchen	

5. **Material Requisition Slip / Indents:** These are approved requisitions prepared by chef or other departments and sent to store for issuing material. They have the name of the department requesting material, name of the commodity, quantity required and also the date on which the material is required by the department. Against these slips, material is handed over from stores to the departments.
6. **Damage / Shortage report:** A report prepared by the receiving section of store for any material that is damaged or is in lesser quantity as compared to purchase order.

Thus, proper storage of commodities is important in keeping the ingredients safe and of good quality. It is equally important to ensure that the store is neither over nor under stocked at any given point of time.

Summary

All the commodities used in kitchen are procured from market by paying a price which is an investment from business point of view. At the same time, they all become unfit for consumption after some time i.e. they are perishable. Hence they should be stored correctly to keep them in usable condition for a maximum period of time. Some commodities like dry ration – pulses, cereals and flours require dry and room temperature conditions while some others like milk, butter, curd, cheese etc and many vegetables and fruits require cooler temperatures. Meats, ice-creams etc need to be kept frozen. Correct storage is important to maintain the quality of ingredient from purchase to actual use. It is equally important to minimise the ordering and carrying costs of commodities. The stock levels are maintained at optimum quantities for all the commodities to prevent over or under stocking. Various records are maintained to ensure proper costing and usage of commodities.

	Commodity	Storage
A	Banana	
B	Margarine	
C	Whole black gram	
D	Turmeric powder	
E	Milk	
F	Fish	
G	Tomato	
H	Ice-cream	

I	Sugar	
j	Curd	
K	Tinned tomato puree	

Q.2. Answer in brief:

- What are the salient features of a good store?
- What do you understand by 'Perishability' of a product?
- What is food cost?
- What are the factors that determine storage life of a product?
- Draw a neat format of a Bin Card? How is it useful?
- What is EOQ? Explain.

Discussion:

Discuss the importance of correct storage of various commodities. Also, take any packaged commodity and discuss relevance of 'best before' or 'use by' dates.

Practical:

Take different types of commodities such as any pulse, potato, butter, tomato, green coriander, milk, salt and sugar. Store them as discussed above in the chapter and leave some quantity at room temperature. Compare the condition of ingredient after few hours / days. Does proper storage keep them edible and fresh for a longer time? Which ingredient is most perishable and which one can be kept usable for the longest duration?

How can we store them to keep away from common pests such as flies, mosquitoes, cockroaches, rats, ants etc.

UNIT 7:Techniques for Pre-preparation

Objectives:

- To explain the importance of pre-preparation.
- To define various pre-preparation techniques employed in food production.
- To demonstrate correct way of holding and using a knife for cutting.
- To list various cuts of vegetables and fruits used in cooking.
- To cut vegetables and fruits in uniform shapes.

Pre-preparation of food:

Mise-en-place is a French word commonly used in hotel industry to refer to pre-preparation / setting up of work. We must organise our ingredients and cooking vessels before actually beginning to cook. The food ingredients need some processing before actually going in to cooking pans. One should also develop a habit of cleaning the work table frequently to avoid chaos and spillages all around. Depending on the recipe, one or more of the following techniques are to be employed for food preparation.

Techniques of pre-preparation:

- **Washing:** Washing is the first step before processing fruits, vegetables, meats etc as it is helpful in removing superficial dirt & chemical remains of pesticides leaving them clean.
- **Peeling:** This is done with the help of a peeler / knife removing the peel of any vegetable or fruit. E.g. Potato, Carrot
- **Cutting:** A chef knife is used to cut vegetables, fruits and meats in smaller pieces. The cuts need to be uniform for a good presentation. Depending on the requirements, there are specific cuts illustrated in next section.
- **Paring:** This means removing a layer from the surface in circular motion by a knife edge all round the object. E.g. Sweet limes, Apples
- **Grating:** Using a grater which provides the surface with grooves, the ingredient is rubbed against the blades and gratings (small / large) are obtained.
- **Grinding:** One or more ingredients are mixed and reduced to small particles by a mixer grinder or on manual equipments like grinding stone (*sil batta*).
- **Pureeing:** Grinding to a smooth / lump free paste.
- **Pounding:** This is done to coarsely crush ingredients. E.g. Using Mortar pestle to pound spices.
- **Mincing:** To prepare a mince / *keema* using mincing machine or even a knife. This means cutting into very fine pieces.

- **Kneading:** This usually refers to mixing water in flour and manipulating it to make dough like for *chapattis* and breads.
- **Whisking / whipping:** This is done to mix two liquids together and incorporating air to make them fluffy. E.g. Whipping egg white and yolk to make an omelette.
- **Dredging:** This is a technique to coat a dry ingredient over a wet or moist food evenly before cooking. E.g. applying refined flour over a piece of chicken before cooking.
- **Creaming:** Softening of fat /butter by rubbing.
- **Skimming:** This is done by passing a ladle or similar equipment under a floating layer to remove it. E.g. skimming cream (*malai*) from a pot of milk.
- **Sieving:** A strainer is a form of sieve used to separate solids from liquid. This means separating two articles by passing through a wire mesh. e.g. Passing the boiled soup through a strainer to separate solids and liquids.
- **Sifting:**The word "sift" derives from "sieve". In cooking, a sifter is used to separate and break up lumps in dry ingredients such as flour, as well as to aerate and combine it with salt or baking powder for bread making.
- **Mashing:** Breaking up of soft food items by applying pressure. E.g. mashing boiled potatoes using a masher or a fork for filling in *paranths*.
- **Coring:** The process of removing the seeds or pit from a fruit or vegetable. E.g. coring an apple
- **Dressing:** To trim or clean an animal for cooking.
- **Greasing:** To rub the surface of a pan with grease or shortening. E.g. grease an *idli* pan before pouring the batter.
- **Marinating:** To soak food in an acid-oil seasoned liquid mixture to imbibe flavours, aroma and also soften them. Foods should be covered and refrigerated while marinating.
- **Folding:** To combine two mixtures by gently cutting down through the mixture using a palette knife, across the bottom, and bringing the knife back up to the surface along with some of the mixture from the bottom (i.e. down-across-up-and-over motion). The utensil should not be lifted out of the mixture until the ingredients are well blended. E.g. preparing cake mixtures.

Using Knives



A chef must practice cutting evenly with knives. In due course with practice, both speed and accuracy improve. It is important to have a sharp and clean knife. Hold the knife in right hand gripping the handle firmly. The knife must not slip away. Some chefs keep the thumb and forefinger on the blade of the knife for a better grip. It is your personal choice

for convenience. However, the grip of the knife should be firm.

The left hand becomes the guiding hand. It should hold the vegetable to be cut like a claw with nails turned inside away from the blade and knuckles becoming the guide for moving the knife.

Begin with a peeled potato, carrot or onion. Cut away a small piece from base of the vegetable so that it sits firmly on chopping board without rolling away. Move knife like a saw – top to bottom and front to back in a single movement to cut away a slice. Move the knuckle further away and repeat. The side of the blade of knife must touch and be guided by knuckles. Remember to hold like claw with nails on the inner side of the knuckles; else you might cut your finger. The knife should not be lifted too high, move alongside the knuckles only. Practice for mastering the skill.



Cuts of vegetables & fruits

There are a variety of ways in which fruits and vegetables can be cut. Cuts vary as per the final use of the ingredient. They are important as unless and until they are put in a blender and minced or strained and removed, the cuts are visible to the eyes of diner. Hence, it is important that cutting be uniform and enhances the eye appeal of the dish prepared. Some of the cuts are:

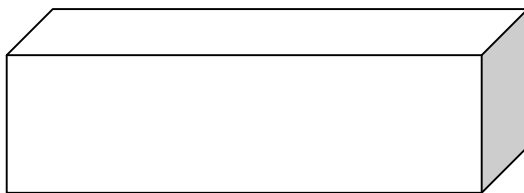
S.No.	Name	Description	Picture
1	Slice	Cutting across a vegetable.	
2	Wedge	A round vegetable is peeled and cut lengthwise in equal size pieces.	
3	Slit	Vegetable is slit and may be kept intact on one side to insert filling. Eg. Stuffed bittergourd, brinjals, ladyfinger etc	
4	Chunks	Whole vegetables are peeled and left in chunks of similar size for preparing vegetable dishes.	

