FOOD PRODUCTION & PATISSERIE–II (Theory)

Name of the Programme	Duration	Semester	Course/ Course Code
B.Sc. in Hospitality Studies	Six Semesters	II	Food Production & Patisserie-II(USHA 201)
Course Code	Title	Credits	
USHA102	Food Production & Patisserie-I	2+2	

For Course Per week 1 lecture/period is 60 minutes duration				For Subject per week 1 lecture/period is 60 minutes duration			
	Theory	Practical					
Actual Contact	3	4					
Credit	2	2					

Class Room Instruction Face to Face									Notional				Credits			
Per Week			Per Sem			Per Sem Hrs										
L	P	T	L	P	T	L	P	T	L	P	T	Total	L	P	T	Total
3	4	-	45	60	-	45	60	-	25	10	-	140	2	2	-	4

OBJECTIVES:

- To develop a keen interest in food production and to enable students to experiment, innovate and progressively produce a variety of preparation / dishes.
- To gain confidence to adapt to the technical skills and the art of preparing different menus, Indian as well as Continental.
- By the end of the second semester students should be confident enough in their skills which would boost their morale to take up the challenge of bulk cookery in the third and fourth semester.

UNIT 1: - 15 Hours.

UNIT NO.	Ch. No.	TOPIC
01	1	**Culinary Terms with Explanation & Examples**
	2	**Layout of Kitchen** 2.1 General Layout of the Kitchen 2.2 Receiving Area 2.3 Storage 2.4 Wash up
	3	**Soups** 3.1 Classification with Examples 3.2 Consommé and Garnishes with their names (Any 10 common name)
	4	**Fish Mongery** 4.1 Classification of Fish with examples 4.2 Selection, Cooking & Storage of Fish 4.3 Local Names of Fin Fish and Shell Fish 4.4 Cuts of Fish
	5	**Poultry** 5.1 Cuts of Poultry

5.2 Selection and Uses of Cuts

6 Rice, Cereals & Pulses

6.1 Introduction, Classification of Cereals and Pulses
6.2 Varieties of Rice and Byproducts
6.3 Nutritive Value of Various Cereals
6.4 Sprouts and Uses

UNIT 2: - 15 Hours.

UNIT NO.	Ch. No.	TOPIC
02	7	**Meat**
		7.1 Introduction to Meat Cookery
		7.2 Cuts of Lamb, Pork, Beef / Veal
		7.3 Variety of Meats / Offal
		7.4 Selection and Storage of Meats
	8	**Milk and Milk Products**
		8.1 Introduction, Processing of Milk, Pasteurization, Homogenization, Milk in Various Forms e.g. Toned, Powder, Skimmed, Condensed & Evaporated.
		8.2 Cream – Introduction, Processing & Types
		8.3 Butter – Introduction, Processing & Types
		8.4 Cheese – Introduction, Classification with Examples, Processing, Types, Cooking with Cheese and Uses.
	9	**Bakery & Pastry**
		Shortening – Fats and Oils
		9.1 Saturated and Un-saturated Fats
		9.2 Advantages & Disadvantages of Using Fats
		9.3 Varieties of Shortening
	10	**Tea & Coffee**
		10.1 Introduction
		10.2 Producing Regions/Country
		10.3 Types and Methods of Preparation
		10.4 Popular Brands and Variety Available
	11	**Thickening Agents used in Indian Gravies**
		11.1 Role of Thickening Agents

UNIT 3: - 15 Hours.

UNIT NO.	Ch. No.	TOPIC
03	12	**Indian Cookery**
		12.1 History of Spices and Trade Routes
		12.2 Basic Spices, Condiments and Masalas
		12.3 Role of Spices in Indian Cuisine
		12.4 Indian Equivalent name
		12.5 Blending of Spices
		12.6 Concept of Wet and Dry Masalas
		12.7 Regional Varieties of Basic Masalas
		12.8 Basic Composition of Some Important Masalas
	13	**Menu Planning**
		13.1 History of Menu
		13.2 Types of Menu
		13.3 Menu Planning Principles

14 Bakery & Pastry

14.1 **Pastries**

- Classification of Pastries
- Varieties
- Role of Each Ingredient
- Baking Temperature and Time of Each Pastry

14.2 **Pastry Cream**

- Basic Pastry Cream
- Use in Confectionery
- Preparation and Care in Production

14.3 **Cocoa and Chocolate**

- Introduction, Production and Manufacture
- Varieties of Chocolates
- Tempering of Chocolates

Culinary Terms
(Explanation of the following Culinary Terms with examples)