5	Chop	Cutting the vegetable in small even size pieces.	
6	Baton / Jardinière	Vegetables cut in batons $\frac{1}{2}$ " x $\frac{1}{2}$ " x 2 $\frac{1}{2}$ " to 3"	
7	Dices	Vegetables are cut in dices of various sizes. This method leaves side edges of the vegetables unused. These should be used elsewhere such as in making soups or stocks. <i>Brunoise</i> – 1/8" dice <i>Macédoine</i> – 1/4" dice <i>Parmentier</i> – 1/2" dice <i>Carré</i> - 3/4" dice	
8	Julienne	Thin strips of vegetables often used with noodles. 1/8" x 1/8" x 2"	
9	Scoop	The vegetables or fruits can be scooped in roundels using an equipment called <i>Parisienne</i> scoop.	
10	Turned vegetables	The vegetables are made into barrell shape using a curved edge knife. These vegetables are called turned vegetables	
11	Chiffonade	A preparation of finely sliced or shredded leafy vegetables or herbs.	
12	Fancy shapes / <i>Paysanne</i>	The vegetables and fruits are cut into fancy even shapes such as circles, triangles, squares or flowers using a	

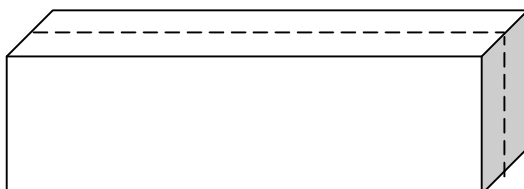
		knife or even a shape cutter to enhance eye appeal of a dish.	
13	Batons (Potato cuts for fries)	<i>Allumette</i> (Matchstick potatoes) $1/8'' \times 1/8'' \times 2\frac{1}{2}''$ <i>Batonnet</i> $1/4'' \times 1/4'' \times 2\frac{1}{2}''$ <i>Frite</i> $1/2'' \times 1/2'' \times 2\frac{1}{2}'' - 3''$ <i>Pont Neuf</i> $3/4'' \times 3/4'' \times 3''$ <i>Mignonette</i> $3/8'' \times 3/8'' \times 2''$	
14	Lozenges	Vegetables cut in a uniform diamond shape. $1/2'' \times 1/2'' \times 1/8''$	

How to cut a dice shape:

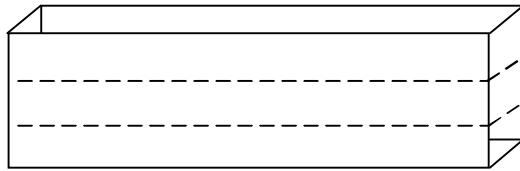
Trim the vegetable on all sides to form a uniform rectangular block like structure.



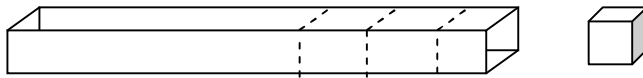
Measure the side of the dice required and cut the brick lengthwise



Again cut lengthwise in the same measurement to get a stick form.



Turn and cut the third side in the same measurement.



Knife skills are a very important part of chef's day to day work. Uniform cutting improves the appearance of dishes. Chopping boards are available in various sizes and materials. Wooden chopping boards are suitable to keep the edge of the knife for a longer time but absorb juices from fruits and meats. They need to be changed frequently. Fibre chopping boards are non-absorbent and last longer. Also, while pre-preparation we must keep vegetables and meats on separate chopping boards to avoid cross-contamination.

Summary:

Mise-en-place is the term used for pre-preparation in a hotel kitchen. It is important to organise the raw materials and equipments required for cooking a dish before actually starting to cook. There are various techniques such as cutting, mincing, grinding, pounding, whisking etc that are necessary for pre-preparation. Uniform cutting requires knife skills – an essential part of chef's profession. Practice helps to develop this skill.

-----Exercise-----

Q.1. Explain the following terms used in pre-preparation of food:

- a) Sifting
- b) Folding
- c) Marinating
- d) Pureeing
- e) Mincing

Q.2. Draw neat diagrams of various cuts of potatoes used for fries.

Q.3. Is there a relationship between cutting baton shapes in various sizes to cutting dices in various sizes? Explain.

Practical:

1. Using knife and chopping board, wash peel and cut the vegetables such as potato, onion and carrots into the following cuts:
 - a) Onion: Slices, Chopping, Mincing
 - b) Potatoes: *Jardiniere*, *Allumette*, Dices, Wedges
 - c) Carrots: *Julienne*, *Brunoise*, *Macedoine*, *Paysanne*

Discuss:

Is it easier to cut a particular shape of vegetable if we sort and choose raw vegetable shape suitable to our requirement? E.g. Is it easier to cut Batons from small round potatoes or oval and large ones? What about the quantity of trimmings while shaping? Can we use the trimmings?



OR



UNIT 8: Methods of Cooking

Objectives:

- To describe the aims and objectives of cooking food.
- To identify the principles of heat transfer while cooking.
- To classify various methods of cooking and explain them.
- To analyze the effect of heat on vegetables & fruits.
- To list the ways to preserve nutrients while processing food.
- To apply simple methods of cooking such as boiling, grilling, blanching, broiling and frying.

Aims and objectives of cooking food:

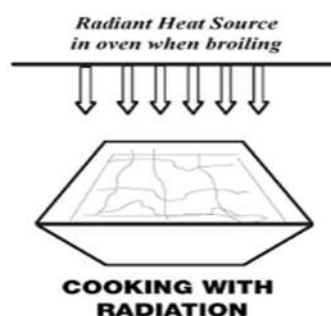
There are a lot of food items that can be eaten raw such as carrots, onions, cucumber, all the fruits etc. Raw fruits and vegetables majorly form the salad course or are used as garnishes. Most of our food is cooked. Objectives of cooking food are:

- To make the food more palatable
- To help in the digestion process since the food components are broken down by the effects of heat.
- It kills the bacteria and keeps the food sterile.
- It improves the eye appeal of the food.
- Multiple ingredients used in cooking enhance the nutrition value of the dish.
- Different methods of cooking changes the texture of the food which brings flavour and aroma.
- Cooked food can be stored for a longer time.

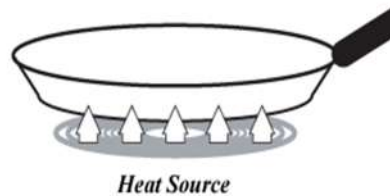
Heat transfer in cooking:

All methods of cooking requires any one or more of the following principles

- a) Radiation-:** Heat passes through directly on the object that has to be cooked e.g. Grilling.

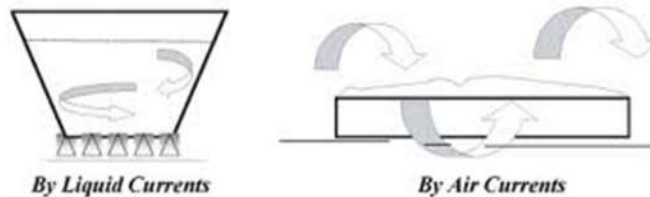


b) Conduction-: This is the process of using metals like pans and utensils for transferring the heat to object.eg using stainless steel vessels. The heat transfers from heated range to the pan and then from pan to the food contained within it.



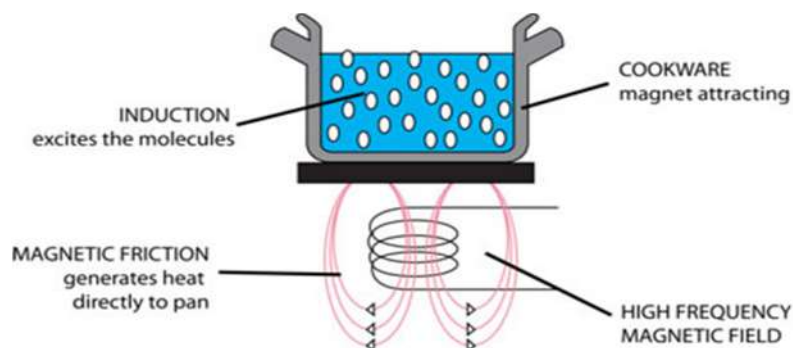
COOKING BY CONDUCTION

c) Convection-: This process is the movement of the heated particles of gases or liquids. On heating the particles expand becomes less dense and rise, the cooler particles take their place. Eg. Motion of boiling water in a pot, air currents in an oven.



COOKING BY CONVECTION

Induction-: This process is to cook with the help of electromagnetic waves. Eg. Induction stove.



Classification of methods of Cooking:

All the methods of cooking are classified under three categories:

1. Moist heat method
2. Dry heat methods
3. Medium of fat

1. Moist heat methods-: In this method the food is cooked by water or steam. E.g. Boiling, Simmering, Poaching etc
2. Dry heat methods-: In this method the heat is conducted without moisture either by using any of the following
 - Hot air- e.g. oven
 - Hot metal – grill, salamander
 - Radiation- microwave
3. Medium of fat-: In this method the food is cooked with the help of fats or oils. E.g. Shallow frying, Deep frying etc

Moist methods of heat

1. **Boiling**–Boiling happens when the liquid (water / stock etc) is bubbling rapidly with surface agitation. Water boils at 100°C (212°F). The food material is submerged to boiling water gets cooked in it and is softened.

Example-: Boiling of vegetables



2. **Simmering** – When the liquid is bubbling gently with a temperature of about 85°C to 96°C it is known as simmering. This is used for slow cooking of food ingredients. Eg. Making of stock.



3. **Poaching** – When the liquid is usually in a small quantity and the temperature is about 71°C to 82°C and the liquid is not actually bubbling it is called poaching. It is used for gentle cooking. Eg.- poaching of fish, egg.



4. **Stewing**– This is a process in which the food particles are surrounded by liquid and it is cooked in slow heat for a long time. It is usually served along with the liquid which was used for stewing. E.g.- Stewed fruits



5. **Blanching**- This is the methods in which the items are partially cooked in water. This enables the food



particles to be partially cooked. E.g.- blanching of potatoes for French fries.