1. Bhurta	2. Baghar	3. Bain Marie
4. Bisque	5. Bortsch	6. Brioche
7. Canapés	8. Choux	9. Cisel
10. Compote	11. Concasse	12. Condiments
13. Croissant	14. Darne	15. Force Meat
16. Garniture	17. Gateaux	18. Genoese
19. Hors d' oeuvre	20. Larding	21. Macedione
22. Matignon	23. Mousse	24. Mousseline
25. Panada	26. Paneer	27. Pimento
28. Khoya	29. Potage	30. Pot Pourri
31. Ragout	32. Rechauffe	33. Roe
34. Royal	35. Royale	36. Saffron
37. Sear	38. Seasoned Flour	39. Soufflé
40. Stew	41. Supreme	42. Kofta
43. Tronçon	44. Zest	

REFERENCE BOOKS

1. Thangam Philip – Modern Cookery I & II – Orient Longman – 2001
2. Auguste Escoffier – Ma Cuisine – Hamlyn – 2000
3. Digvijay Singh – Cooking Delight of the Maharajas – Vakils, Feffer & Son's Ltd. – 1982
4. Philip Dowell & Adrian Barley – The Book of Ingredients – Mermaid Books – 1987
5. Wayne Gisslen – Professional Baking – John Wiley & Sons – 1994
6. Martha Day – Baking – Lorenz Books – 1999
7. M. J. Leto & Bode – The Larder Chef – Heinemann Publishing House – 1989
8. Parvinder S. Bali - Food Production Operations
9. Thangam E. Philip - Modern Cookery for Teaching and Trade - 4th Vol. - 1996
10. Krishna Arora - Theory of Cookery – 2nd – 1992
11. Wayne Gisselen - Professional Cooking – 4th – 1992
12. Wayne Gisselen - Professional Baking – 2nd – 1994
13. J. C. Dubey - Basic Bakery - 1st – 1992
14. Kinton Ceserani - Theory of Catering – 7th – 1996
15. Bernard Davis - Food Commodities - 4th – 1998
16. Daniel R. Stevenson - Basic Cookery The Process Approach - 5th - 1997

(Practical - Bakery)

Sr.	Topic
1	**Breads** • Cheese & Garlic Bread • French Bread • Brioche
2	**Pastries** • Flaky Pastry • Puff Pastry (Cheese Straws) • Quiche • Danish Pastry
3	**Cakes** • Yule Log • Fruit Cake • Chocolate Brownies • Marble Cake
4	**Cookies** • Peanut Cookies • Chocolate Chip Cookies • Coconut Macaroons
5	**Chocolate Rocks**

(Food Production Practical)

Sr.	Topic
1	**Suggested Menu Patterns** • Indian Menus • Continental Menus

PRACTICAL MENU

I	**Snack Menu**	
	Non-Veg	**Veg.**
	1. Chicken / Beef Burgers 2. Chicken Grilled Sandwich 3. Chicken Pizza 4. Kheema Samosa 5. Mince Meat Croquettes 6. Shami Kabab 7. Chicken Lollypop 8. Fish Fingers	1. Veg. Burger 2. Veg Grilled Sandwich 3. Veg. Pizza 4. Punjabi Samosa 5. Chutney Pattice 6. Chillie Cheese Toast 7. Aloo Chat 8. Wada
	Accompaniments: Green / Red / Tamarind Chutney, Tartare Sauce, Hot Garlic Sauce, Tomato Sauce	
II	**Salads**	
	1) Tossed Salad with French Dressing 2) Waldorf Salad 3) Palak / Pineaple / Anar Raita 4) Chicken Hawain Salad 5) Salad Caprese 6) Ceasar Salad	