- 6. Steaming**-In this method, the food is exposed directly to steam. Cooking an item by lightly covering the pan or by wrapping it in foil so that the food gets cooked in its own moisture.

Eg.- Jacket potatoes, steamed fish, steamed idlis



Steamers can be used for cooking rice, dal that holds the steam under pressure, the temperature varying from 106°C to 121°C. This method is widely used as it minimises the dissolving away of nutrients.

- 7. Braising**- this is a combination of two methods stewing and pot roasting. The food particles is browned in fat and then placed in small amount of liquid and the liquid is served along with the meat. E.g. Irish stew



Dry method of cooking:

- 1. Roasting**- When the food particles is surrounded by dry hot air usually in the oven or over open fire it is known as roasting. The meat is usually cooked uncovered and applies to meat, poultry and vegetables. The food material to be cooked is in solid form and fat is brushed on surface for a nice brown colour and crisp texture.
- 2. Baking**- This terms usually applies to breads, pastries and other such dishes which usually have a semi-solid texture and get cooked and set (in a solid form) after baking. Usually the fat is contained within the food and the temperature of oven depends on the food which is to be baked.
- 3. Barbecue**- In this method, dry heat is created by burning hard wood or hot coal. The food is skewered and cooked near coal base and the flavour of the coal along with little smoke is imparted to the meat / vegetables that are used.



4. **Broiling**- In this method of the food particles is cooked over dry heat. Eg.- Broiling of spices for Indian masalas etc.



5. **Grilling**- This is done on an open grooved griddle over heat source which may be from charcoal, an electric element or a gas heated element. Eg. grilled chicken



6. **Griddling**- This is done on a solid cooking surface called griddle with or without fat to prevent sticking. Eg.- chapattis, steaks



Medium of fat

1. **Sauté**- this French word means to “jump”. Tossing the meat or vegetables in less oil to gets a slight browning effect is sautéing.



2. **Deep frying**- In this method, the food is mostly coated with crumb or dipped in a batter before frying. Once the oil is sufficiently hot, the food is lowered in the oil carefully. It is cooked till the desired brown colour and crisp texture is obtained. The food is then removed using a frying spoon, frying basket or spiral strainer allowing excess hot oil to drip back in the vessel. Food is then kept on an absorbent paper for few minutes to remove excess oil. The oil used for frying should be kept clean and replaced in with clean fresh oil from time to time. If too hot, the oil can reach smoke point and then burn. Therefore one should be very careful.



3. **Shallow frying**- In this method, the food is partially submerged in fat / oil. Thus this method uses less amount of fat for frying the food particles. The product is turned and cooked on both sides to desired brown colour and crisp texture. is known as shallow frying. Eg.- shallow fried fish, parathas.



Effect of heat on vegetables & fruits

a) Colour - The colour of the vegetable is dependent on the colour pigment present in the vegetable. Various colour pigments present in vegetables & fruits are:

- ❖ Flavones - This pigment is present in white or cream coloured vegetables e.g onions, cauliflower, potato etc. This pigment stays white in colour in slightly acidic medium while it turns yellow in alkaline medium. Hence, while cooking these vegetables, a chef can add a little lemon juice to enable the vegetable to retain its colour.



- ❖ Chlorophyll - This pigment is present in green coloured vegetables e.g. French beans, Spinach, Mustard leaves etc. This pigment turns yellow in acidic medium and remains bright green in alkaline medium. However, addition of soda to create alkaline medium destroys the cell structure of vegetable and makes it mushy. Hence, they should be cooked for short periods uncovered so as to enable volatile acids to evaporate and neutral pH is maintained.



- ❖ Carotenoids - This pigment is present in yellow, orange and some red coloured vegetables e.g. Carrot, Corns, Sweet potato, Tomato, Mango, Pumpkin etc. It is relatively stable and is not affected significantly by acidic or alkaline medium of cooking. It is fat soluble and leaches in cooking oils.



- ❖ Anthocyanin - This pigment is present as the red-purple colour of grapes, berries, raspberries and cranberries etc. This appears red to blue depending on the pH value. In acidic medium it turns red and in alkaline medium it turns blue.

- ❖ Betalains - This pigment is responsible for the deep red color of beets. It is water soluble and leaches out in the cooking liquid. Beets should be cooked whole without cutting in water and little vinegar or lemon added to create a slightly acidic medium to retain maximum colour. It should be cooked, peeled and then cut.



b) Texture

The structure and shape of vegetables and fruits is because of cellulose and pectin fibres. These fibres are softened with application of

heat. The more the heat is applied, softer the fibres become and the vegetable loses its firm shape. There are vegetables with less fibres such as spinach which loses its shape in boiling water quickly or with more fibres such as carrots or potatoes which retain their shape for several minutes.



The mild acidic medium which can be created by adding lemon juice or vinegar in boiling water makes the fibre firmer and increases the cooking time. Sugar too strengthens the fibres and helps the vegetable or fruit to retain its shape. On the other hand, alkaline medium which can be created by adding baking soda makes the vegetables soften quickly.

The above knowledge is applied by a chef while cooking vegetables and fruits. Sugar or acidic medium can be used to cook fruits and vegetables when apart from cooking, retaining shape is important. Alkaline medium is usually not used as the vegetables and fruits get mushy and lose shape and appearance completely. Most vegetables should be cooked to still retain their shape and be tender enough to eat.

c) Flavour

Flavour and nutrients are leached out in cooking liquid specially if cooked for long time. Hence, to control flavour loss, cook for shorter durations in less liquids or steam. Adding salt in boiling water also helps to reduction in loss of flavour in cooking liquid.

Tips for preservation of nutrients while processing fruits and vegetables

There are some basic factors to be kept in mind while pre-preparation and cooking of fruits and vegetables. All vegetables and fruits are good source of vitamins, minerals and fibre. Two vitamins B complex and Vitamin C are water soluble. Hence they are lost while washing, cooking in lot of water or even leaving the fruit or vegetable in water for long hours. Even oxidation can cause loss of nutrients. Vitamins A, D, E and K are fat soluble. These vitamins are lost in the fat content of the cooking medium or other ingredients.

Food preparation techniques such as peeling, chopping and cooking make an impact on the nutritional value of fruits and vegetables. As a general rule, keep cooking time, temperature, and the amount of liquid to a minimum. How foods are cooked can have a big impact on their nutrient content. That's because many vitamins are sensitive to heat and air exposure (vitamin C, the B vitamins, and folate in particular). Loss of nutrients increases as cooking time increases and with higher temperatures.



Cooking methods that minimize the time, temperature, and amount of water needed, help to preserve nutrients. Steaming is a good way to cook vegetables quickly and retain valuable nutrients. Stir frying is another way to quickly cook a variety of vegetables.

Follow these tips to preserve nutrients in kitchen:

- 1) Use fresh vegetables and fruits which are in season - Fresh, ripe produce in-season will usually be highest in nutrients. Nutrients are lost with the process of freezing the seasonal produce. Hence, as far as possible, use fresh ingredients.
- 2) Judicious use of water - Up to 50 percent of vitamin C, thiamin, vitamin B6 and folate content in food can be lost to the water it's cooked in. In order to retain water-soluble nutrients, use cooking methods like steaming or stir-frying that use less water. Use less water in steaming and boiling, and reuse cooking water in soups, sauces, making dough or juices to capture escaped nutrients.
- 3) Short cooking durations - As a rule of thumb, the longer foods are exposed to heat, the more nutrients are lost. To reduce cooking times, cover the pot to retain heat and avoid evaporation; place vegetables in already boiling water, and learn to enjoy most vegetables with a crunchier texture (not mashy or overcooked, still with little rawness left).
- 4) Cut in bigger pieces - Chopping foods into smaller pieces increases the surface area exposed to light, heat and water — three factors that degrade nutrients. One exception is garlic and others in the *allium* family (onions, leeks, shallots.) Chopping these foods and keeping them for about 10 minutes before cooking increases their active components.
- 5) Correct storage - Nutrient loss in many fruits and vegetables can be decreased with cooler temperatures, high humidity and less air contact. Store produce in airtight containers in the fridge.
- 6) Rinse fresh vegetables well just before using. Even those with skins need to be washed to remove bacteria, insects, and as much pesticide as possible. Do not soak vegetables, as that can remove key nutrients, like vitamin C.

- 7) Wash whole fruits and vegetables – Washing vegetables or fruits after cutting leads to more nutrients being leached out in water. Wash whole and then cut.
- 8) Eat fruits and vegetables raw whenever possible in salads and smoothies or as whole fruits and vegetables everyday for a balanced diet.

Summary

Various methods of cooking enables food to take on different taste, makes it easily digestible, improve aroma, texture and colour and helps to make it safe to eat. There are various ways of cooking – with moisture, dry heat or with fat. A chef needs to employ these cooking techniques to prepare various dishes. He must understand the effects of heat on all the ingredients. This chapter summarises the effects of heat on vegetables and fruits. These are employed while cooking of vegetables practically. We also must ensure to employ techniques that can help preserve nutrients when we process the food for preparing a healthy meal.