III	**Soups**	
	1) Consommé Jacqueline / Celestine 2) Soupe à l' oignon à la François 3) Puree Lentils 4) Crème de Volaille 5) Soupe Cockie Leekie 6) Soupe Vichyssoise 7) Sea Food Chowder 8) Gazpacho 9) Mulligutwany	
IV	**Poisson**	
	1) Fried Fish with tartare Sauce 2) Grilled Fish with Hollandaise Sauce 3) Baked Fish in Provencale Sauce 4) Fillet de Pomfret Cubat 5) Goan Fish Curry	
V	**Poulet**	
	1) Poulet à la Rex 2) Poulet Sauté Mireille 3) Poulet Sauté Parmentier 4) Masala Roast Chicken 5) Murg Khorma	
VI	**Entrees**	
	1) Scotch Eggs 2) Spaghetti Bolognaise 3) Grilled Steaks with Pepper Sauce 4) Barbeque Pork Chops with Robert Sauce 5) Goulash de Boeuf à la Hongroise 6) Mutton Nilgiri Khorma 7) Mutton Rogan Josh	
VII	**Entremettes**	
	1) Mixed Vegetables Bhujiya 2) Baingan Bharta 3) Muttar Kumbh Masala 4) Courge Provencale 5) Corn and Pepper au gratin	6) Boquetier de Legumes 7) Aubergine à la Turque 8) Spaghetti with Mushroom & Cheese Sauce 9) Cheese and Cauliflower Soufflé 10) Baked Spinach
VIII	**Potatoes**	
	1) Pommes de terre Croquettes 2) Jacket baked Potatoes 3) Pommes Chateau 4) Pommes Marquise	5) Gratin de Pommes de terre Dauphinoise 6) Bubble and Squeak 7) Garlic & Herb Roast Potatoes 8) Soufflé de Pommes de Terre
IX	**Cereals & Pulses**	
	1) Aloo ki Tihari 2) Pea Pulao 3) Riz Pilaf 4) Makhani Dal 5) Dal Fry 6) Moong Dal with Palak	
X	**Rotis & Parathas**	
	1) Satpura Parathas 2) Dhakai Parathas	

	3) Missie Roti 4) Chapati
XI	**Hot Dessert**
	1) Gajar / Beetroot Halwa 2) Shahi Tukra 3) Christmas Pudding with Custard Sauce 4) Crêpe Suzette
XII	**Cold Dessert**
	1) Blancmange 2) Fruit Triffle 3) Chocolate Mousse 4) Diplomat Pudding 5) Chocolate / Vanilla Panacotta

Scheme of Examination (Theory)
(a) Internal assessment- 25 marks

Sr. No.	Evaluation type	Marks
1	One class test (multiple choice questions objective)	20
2	Active participation in routine class instructional deliveries (case studies/ seminars/ presentation) Overall conduct as a responsible student, manners, skill, in articulation, leadership qualities demonstrated through organizing co-curricular activities, etc.	05
	Total	25

(b) Semester end examination (Pattern of Question Paper):-

Theory

First Semester (Duration 2 1/2 hrs.)		
Questions in Examination Paper	Units	Maximum Marks
Q – 1	1, 2,3	15
Q - 2	1	15
Q - 3	2	15
Q - 4	3	15
Q -5	1,2,3	15
Total		75

- Question no. 1 should be of objectives fill in the blanks, match the following, odd man out. Definitions – no choice
- Question 2, 3 & 4 should be from topics mentioned in the table total 3 sub questions to be attempted of 5 marks each out of the choice of 6 sub questions.
- Question No 5 should be short notes. Any 3 from a choice of 4.

Conduct of Practical Examination

- Candidate will be given a menu comprising of 4 dishes.
- Indent sheet and plan of work sheet to be filled by the candidate of the menu he gets.
- He / she supposed to collect indents, prepare and present the dishes in the menu within stipulated time.
- Cleaning and securing equipments and working area is also to be done within stipulated time.

Assessment will be done as follows –

Journal	Indent Sheet & plan of work	Colour	Consistency /Texture	Taste	Presentation	Viva	Personal Grooming,	Cleaning & Securing
5	10	5	5	5	5	5	5	5

UNIT 1

1 *Culinary Terms with Explanation & Examples*

1. ***Bhurta****- Bhurta or bharta is a lightly fried mixture of mashed vegetables (chakata) in the cuisine of India, Bangladesh and Pakistan.*

2. ***Baghar****- Whole spices are dropped into oil to infuse. This technique of tempering is called Baghar, Tadka or Chonk.*

*3****. Bain Marie****- A pan of hot water in which a cooking container is placed for slow cooking.*

4. ***Bisque****- Bisque is a smooth, creamy, highly seasoned soup of French origin, classically based on a strained broth of crustaceans. It can be made from lobster, crab, shrimp or crayfish.*

*5****. Borscht****- Borscht is a sour soup popular in several Eastern European cuisines, made from a base ingredient of beetroot which also gives it its distinctive red colour.*

6. ***Brioche****- Brioche is a pastry of French origin that is similar to highly enriched bread, and whose high egg and butter content gives it a rich and tender crumb.*

7. ***Canapé****- A canapé is a type of horsd'œuvre, a small, prepared and usually decorative food, consisting of a small piece of bread or puff pastry or a cracker topped with some savoury food, held in the fingers and often eaten in one bite.*

*8****. Choux****- Choux pastry, or pâte à choux, is a light pastry dough used to make profiteroles, croquembouches, éclairs, St. Honore cake; contains only butter, water, flour and eggs. Instead of a raising agent, it employs high moisture content to create steam during cooking to puff the pastry.*

9. ***Cisel-*** *To cut a vegetable after the manner of a chaff cutting machine.*

10. ***Compote-*** *A compote is a recipe consisting of some sort of fruit, fresh or dried, that has been stewed in syrup of sugar and other flavorings. The fruit in compote can be whole or puréed. When compote is made with dried fruit, the fruit is typically soaked in water first. Compote recipes are sometimes made with brandy, rum or liqueur. Fruit compote is frequently made from figs, pears, apples, plums, berries, or even rhubarb. Compote recipes usually include other flavorings, such as vanilla, cinnamon or cloves.*

11. ***Concasse****- Concasse, from the French concasser, "to crush or grind", is a cooking term meaning to rough chop any ingredient, usually vegetables. This term is particularly applied to tomatoes, where tomato concasse is a tomato that has been peeled, seeded (seeds and skins removed), and chopped to specified dimensions.*

*12****. Condiments****- A condiment is a spice, sauce, or, preparation that is added to food to impart a particular flavour, to enhance its flavour, or in some cultures, to complement the dish. The term originally described pickled or preserved foods, but has shifted meaning over time.*

13. ***Croissant-*** *A croissant is a buttery, flaky, viennoiserie-pastry named for its well-known crescent shape. Croissants and other viennoiserie are made of layered yeast-leavened dough.*

14. ***Darne****- Darne or steak is a thick, cross-section cut from a round fish, perpendicular to the spine. Darne or steaks often retain part of the backbone.*

15. ***Force Meat-*** *Forcemeat is a mixture of ground, lean meat mixed with fat by grinding, sieving, or pureeing the ingredients. The result may either be smooth or coarse, depending on the desired consistency of the final product.*

16. ***Garniture****- Garniture consists of ingredients that are added to a dish during, or near the end of, cooking and therefore become an integral part of the dish.*

17. ***Gateaux****- Typically in French, a rich cake, typically one containing layers of cream or fruit.*

18. ***Genoise****- A genoise is an Italian sponge cake named after the city of Genoa. It is a whole-egg cake, beaten with sugar and heated at the same time, using a baine-marie or flame, to a stage known to patissiers as "ribbon stage."*

19. ***Hors d'oeuvre****- An hors d'oeuvre, appetizer, or starter is a small dish served before a meal. Some hors d'oeuvres are served cold, others hot. Hors d'oeuvres may be served at the dinner table as a part of the meal, or they may be served before seating.*

20. ***Larding****-* ***larding*** *is a culinary technique for preparing large cuts of meat in which long strips of fat are woven through the meat using a needle called a larding needle. It enhances the moisture of the meat while it cooks and also adds flavor*

21. ***Macedione****- A cut of vegetables or fruit cut into small dices. The small sized cube* ***cut****,* ***Macédoine*** *is ¼" wide, ¼" tall and ¼" long, (.635 cm long by .635 cm by .635 cm)*

22. ***Matignon****- A matignon is a mirepoix in which the ingredients are minced rather than diced, and more flavouring added. Matignon, unlike mirepoix, is not a part of the food preparation, but is always served at the table.*

23. ***Mousse****- A mousse is a prepared food that incorporates air bubbles to give it a light and airy texture. It can range from light and fluffy to creamy and thick, depending on preparation techniques. A mousse may be sweet or savoury.*

24. ***Mousseline****- a. A sauce to which whipped cream or beaten egg whites have been added to give it a light, airy consistency. Mousseline sauce is hollandaise sauce with whipped cream added.*
b. Various dishes made with pureed meat, fish, or foie gras to which whipped cream or beaten egg whites are added to lighten its texture.

25. ***Panada****- A paste that may be used as an ingredient or a binder which is made by mixing various items such as bread crumbs, cubes of bread, flour, rice, or dry milk powder with water, stock, milk, egg yolk, egg whites, or butter. The paste is then used to bind other foods such as ground or minced meats, forcemeats, poultry, fish, vegetables, and quenelles as they are prepared and made into a food dish.*

26. ***Paneer-*** *Paneer is a fresh cheese common in South Asia, especially in Indian, Pakistan ,etc cuisines. It is an unaged, acid-set, non-melting cheese made by curdling heated milk with lemon juice, vinegar, etc.*