Practical:

1. Boiling –

- a) Green beans: Boil water with a spoon of salt. Wash and cut beans



in even size 1”pieces. Put them in boiling water. Cook till done. Remove from boiling water and immediately rinse them in cold water. This is called refreshing a vegetable after cooking. This helps to arrest further cooking of vegetable and

loss of colour / texture.

- b) Rice: Pick, wash and soak rice in sufficient quantity of water for half an hour. Boil water about four times the quantity of rice with a spoon of salt. Add rice after removing the water used for soaking. Boil till rice is tender. Strain the excess water (This can be preserved to starch cotton clothes or even refrigerated and used to thicken soups, gravies). Cover and leave for about 15 minutes. An alternate method is to cook rice by absorption method where water is taken in twice the quantity of rice and is absorbed completely in boiling.
- c) Beetroot: Wash whole beetroot. Do not cut, just trim away the greens. Boil water with a spoon of salt and vinegar. Add whole beetroot. Boil till tender. Refresh. Peel and cut in dices. (This is done to minimise



leeching of colour of beetroot. This can be eaten as a salad with some lemon juice, salt or any other seasoning)

2. Grilling - Bell pepper, Zucchini, Potato

a) Bell peppers: Wash and cut bell peppers in equal sized chunks. In



a bowl, toss peppers with little oil, $\frac{1}{2}$ teaspoon salt, and $\frac{1}{4}$ teaspoon coarsely ground black pepper. Place peppers, skin side up, on hot grill. Cover grill and cook peppers 4 to 5 minutes or until beginning to soften. Turn peppers over; cover and cook 3 to 4 minutes longer or until slightly charred.

b) Zucchini: Wash and cut zucchini in $\frac{1}{4}$ cms thick slices. Brush with some oil, chopped garlic, salt and crushed black pepper. Cook on grill till they begin to brown. Turn and cook on the other side as well.



c) Potato: Wash, peel and cut potato in slices. Boil in salted water till half cooked. Refresh. Pat dry. Brush with little oil and salt. Place on a grill and cook till it is golden and crispy.



3. Blanching Tomatoes:

This technique is used to remove skin of the tomatoes. in preparation of sauces, gravies etc. Wash tomatoes and make a + sign using a knife on the base. Boil water. Put tomatoes in boiling water for about 12 seconds (less if very ripe and more if too firm). Immediately take out and put in cold water. Leave for a minute. Start peeling the tomatoes from the + sign to the other side using your hands. Remove skin completely. When this tomato is chopped, it is termed as Concassé. It is used in many gravies and sauces.



4. Broiling Cumin seed:



Heat the griddle. Put some cumin seeds on it and continuously turn it with a spatula till they are browned evenly. This is then coarsely grinded and used in *raitas*.

5. Frying Potatoes: Peel and cut potatoes in Allumette shape (matchstick potatoes). Place in a bowl of water with salt. Leave for about 15 min. Remove from water and pat dry. Deep fry in hot oil to a golden brown colour and crisp outer. Remove from oil using a



frying spoon or a frying basket. Put on an absorbent paper to remove excess oil. Sprinkle some salt.

-----Exercise-----

Q.1. Write the aims and objectives of cooking food.

Q.2. Differentiate between the following:

- a) Conduction and Convection
- b) Boiling and Simmering
- c) Braising and Stewing
- d) Deep frying and shallow frying.

Q.3. List the colour pigments found in vegetables and fruits. Tabulate the correct way of boiling the different coloured vegetables.

Q.4. How does cooking affect texture of vegetables.

Q.5. Discuss the ways of preserving maximum nutrients while processing food.

UNIT 9: SALAD

Objectives:

- To describe Salads and appraise their importance in daily diet.
- To classify salads in to various categories.
- To explain the parts of a salad.
- To prepare Salad Waldorf, Salad Niçoise, Chicken or sprouts salad and Pasta salad.

Salad:

Salad is a combination of raw or cooked ingredients, generally served cold and flavoured with a dressing, served at the beginning of the meal as starter or even as accompaniment to main meal.

Since many salads include raw ingredients, it is an important form of nutrition and gives the body lot of nutrients and roughage to keep digestive tract healthy. Cooking losses of nutrients is minimized. In addition, depending on the ingredients it can be a good source of proteins, minerals and vitamins. Apart from vegetables, starch and proteins one can also add nuts to most of the salads.

When preparing salads, one should be very careful on hygiene. Take an example of a salad with some grilled chicken, lettuce, cherry tomatoes, cucumber etc. If while cutting and cooking, we use a chopping board and knife for cutting chicken and without proper cleaning / sanitization use the same for cutting tomatoes and cucumber, we might cause **cross contamination**. Chicken is grilled after cutting, so all bacteria is destroyed and it is safe to eat but the remains of juices from chicken will lodge in tomatoes and cucumbers through chopping board, knife or our hands. This may cause infection as the cucumber and tomatoes will be used raw. Hence, we must be twice careful of hygiene when dealing with salads.

Salads can form various course in menu such as:

- Appetizer – Salads served as starters or appetizers are served in small quantities before the meal. They usually contain fresh, light and crisp ingredients in tangy dressing to stimulate the appetite.
- Accompaniment/Side dish – These salads are served as a side dish with main meal in small quantities, not rich but complementing the flavour and providing a variation of texture with main dish.
- Main course salads – These are salads that are served in bigger quantities, are of compound nature usually having a source of protein,

starch, vitamins forming a balanced meal. They contain meat, poultry, egg, beans etc.

- Dessert Salads – These are usually fruit based salads with little sweet taste. They contain fruits, nuts, cream and even some sweet gelatin.

Quality of salad is based on the freshness of all the ingredients, how the blend together in texture, flavour and colour and having an eye appealing presentation.

Classification of Salads –

There are various ways to classify salads. Some do it on base of nature of main content such as fish base, meat base, egg base etc, while some other books classify them as simple and compound salads based on the number of main ingredient. There are many others who classify salads as bound and tossed salads. There are also classical and contemporary salads.

Depending on the number of main ingredient that make a salad, they can be classified as:

- Simple salads: The salads that contain type of main ingredient with little dressing and garnish are called simple salads. E.g. Cucumber salad, Beet root salad, fish salad etc
- Compound salads: The salads that are made up of more than one main ingredient, dressing and garnish are called compound salads.

Depending on the main content of the salad, they can be classified as:

- Vegetable salad,
- Fruit salad,
- Pasta salad,
- Protein salads .

1. Vegetable salad- The salads which are made up of different types of vegetables – raw or cooked is a vegetable salad. Generally these salads are eaten on their own as starters or as accompaniments of main course. Fresh crispy greens form an important part of these salads. E.g. Green salad, Coleslaw, Beetroot salad etc



2. Fruit salad: The salads which are made up of different varieties of fruits as main ingredient are a fruit salad. They are served as appetizers or even at the end of the meal. A variety of canned or fresh fruits cut in fancy shapes are used to prepare the salad. E.g. Waldorf salad
3. Pasta salad: The salads which have a cooked pasta as a major ingredient are classified as pasta salads. They may or may not have other vegetables or herbs to flavour the salad. These are starch rich salads and are

heavier than vegetable and fruit salads. Fancy shapes of boiled pasta, raw / cooked vegetables are normally used.

4. Protein salad- The salads which are made up of a protein dominant ingredient such as grilled chicken, fish, eggs, ham etc are classified as protein salad. E.g. Roast chicken salad.

PARTS OF SALADS

- a) **Base**
- b) **Body**
- c) **Dressing**
- d) **Garnish**

Base:- The base of a salad is generally made up of leafy greens. They add crunch, eye appeal and nutrition to the salad. The leafy greens are used to cover the base of the platter for contrast in colour and increasing the eye appeal. They are mixed with ingredients for colourful appearance, crunch and nutrients. There is a large variety of green leaves that can be used to prepare the base of the salad. They include: Rocket, Romaine, Frisse, Iceberg, Watercress, Chicory, Radicchio, Endive, Baby spinach, Butterhead lettuce etc.



The greens are trimmed and wilted or discoloured leaves are removed. The core is removed and the leaves are washed well as dirt may be lodged between folds of leaves. Keeping in chilled water leaves them crunchy. The leaves are then drained of excess water and torn into bite size pieces before use.

Body:- The main or dominant ingredients in a salad form its body. This is the main source of nutrition, taste and texture of the salad. The ingredients used in body must complement each other in flavour, colour and texture. The name of the salad is many times based on its main ingredient. This can include:

- Vegetables – Cucumber, Radish, Carrot, Cherry tomatoes, Olives, Bell peppers etc
- Fruits – Apple, Banana, Pineapple, Pear, Melon, Grapes, Oranges etc
- Nuts – Almond, Raisin, Pine nuts etc
- Varieties of cheese
- Fish, Shell fish, Meats, Poultry, Eggs
- Pastas

- Grain based such as couscous

Dressing:- Dressings are meant to provide moisture, taste and aroma to the salad. There are a huge variety of dressings. These include:

- a) Vinaigrette dressings - Dressings are usually a combination of oil, vinegar / lemon juice, seasoning and other herbs / flavouring ingredients. The oil used is usually extra virgin olive oil which contributes to improve the mouth feel and nutrition of the salad. Vinegars or lemon juice is added for tartness and moisture to the salad. Other seasonings / flavourings are added to improve taste of the salad.
 - French vinaigrette – three parts olive oil and one part vinegar
 - English vinaigrette – one part olive oil and two parts vinegar
 - American vinaigrette – equal parts of olive oil and vinegar
 - Italian vinaigrette – four parts olive oil and one part vinegar
 Lemon dressing is made by replacing vinegar with lemon juice.