*27. **Pimento-** A pimiento, pimento, or cherry pepper is a variety of large, red, heart-shaped chili pepper that measures 7cm long and 5 cm wide. The flesh of the pimiento is sweet, succulent, and more aromatic than that of the red bell pepper. Pimiento peppers are also the familiar red stuffing found in prepared, Spanish, green olives.*

*28**. Khoya-** Khoa or khoya is a dairy product widely used in South Asian cuisine of India, Nepal, Bangladesh and Pakistan. It is made of either dried whole milk or milk thickened by heating in an open iron pan.*

*29. **Potage**- Potage is a category of thick soups, stews, or porridges, in some of which meat and vegetables are boiled together with water until they form into a thick mush.*

*30. **Pot pourri**- A French stew of meat and vegetables.*

*31**. Ragout**- A highly seasoned dish of small pieces of meat stewed with vegetables.*

*32. **Rechauffe**- A dish of warmed-up food left over from a previous meal.*

*33. **Roe**- Roe or hard roe is the fully ripe internal egg masses in the ovaries, or the released external egg masses of fish. As a seafood, roe is used both as a cooked ingredient in many dishes and as a raw ingredient. Roe from a sturgeon fish is the raw base product from which caviar is made.*

*34**. Royal**- In English is sometimes used to add a touch of glamour or elegance to the name of a dish.*

*35. **Royale**-An egg custard cooked and set in a mold, cut into various shapes when cold, and added as a garnish to clear soups*

*36. **Saffron**- Saffron is a spice derived from the flower of Crocus sativus, commonly known as the "saffron crocus". Saffron crocus grows to 20–30 cm in height and bears up to four flowers, each with three vivid crimson stigmas. The stigmas, called threads, are collected and dried to be used mainly as a seasoning and colouring agent in food. Saffron, long among the world's most costly spices by weight, is native to southwest asia.*

*37. **Sear-** Searing (or pan searing) is a technique used in grilling, baking, braising, roasting, sautéing, etc., in which the surface of the food (usually meat, poultry or fish) is cooked at high temperature until a caramelized crust forms.*

*38. **Seasoned flour**- Seasoned flour is flour to which flavouring has been added. It is used for dredging and coating. The flavouring is usually in a dry or solid form, as opposed to liquid. The most common seasoning base is just salt and pepper, but paprika, dried or chopped fresh herbs, are also often added.*

*39. **Souffle**- A soufflé is a baked egg-based dish which originated in France. It is made with egg yolks and beaten egg whites combined with various other ingredients and served as a savoury main dish or sweetened as a dessert. The word soufflé is from the of the French verb souffler which means "to breathe" or "to puff".*

*40. **Stew-** A stew is a combination of solid food (like meat and vegetables) ingredients that have been cooked in liquid and served in the resultant gravy.*

*41. **Supreme-** A supreme is a prime boneless cut from a fillet or loin, and is considered the best and choicest cut of a fish.*

*42**. Kofta-** Kofta is a family of meatball or meatloaf dishes found in South Asian, Middle Eastern, cuisine. Koftas are usually made with meat mince and cooked in spicy gravy and eaten with rice.*

*43. **Troncon**- It is a thick, cross-section cut from a flat fish, perpendicular to the spine.*

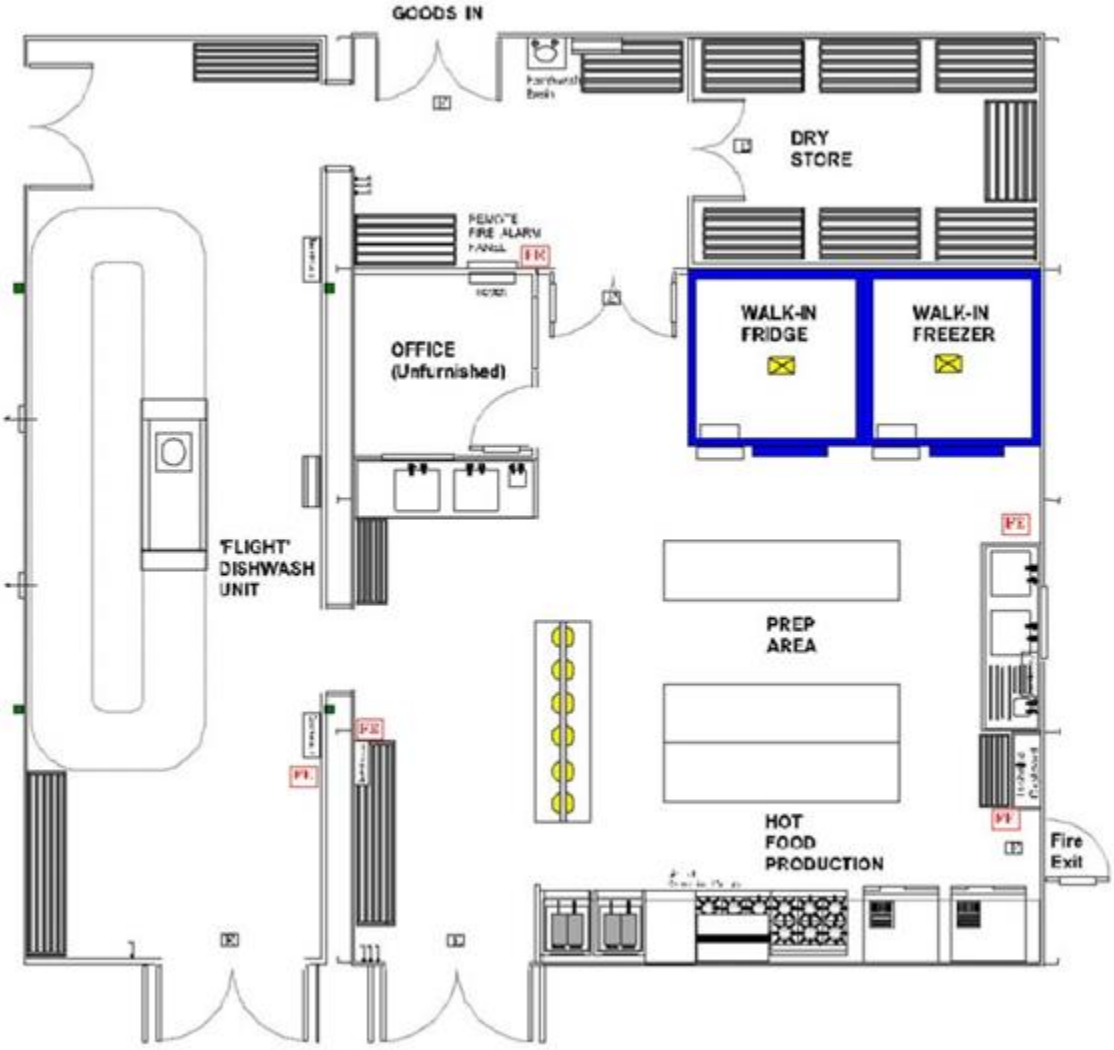
*44. **Zest-** Zest is a food ingredient that is prepared by scraping or cutting from the outer, colourful skin of unwaxed citrus fruits such as lemon, orange, and lime. Zest is used to add flavour to foods.*