- b) Sauce dressings - Many sauces are used as a dressing such as mayonnaise and its varieties (such as Thousand island dressing) are used as salad dressings. Mayonnaise can be combined with other ingredients such as honey for fruit dressings, mint puree for vegetable dressings etc. Apart from this mustard sauce can also be used as salad dressing.

- c) Cream dressing – Usually thin cream and acidulated cream prepared by using three parts cream and one part vinegar / lemon juice is used as a dressing.

- d) Yogurt dressing – A thick natural yogurt itself or mixed with little cream or mayonnaise is frequently used as a salad dressing in contemporary menus.

- e) Other dressings – Many other ingredients can form base of a dressing. Blue Cheese, Balsamic vinegar, Fruit juices (e.g. orange juice) and Wines or wine reductions form a popular dressing base.

All the dressings should be seasoned (added with salt / pepper / mustard) properly. Many times spices, herbs, garlic or other ingredients are added to the base to add flavour to the salad. The dressing must improve food value of the salad, be complementing the flavour of ingredients of the salad, give it a good mouth feel and palatability and add to the taste and aroma of the salad.

Garnish: The main purpose of adding the garnish is to increase its presentation and eye appeal. There are many fancy cuts of vegetables, a small ingredient such as cherry tomatoes, mint sprigs, coriander green sprigs, lemon wedges etc.

CONTEMPORARY PRESENTATION OF SALADS:

Salads form an important part of cold buffet in hotels. A variety of salads are prepared, put in large platters and kept on ice beds on the cold buffet counter. Type of salad may vary on daily basis and a cyclic menu is used.

Apart from this, many hotels now provide a live salad buffet rather than pre-mixed and dressed salads on plates or entrees. This means that there is a counter with a variety of fresh salad body ingredients including vegetables, fruits, nuts, meats etc already raw / cooked as required and cut in edible pieces. Along with these ingredients a variety of dressings is offered separately. The guest can pick and choose any variety of main ingredients and add any dressing he / she likes. The chef mixes the salad as per guests liking. This helps to control food wastage and leaves room for guest to choose ingredients of salad as per personal likes.

Summary

Salads are a combination of raw or cooked ingredients in a dressing that can be served as starter, main dish, accompaniment or even as a dessert. They are healthy as they usually have some raw vegetables which minimize nutrient loss while cooking and also provides roughage. A good salad has four parts – Base, Body, Dressing and Garnish. Depending on the main ingredient, salads are a good source of nutrients to the body.

Practical:

Salad Waldorf



S.No.	Ingredient	Quantity
1	Red Dessert Apples	400 gms
2	Celery	50 gms
3	Walnut kernels	50 gms
4	Mayonnaise	50 gms
5	Caster Sugar	1 Tb sp
6	Lettuce	50 gms
7	Honey	1 tea spoon
8	Lemon	1 no.

Method:

- Clean walnuts. Roast in oven and remove all skin. Crush coarsely.
- Wash apples. Remove core and cut in even sized dices. Do not peel.
- Add caster sugar, lemon juice and salt. Keep aside.

- Wash and cut celery stem in thin slices.
- Mix together mayonnaise and honey.
- Mix together apple dices, celery, nuts and mayonnaise dressing.
- Spread some clean lettuce at the base and put in the salad.
- Garnish with a decorative cut of apple.

Note: Many chefs add a little cream to mayonnaise.

Salad Niçoise

S.No.	Ingredient	Quantity
1	French beans	200 gms
2	Cherry tomatoes	100 gms
3	Potato	150 gms
4	Olive oil	1 tb sp
5	Eggs	2 nos
6	Salt	To taste
7	Pepper powder	To taste
8	Anchovy fillet (in oil)	15 gms
9	Pitted olives	15 gms
10	Lettuce	50 gms



11	Vinegar / lemon juice	1/3 tb sp.
12	Dijon mustard	Pinch

Method:

- Wash and cut cherry tomatoes in halves.
- Boil potatoes. Peel and cut in even sized dices.
- Cut French beans in diamond shape. Boil and refresh.
- Hard boil eggs. Shell and cut in 8 pieces.
- Clean lettuce and tear in bite size pieces.
- Cut olives in halves.
- Take a clean bowl. Mix together vinegar, olive oil, salt and crushed pepper and mustard vigorously to form an emulsion as a dressing.
- Mix together all the ingredients with dressing.
- Prepare a base with lettuce. Put the prepared salad.
- Garnish with a decorative cut of tomato.

Note: You could save boiled eggs to the last as they get broken while mixing and the salad loses its colourful appearance.

Anchovies are high in salt, so be careful while adding salt to the dressing.

One can add a pinch of pinch caster sugar, chopped garlic and chopped parsley to the salad as per taste.

Grilled Chicken Salad

S.No.	Ingredient	Quantity
1	Chicken (Boneless breast)	350 gms
2	Salt	To taste
3	Black pepper corns	4 -5 nos
4	Olive oil	30 ml
5	Lettuce	50 gms
6	Orange	200 gms
7	Honey	1 tb sp
8	Chilli flakes	½ t sp

9	Oregano	½ t sp
10	Garlic	4 -5 cloves
11	Lemon	1 no.



Method:

- Wash chicken. Pat dry.
- Tear lettuce in bite size pieces and keep in chilled water.
- Prepare a marinade with little oil, salt, crushed black pepper, chilli flakes, oregano, crushed garlic and lemon juice. Add chicken and leave for half an hour.
- Apply little oil on grill and cook chicken till done. Brush with marinade mix in between to retain moisture.
- Cool. Remove excess oil on absorbent paper.
- Cut in bite size pieces.
- Cut orange wedges in halves and remove all pips and skin.
- Prepare a dressing using little orange juice, lemon juice, olive oil, salt and honey.
- Mix together lettuce, chicken and orange segments with dressing.
- Garnish with an orange twist. Cut a thin even slice of orange. Cut a side till just beyond the centre pith. Twist.



Note: Add some toasted and shredded almonds or pine nuts for an extra crunch.

Sprouts Salad

S.No.	Ingredient	Quantity
1	Green gram or horse gram sprouts	250 gms
2	Onion	80 gms
3	Lemon	2 nos
4	Cucumber	100 gms
5	Olive oil	30 ml

6	Lettuce	50 gms
7	Salt	To Taste
8	Black pepper powder	To Taste
9	Tomatoes (Red salad tomatoes)	50 gms
10	Green coriander	50 gms
11	Green chilli	To Taste
12	Cumin seeds	10 gms



Method:

- Wash and clean the green gram / horse gram. Keep moist and covered and let them sprout in two days time.
- Wash, peel and chop onions and cucumber. (Use English cucumber that can be eaten with green skin. This may not be peeled, just chopped).
- Wash and chop tomatoes.
- Wash and chop green chillies and green coriander.
- Broil and coarsely powder cumin seeds.
- Prepare a dressing using lemon juice, olive oil, salt, pepper powder / chopped green chillies and cumin powder. Mix well.
- Mix together the dressing and salad ingredients.
- Prepare a base of lettuce. Put the salad.
- Garnish with a lemon wedge.

Note: One can add some *chaat masala* for a spicier version. You could also use any other sprout apart from green gram.

Pasta Salad

S.No.	Ingredient	Quantity
1	Penne / Macaroni pasta	250 gms
2	Broccoli	200 gms
3	Red Bell pepper	80 gms
4	Yellow Bell pepper	80 gms

5	Zucchini	100 gms
6	Salt	To taste
7	White pepper powder	To taste
8	Chilli flakes	2 gms
9	Lemon	2 nos
10	Mayonnaise	100 gms



Method:

- Boil water sufficient to cover pasta. Add a pinch of salt and a spoon of oil. Add pasta. Cook till done. Wash in running cold water.
- Cut broccoli in small florets. Remove thick stalk. Cook in boiling water with salt and refresh.
- Cut bell peppers and zucchini in even ½” size triangles. Take few drops of oil in a pan. Put the vegetables and sauté till partly tender.
- Mix together mayonnaise, salt, pepper powder, chilli flakes, and lemon juice.
- Add cold pasta, broccoli, bell peppers and zucchini with the dressing.
- Spread some clean lettuce at the base and put in the salad.
- Garnish with shaved parmesan cheese.

Note: You can add more vegetables, nuts and even pitted olives to the salad. You could also add shredded basil or parsley leaves for herb.

-----Exercise-----

Q.1. What are various parts of salad? Explain.