2 Layout of Kitchen

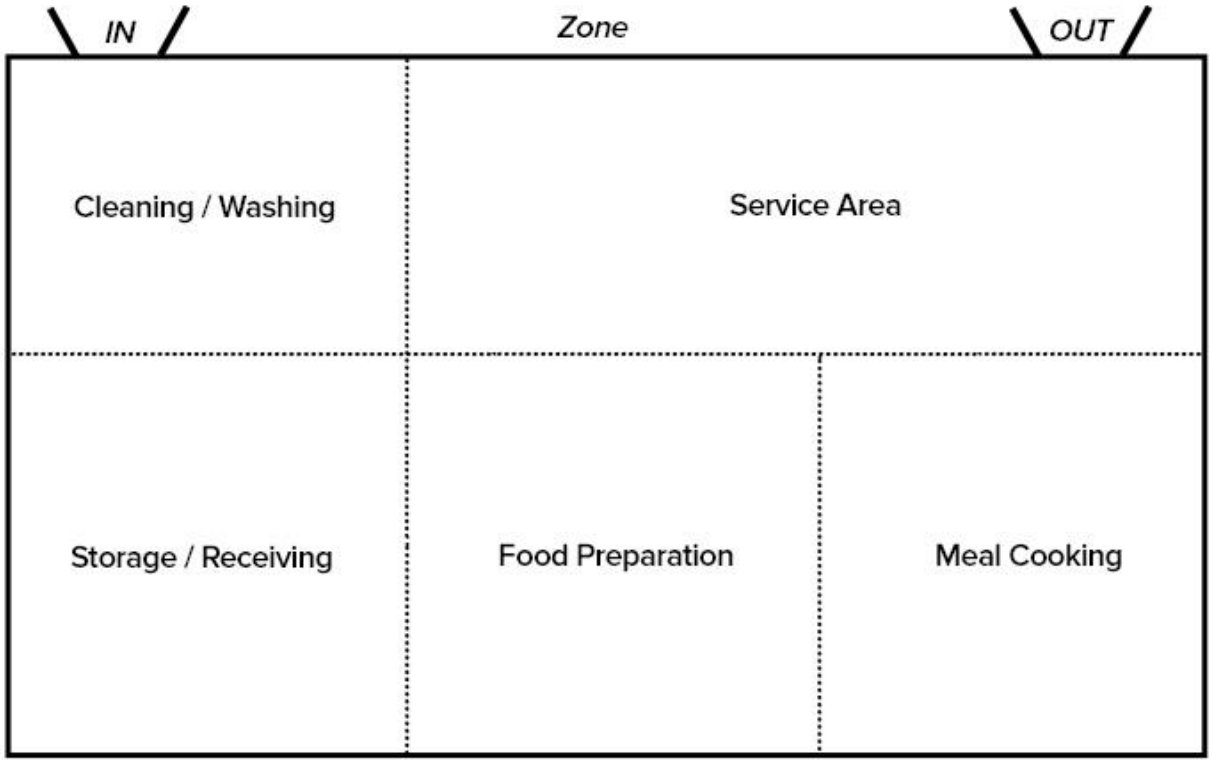
2.1 General Layout of the Kitchen

There are four basic types of kitchen layout

1. **Wall Layout**, where the refrigerator, sink, and range is located along the wall in a straight line.
2. **Corridor Layout**, which has stations on both sides of a narrow hallway with about a walkway in the middle of only about 3-5 feet wide.
3. **"L" Layout**, which has two legs joined at one corner perpendicularly to form an "L".
4. **"U" Layout**, which as the name implies has the refrigerator, sink, and range arranged in an "U" format.



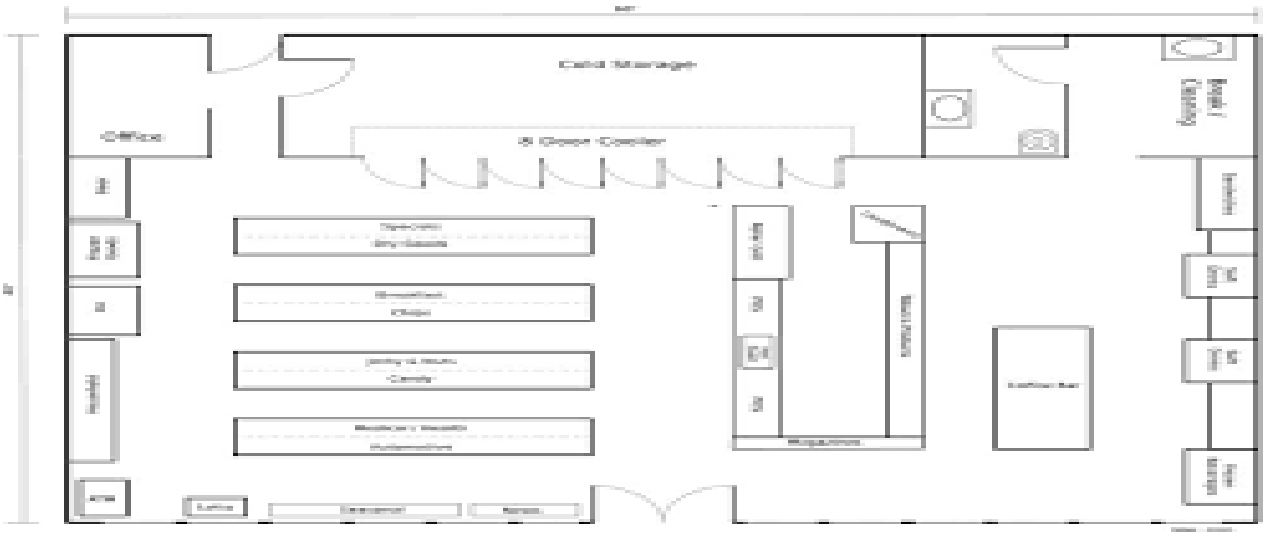
2.2 Receiving Area



Receiving involves verifying the authorization for goods received, as well as their quantity, quality, and condition.
The functions of receiving, at the foodservice location, products ordered from the purveyor is broken down into six components:

- Verify the quantities and price of products received to the purchase order and suppliers invoice
- Verify products to written specifications.
- Process the necessary paperwork and transfer it to stores and accounting
- Communicate non-shipment of products ordered to purchase order clerk
- Physically move goods into kitchen and stores.