Q.2. List the following:

- e) Greens that can be used as salad base
- f) Protein contents of a salad
- g) Starch contents of a salad
- h) Ingredients that can be used as salad dressings.

Q.3. Discuss the nutritional importance of salads in our daily diet.

Q.4. Are salads prone to contamination? How?

Explore

1. Explore the history of Salad Waldorf. How did it gain the popularity?
2. Salad Niçoise is a classical salad yet served in a variety of ways. Is it useful to apply a deconstructed approach of presentation to this salad? Why?

UNIT 10: SOUPS

Objectives

- To write the definition of soup and explain its importance in diet.
- To classify soups in various sub categories based on their unique characteristics.
- To prepare Cream of tomato soup, Purée of carrot soup, Gazpacho and Chicken Velouté soup.

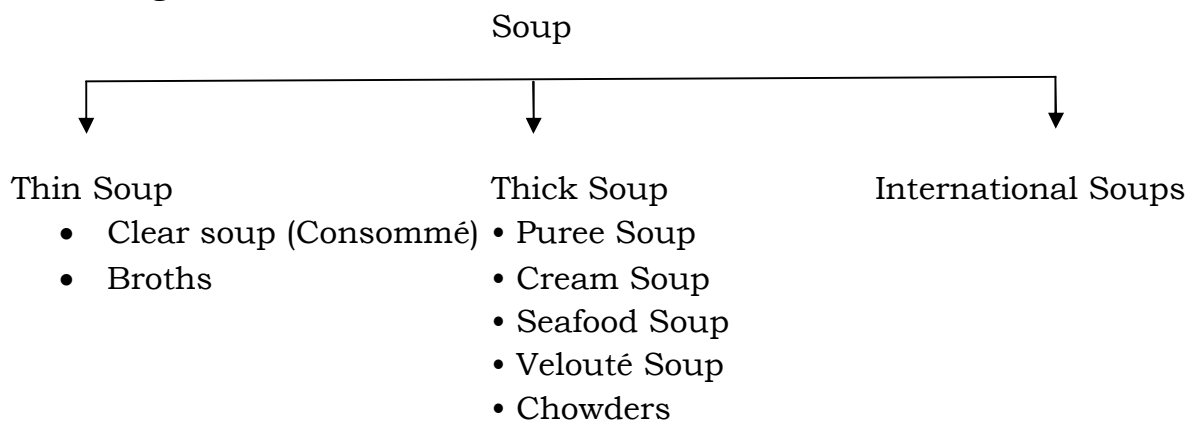
Definition: Soups are a form of liquid food that is prepared by cooking meat, fish, poultry, vegetables etc. They are flavoured with numerous spices such as bay leaf, cloves, pepper corns and herbs such as coriander, thyme, basil to name a few. Soups are served at the beginning of the meal.

Soups are considered healthy food as they are easy to digest, provide nutrients and sufficient amount of fluids to the body. A bowl full of soup usually provides a good amount of carbohydrates, proteins, vitamins and minerals. Soups are served with breads such as toast, bread sticks, bread rolls along with butter.

Types of Soups

Depending on the consistency of soup, there may be thin or thick soups. Thin soups have a consistency of water or little thicker because of the starch ingredients present in soup. On the other hand thick soups are thickened purposely by adding starch in some form.

It is interesting to note that not all soups are served hot. There are cold soups too. These include soups like jellied consommé, Gazpacho, Vichyssoise, *Sarki* from India and many more that are served cold and are a refreshing treat in extreme summers.



Thin Soups

- a) Clear soup- These soups are also known by the French name 'Consommé'. These are prepared by simmering left over bones and vegetables to prepare a thin liquid called 'stock'. In continental cuisine, the stock is used to prepare sauces and soups. The stock is clarified using a mixture of minced meat and egg whites. It is flavoured with



mirepoix, bay leaf, pepper corns etc and simmered. It is then strained through muslin cloth. The soup obtained is transparent, of amber colour, water like consistency but strongly flavoured and aromatic. It is also very nutritious being obtained from bones, meat, eggs and vegetables. *Mirepoix* is a mixture of chopped root vegetables like onion, carrot, celery stem, parsley stem & leeks. Various types of consommés are named according to the garnishes with which they are served. E.g.

- Consommé Julienne: It is garnished with juliennes of vegetables.
- Consommé Celestine: Consommé garnished with thin strips of pancake.
- Consommé Royale: Consommé garnished with dices of savoury egg custard.
- Consommé Xavier: Consommé garnished with threaded egg.
- Consommé Carmen: Consommé garnished with boiled rice, chopped chervil, juliennes of pimentos and dices of tomato.

- b) Broth – These are simple thin soups that are prepared with meats, vegetables or both. Broth is prepared with a base of water or stock,



pieces of meat / fish, vegetables, seasonings and herbs. Being a thin soup, broth is frequently made more substantial by adding starch such as rice, barley or pulses in small amount. They are un-passed soups i.e. not strained. They are wholesome, nutritious and flavourful. e.g. Scotch broth

Thick soups

These soups are opaque and consistency is thicker. This is because usually there is an add-on thickening in the form of a starch ingredient that is added in little quantities to thicken it.

- a) Cream soups – These soups are made of chicken, meat or any vegetable and are known by the same name. e.g. cream of chicken, cream of cauliflower, cream of peas etc. Thus the soup takes the colour & taste of main ingredient even though there might be other ingredients in small quantities. To prepare



cream soups, first *mirepoix* is sautéed with little butter. Main ingredient and seasoning is added and cooked a little till aromatic. Add moisture in the form of water, stock or milk. Cook till all vegetables are well done. Grind in a mixer and strain. This base is then mixed with some white sauce (prepared by cooking little refined flour in butter and adding milk) or cream to adjust consistency, taste and colour.



b) Purée soups – These soups are made of dry legumes or fresh starchy vegetables. Hence once cooked and pureed, the starch from the main ingredient itself thickens the soup. They may or may not contain little cream. E.g. Purée of potatoes, Purée of lentils, Purée of pumpkin etc. One can combine various flavours to make puree soups such as pumpkin with fennel, carrot with orange, potatoes and leeks etc. They are prepared in same way as cream soups but do not require any add-on thickening.

c) Bisque soups – These are soups made with shell fish and are usually thickened with rice. Similar to cream soups, the *mirepoix* is cooked till aromatic and then cleaned shell fish, seasoning and moisture is added. While simmering some rice is added which when cooked is grinded with main ingredients and strained. The starch from the rice is thickens the soups. They are then appropriately garnished. E.g. Prawn bisque.



d) Velouté soups – To prepare velouté soups, a little *roux* is prepared using equal quantities of flour and butter. This mixture is cooked at low heat till it is aromatic and has a light brown (blond) colour. Meat / vegetable stock is added and the soup is then cooked.

Small pieces of meat are added to the soup along with seasoning. When done they are finished with a mixture of egg yolk and cream termed as *liaison*. Care should be taken that egg yolks do not curdle. E.g. Chicken velouté soup.

e) Chowders - Chowder is a seafood or vegetable stew, often served with milk or cream and mostly eaten with saltine crackers. These are unpassed soups i.e. not strained. E.g. Clam chowder is made with chopped clams and diced potatoes. Corn chowder is made with corns, onion, potatoes and celery.



International Soups

There are many soups that are known from their region of origin. These soups are separately classified as International soups. Some popular examples are:

- Mulligatawny (India) – The soup consists of a broth from chicken and lamb, fried onions and spiced with curry powder. Often, vegetables, nuts, apple and rice are added.
- French Onion soup (France) – It is a type of soup usually based on meat stock and onions, and often served gratinated with croutons and cheese on top.
- Minestrone (Italy) – Minestrone is a thick soup made with vegetables, often with the addition of pasta or rice. Common ingredients include beans, onions, celery, carrots, stock, and tomatoes.
- Cock-a-leekie (Scotland): A traditional soup prepared with chicken stock, leeks, rice / barley and prunes.
- Avgolemeno (Greece): The soup is prepared with chicken / lamb broth cooked with rice/ tapioca, pieces of meat along with a mixture of egg and lemon. There is also a sauce by the same name in greek cuisine.
- Miso (Japan): Miso is traditional Japanese seasoning made by fermenting soyabeans with salt and some other ingredients. Traditional stock *dashi* is mixed with miso paste. There are many variations that include pieces of meats, seafood and vegetables.
- Gazpacho (Spain): Tomatoes, garlic, onion (often cucumber and bell pepper as well), a slice of bread, olive oil, vinegar and salt are mixed together and blended. Traditionally it is pounded in a mortar to form a salad soup. However, in modern times it is often grinded in a food processor. It may be garnished with diced cucumber and bell peppers. The soup is served cold.
- Caldo Verde (Portugal): Caldo verde is a popular soup in Portuguese cuisine. The basic traditional ingredients for caldo verde are potatoes, collard greens, olive oil and salt. Additionally garlic or onion may be added. Interestingly, the soup is popular in Goa as well.
- Scotch Broth (Scotland): A broth made by stewing cuts of lamb / beef with root vegetables such as onions, leeks, turnips, carrots along with lentils, barley etc.
- Sarki (India): A traditional soup from Bohri cuisine, prepared by lentil stock, boiled mashed lentils, spices and mixed with grated cucumber, mint / coriander leaves. It is served cold or at room temperature.

Terms used:

1. *Mirepoix* – A mixture of roughly cut root vegetables such as onion, carrot, leek, celery etc used for flavouring stocks, soups and sauces.

2. *Roux* – A mixture of equal quantities of butter and refined flour cooked together to a white, blond or brown colour. The mixture is used to thicken soups and sauces.
3. White Sauce (*Béchamel*): A basic white sauce prepared by cooking white roux and milk flavoured with onion, bayleaf and cloves & seasoned. This is a sauce used to thicken cream soups or even mixed with vegetables and gratinated.
4. Seasoning: In culinary terms, seasoning refers to adding salt and pepper as per taste to any dish.
5. Liaison – A thickening agent made by whisking together 1 part egg yolk and 3 parts cream.

Practical

Cream of Tomato Soup

Serves – 4 portions

S.No.	Ingredient	Quantity
1	Onion	25 gms
2	Carrot	25 gms
3	Garlic	2 small cloves
4	Tomatoes (Red ripe ones not too sour)	250 gms
5	Parsley stem	1 no
6	Celery stem	2" piece
7	Leeks	2" piece
8	Salt	To taste
9	Pepper corns	A tea spoon
10	Bay leaf	2-3 nos
11	Bread (preferably two days old)	2 slices
12	Oil	For deep frying

Method:

- Wash all the vegetables.
- Peel onion, garlic and carrots.
- Chop onion, garlic, carrot, celery stem, parsley stem, leeks and tomatoes.
- Melt butter in a pot.
- Add chopped onion, garlic, bay leaf & crushed pepper corns.
- Sauté to a light colour on medium flame.
- Add all the vegetables, salt and again cook for few minutes.

- Add water or vegetable stock sufficient to cover the vegetables and simmer till all vegetables are tender.
- Cool. Blend in a mixer.
- Strain the blended mix and keep the liquid (soup).
- Reheat the strained tomato soup. Add little béchamel / cream to adjust consistency. (It should not change the colour of the soup but is required to thicken it, enrich it and give the soup a creamy consistency)
- Adjust salt & pepper.
- Decorate with little cream.
- *Croutons*: Remove the crust of the bread from all four sides. Cut the slice of bread in about 1cm square pieces. Deep fry (or Toast) to a light brown colour. Drain excess oil on an absorbent paper. Add to the soup just before service.

To prepare Bechamel for thickening the soup:

- Boil 200 ml milk with an onion studded with bayleaf and clove. Keep aside.
- In a pan, take equal quantity of butter and flour (Approx. 15 gms each). Cook together on slow flame till the mixture is aromatic and of sandy texture, but does not change colour.
- Add the boiled milk little by little in this mixture while stirring continuously. Mix and cook for few minutes. This mixture thickens with cooking and forms the basic white sauce – Béchamel. It should be of coating consistency, silky texture and white in colour. Add salt and white pepper powder to taste.

Puree of carrots soup

Serves – 4 portions

S.No.	Ingredient	Quantity
1	Carrot	250 gms
2	Onion	25 gms
3	Garlic	2 cloves
4	Salt	To Taste
5	Black pepper corns	To Taste
6	Butter	10 gms
7	Sugar	½ T. sp.
8	Parsley / Mint	10 gms



Method:

- Wash all the vegetables.
- Peel and chop onion, garlic and carrots.

- Melt butter in a pot.
- Add chopped onion, garlic, bay leaf & crushed pepper corns.
- Sauté to a light colour on medium flame.
- Add carrots and again cook for few minutes.
- Add salt, sugar, water or vegetable stock sufficient to cover all the vegetables and simmer till all vegetables are tender.
- Cool. Blend in a mixer.
- Strain the blended mix and keep the liquid (soup).
- Reheat the strained carrot soup. Adjust consistency and seasoning.
- Garnish with fine chopped parsley or mint leaves.

Note: The soup can be flavoured further by adding little ginger juice or may be combined with orange juice. Croutons can also be served for the crunch.

Chicken Velouté

Serves – 4 portions

S.No.	Ingredient	Quantity
For fresh Chicken stock		
1	Onion / Leeks	70 gms
2	Carrot	70 gms
3	Water	1 ½ litre
4	Garlic	10 gms
5	Celery stem	12 gms
6	Parsley stem	6 gms
7	Chicken bones	600 gms
8	Thyme (dry)	2 gms
9	Bay leaf	1 no
For soup		
10	Butter	30 gms
11	Fresh cream	40 ml
12	Eggs	1 no
13	Refined flour	25 gms
14	Chicken stock	750 ml
15	Onion / Leeks	50 gms
16	Carrot	30 gms
17	Garlic	1-2 cloves
18	Thyme	A Pinch
19	Salt	To taste
20	White pepper powder	To taste



Method:

- White chicken stock: Add washed and cleaned chicken bones, chunks of onion / leek, carrot, celery stem, parsley stem, thyme, crushed garlic and bay leaf in a pot. Cover with water. Bring to boil and simmer. Remove any scum formed at the top. Simmer to reduce to nearly half. Cool. Strain and keep aside as Chicken Stock. (You can prepare stock and freeze for later use)
- For preparing soup, chop onion, leeks, carrot and garlic.

- Take a pot. Add butter. Melt.
- Add chopped vegetables. Sauté without colouring.
- Add refined flour. Keep stirring on a medium flame and cook together to form a blond *roux*. (the flour should turn golden brown and aromatic).
- Add chicken stock while stirring continuously to avoid lump formation.
- Simmer together for about fifteen minutes. Add salt and pepper.
- Strain to get a velvety consistency soup.
- Return the soup to flame.
- Mix together egg yolk and cream. This mixture is called *liaison*.
- Add *liaison* to the soup while stirring. Do not boil else it would curdle.
- Serve hot.

Note: You can enrich the soup using almond milk. Boil and remove skin of almonds. Grind to a milky consistency and add to the soup. You can also add small pieces of cooked chicken in the soup.

GAZPACHO

S.No.	Ingredient	Quantity
1	Tomato (ripe and red)	400 gms
2	Black pepper powder / Tabasco sauce	To taste
3	Cucumber	50 gms
4	Red bell peppers	50 gms
5	Garlic	20 gms
6	Fresh Basil leaves	2 no.
7	Salt	To taste
8	Olive oil	25 ml
9	White wine vinegar	½ t sp.



Method:

- Cut bell pepper. Remove seed and inner white core well. Chop. Roughly chop cucumber.
- Blanch tomatoes. Discard the skin. Remove the seeds and make concassé of the tomato.
- Chop the seed and pulp around it and strain well to extract tomato juice. Keep the juice and discard only the seeds.
- In a bowl combine together olive oil, garlic, white wine vinegar, salt, basil leaves and crushed peppers. Mix well.

- Add vegetables and preferably leave overnight in refrigerator.
- Grind to a smooth paste in a blender. Add ice to chill.
- Garnish with some cubed cucumber, tomatoes and chopped basil leaves.

Note: For correction of consistency and colour, add some tomato juice. If soup is thin, add a slice of bread while grinding.

Summary

Soups are liquid foods made with vegetables or meats and flavoured with herbs and spices. They are a healthy start to a meal as they are light, easily digestible and full of nutrients. Soups can be classified as Thick or Thin soups. Apart from this there are international soups that have been identified by the place of their origin such as Mulligatawny, minestrone etc. Even though most soups are served hot, there are many popular soups that are served cold such as Gazpacho.

Q.1. Define soups. Why should soups be included in diet?

Q.2. Classify soups. Write the unique features of various types of soups.

Q.3. List the thickening agents used in soups.

Q.4. What do you understand by following terms:

- a) Consommé
- b) Seasoning
- c) *Mirepoix*
- d) *Roux*

Q.5. What are traditional accompaniment of soups.

UNIT 11 - EGG COOKERY

Objectives

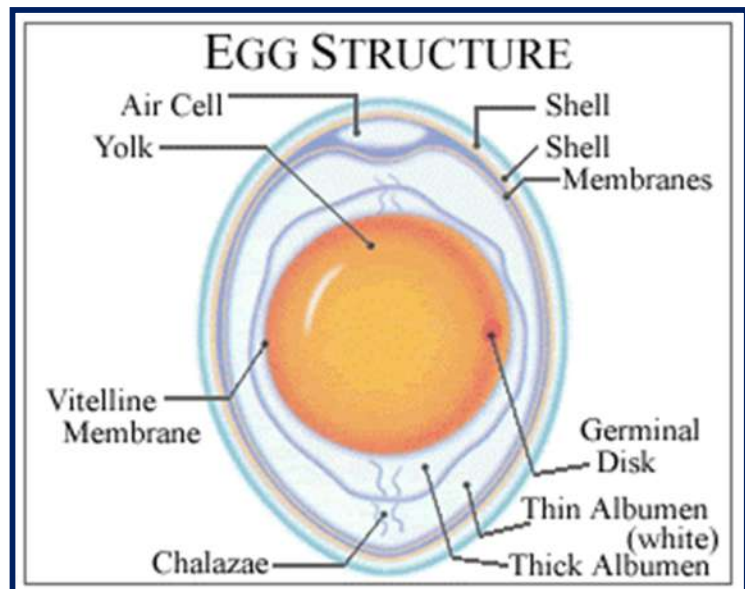
- To list the varieties of eggs used in cooking.
- To draw and explain the structure of an egg.
- To enumerate uses of egg in cookery.
- To describe selection criteria and storage of an egg.
- To prepare Boiled eggs, Scrambled eggs, Fried eggs, Poached eggs and Omelettes.

Introduction to egg cookery: Egg is a very versatile animal product. They are eaten all over the world in various forms – boiled, fried, scrambled, omelette etc. The most popular and widely used eggs are of hens in India although eggs of turkeys, guinea fowls, ducks and geese are also used. Fish eggs are sold as Caviar and are considered a delicacy in many parts of the world. They are a rich source of proteins and minerals.

Eggs from various animals vary in size, colour and taste. Most of them are oval in structure.

Structure of an egg

- 1 **Egg shell** – The shell of an egg is made of porous calcium. It is available in various colours depending on the species of animal. It's porous nature not only allows it absorb flavours, but also it lets the moisture go out. This is why older eggs have a larger air cell due to moisture losses over time. The egg shell has two transparent **shell**



- membranes on the inner side. They act as a protective barrier and an **air cell** is formed between them.
- 2 **Egg white** – This is mainly water, protein (albumin) and sulphur apart from other minerals. Egg white is thicker around yolk and thins away from it.

- 3 **Egg yolk** – The yellow portion of the egg is termed as the egg yolk. This is mainly fat and protein (lecithin) and also contains vitamins. Colour of yolk may vary a little from the breed and diet of the bird. It has a **germinal disk** for embryo development. It is surrounded by a clear membrane termed as **vitelline membrane** which holds it together.
- 4 **Chalaza** – A twisted cord like structure that holds the egg yolk in the centre of the egg and works as an anchor for egg yolk in egg white.

Gradation of eggs: According to the quality of eggs, they can be graded as:

- 1 AA: It is the fresh and best quality egg
- 2 A: Good
- 3 B: Medium
- 4 C: Lower quality
- 5 Standard weight of an egg is 50-55gms

Storage of eggs:

Storage should be done at 2°C but away from strong smelling ingredients such as onion, fish etc. This is because egg shell being porous, it tends to absorb strong aromas.

Selection of eggs:

- 1 A fresh egg when dropped in a bowl full of water sinks. If it floats in the water, it is stale.
- 2 When seen against candle or light source, the yolk should appear in the centre of the egg. As egg ages, the egg white becomes thin in consistency and the chalazae are unable to hold the yolk in the centre.
- 3 If we break an egg, there should be prominent chalazae and clear distinction between yolk and white. If yolk tends to mix with the white, it indicates older eggs. Similarly, thin and thick egg whites also tend to mix with each other as the egg ages.

Uses of egg in cookery

- 1 Acts as a binding agent – They can be added to any mixture to help it bind together. Eggs are also used in coating Croquettes with bread crumbs, minced meats etc and holds the ingredients together while frying.
- 2 Acts as emulsifiers – Egg proteins can wrap themselves around tiny globules of oil / butter and make an emulsion such as in making sauces Mayonnaise, Hollandaise.
- 3 Acts as a leavening agent. By beating the egg white, foam is made which are air bubbles surrounded by a thin elastic film of egg white. This mixture, when added to products such as sponge cakes, meringues, soufflés etc increases the volume and the egg white film hardens. Addition of sugar to

egg whites, makes it stable, smooth and the foam does not collapse easily.

- 4 Acts as main ingredient in bakery products due to all above qualities in preparing sweets such as mousse, egg custard, pastry creams etc and various types of cookies.
- 5 Adds to the nutritive value of preparations.
- 6 Used for decoration and garnishing of dishes.
- 7 Acts as thickening agent such as in liaison in soups.
- 8 Colour & flavour to various dishes (egg wash on breads)
- 9 Eggs can be boiled and cooked with a gravy to form main course egg curry.
- 10 Eggs are cooked on their own in a variety of ways to form a popular breakfast.

Methods of cooking egg –

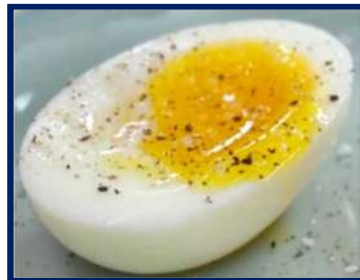
Eggs are dominantly made up of proteins. Egg white coagulates at 60°C while egg yolk coagulates at 65°C. Over cooking causes formation of green coloured ring between yolk and white as the sulphur of egg white and iron of yolk forms ferrous sulphide. Best category of eggs are used for frying and poaching. Good quality eggs are used for omelettes and scrambled eggs.

<u>Method</u>	<u>Types</u>	<u>Description</u>
Boiled Eggs	Hard boiled	10 – 12 minutes simmering
	Soft boiled	3-5 minutes simmering
Fried Eggs	Sunny side Overeasy	Cooked in a pan with little oil / butter. The egg can be cooked on one side, cooked under salamander for top heat or even turned over and cooked on both sides.
	Turnover	
Poached eggs	_____	Cooked in water with vinegar and salt.
Omelettes	_____	Cooked in butter in a frying pan incorporating air using fork. Can be stuffed with cheese, vegetables etc and may be named after the stuffing. Eg. Mushroom omelette. One can prepare sweet

		omelettes too.
Scrambled	_____	Cooked with little milk in butter in a sauce pan.

Practical

1. Boiled eggs:



Soft boiled egg

Hard boiled egg

(notice the soft yellow centre and the hard yolk)

Take out eggs from fridge and keep aside to come to room temperature. Boil water in a pan sufficient to cover the eggs. Add a spoon of salt and lower the flame to let it simmer. Add eggs. Let the eggs simmer gently (no furious boiling) for 3 to 5 minutes for soft boiling and 10 to 12 minutes for hard boiled ones. Remove from the water. Shell, cut and sprinkle salt and pepper powder.

2. Fried Eggs:

Break an egg in a small bowl without breaking or mixing the yolk and white. In a pan heat a table spoon of butter/oil. Let it get a little hot. Slide the egg on it so as not to break or mix yolk and white. Let it cook gently till the sides begin to curl and become brown. Sprinkle some salt and pepper powder. This is called **Sunny side up** where egg white is cooked and yolk is slightly cooked.

If we keep this under salamander applying heat only from the top, the thin layer of albumen will cook over the yolk and form a whitish layer. Inside the yolk will be slightly cooked. This is called **Over Easy**.

If we flip the sunny side in the pan and cook the other side as well we get **Turned over** fried egg. In this both yolk and white are cooked.



3. Poached Eggs:

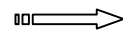
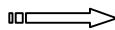
Take water in a pan (approx 1 cm depth of water – shallow). Add a spoon of vinegar and pinch of salt to it. Bring to boil and simmer (no agitation in water). Place a ring or a fancy mould meant for poaching egg in a desired shape.



Break an egg in a small cup without mixing egg white and yolk. Carefully slip the egg in the mould kept in the simmering water. Let the egg cook gently without disturbance in the simmering water. When done, lift the mould and remove eggs using a perforated spoon from the pan. Let the excess water drain. Keep on absorbent paper and sprinkle salt and pepper powder.



4. Omelette: Break two eggs in a bowl. Add salt, pepper powder, chopped chives and whisk till the mixture is thick and fluffy. Heat little butter in a pan. Pour the egg mixture. Let the egg set a little at the bottom of the pan. Use fork to push the set parts of egg up and the still liquid part towards pan's surface. Be careful not to break the omelette. Once the egg is set, turn over and cook on both sides OR fold in a half moon shape for a softer / juicier version.



5. Scrambled egg:

Break two eggs in a bowl. Add pinch of salt and pepper powder. Add a little chopped coriander and two spoonful of milk. Whisk till foamy. Melt a little oil/butter in a pan. Add the mixture and gently mix with a fork while stirring occasionally till the egg nearly sets. Remove from pan. Keep it soft and juicy.



Summary

Egg is a versatile culinary ingredient. Eggs of various animals such as hen, guinea fowl, ducks and geese are eaten all over the world. An egg is made up of an outer shell with two layers of membranes towards inside. It has a central yolk and surrounding egg white. Chalazae hold the yolk in the centre of the egg. Eggs can be cooked in various ways such as boiled, fried, poached, scrambled or as omelettes. They are nutritious, rich in proteins and form an important part of breakfast, main course or bakery.

-----Exercise-----

- Q.1. Explain the structure of an egg with the help of a neat diagram.
- Q.2. List and explain the ways in which an egg can be cooked?
- Q.3. How would you identify if the egg is fresh or not?
- Q.4. What do you understand by following terms:
- e) Leavening agent
 - f) Emulsifier
 - g) Binding agent
- Q.5. Enumerate the uses of eggs in cookery.