2.3 Storage



The objective food storage are:

- Protect inventory from theft.
- Food inventory should be stored in an organized manner in a clean area.
- The storage system should let management know what is on hand.
- The system should minimize spoilage and waste.

The Storeroom (Dry Storage)

The dry storage room should have the following characteristics:

- There should be adequate space. The storeroom should be designed to handle the foodservice operations needs. Care should be taken the space is not too large as there may be a tendency to fill empty area. The space requirements should be based on the menu and frequency of deliveries. The general formula is 0.5 sq. feet per meal served or food requirements for two weeks
- The storeroom should be located reasonably close to the receiving and food production areas.
- Access to storeroom should be limited to storeroom personnel and management.
- Temperature, humidity and lighting considerations should be built in to the storeroom:

1. Since high temperatures can accelerate dry foods spoilage of temperatures need to be maintained in the 60 to 70 degrees F. range; 50 degrees is better
2. Maintain humidity to 50 to 60 percent.
3. Provide for air circulation, changing room air volume four times per hour.
4. Limit sunlight to prevent susceptible goods from spoiling; however maintain adequate light of 2 to 3 watts per sq. foot

- Arrange shelving and arrangement of contents with the following characteristics:

1. Required that goods be out of cartons.
2. Shelves should be adjustable and made of wood or metal.
3. Shelves should be no higher than 7.5 feet.
4. Bulk goods can be store on pallets 6 to 7 inches off the floor.
5. Keep goods off the walls and floor to facilitate circulation and cleaning; also prevents moisture absorption.
6. Store goods in an organized manner; use a numbering system such as classification on page 254 of the textbook.
7. Store goods to facilitate finding items and taking inventory.
8. Use the "f.i.f.o." system; provide for rotation; utilize date stamps.

- Protection from food products from vermin and insect:

1. Seal the room as tightly as possible.
2. Clean and spray on regular basis.
3. Leave no trash in the storage area.
4. Bulk cereals and other susceptible goods should be in tightly closed metal or plastic containers; keep labeled and on rollers.

In summary management should strive for the following:

1. A thermometer in storeroom to warn of high temperatures.
2. Maintain control of access to storeroom.
3. Date mark goods and rotate them on a "f.i.f.o." basis.
4. Store goods 6 to 10 inches above floor and 2 inches from wall.
5. Assign adequate space for each class of goods.
6. Keep the storeroom clean and spray on regular basis.
7. Keep clear glass goods out of sunlight.
8. Bulk goods should be kept in plastic containers, sealed tight and off the floor on rollers.

Refrigerated storage
There should be an adequate amount of refrigeration: (1) separate space for produce, meat and dairy; Temperature should be maintained as follows: meat, 32 to 36 F.; produce, 35 to 45 F., and dairy 38 to 46 F. Other refrigerated storage considerations are : keep the area clean, provide a germinal or ultraviolet radiation lamp for mold control; use a temperature alarm to avoid costly spoilage in case of refrigeration malfunction.

Frozen food storage
The following items should be followed in storing food in frozen storage:
Temperatures should be maintained in the 0 to 10 F range.
Food should be properly wrapped.
Do not refreeze frozen products that have thawed.
Consider the use thermal gauge to monitor freezer temperature.
Store products so as to provide "f.i.f.o." usage.

2.4 Wash up

The Wash up area is one of the most important areas in a kitchen, to ensure optimum clearance of the dirty dishes, crockeries and cutleries, the area needs to be positioned correctly in line with the service and the dining area.
All the dirty dishes, crockeries and cutleries can be collected through mobile closed trolleys and can be wheeled onto the wash up area.
Based on the type and the various items which are to be washed, they can be segregated and leftovers can be scrapped before wash up. The glasses will be sent to the glass washer for effective and clear wash. The large utensils from the Bain maries as well as the main kitchen and preparation areas could be sent to the pot washer.
Rest of all the dishes, crockeries etc. will be washed through the dishwasher.
We had discussed the various types of dishwasher as well as the flow chart of the dishwasher in my previous articles.

The following equipment's are used in this area:

Three sink unit.
Pre wash sink unit with waste disposer.
Receiving table with overhead shelf.
Rack type dishwasher.
Unloading zone.
Mobile shelving.
Glasswasher.

Once the dishes have been washed and dried, the same can be wheeled in a mobile shelving back to the storage area and once more the same cycle starts again on the next day.

LAYOUT OF KITCHEN DEPARTMENT

Q1 What do you understand by kitchen layout?
Q2 What is a standard purchase specification?
Q3 Which department does the planning of kitchen?
Q4 List the section of a western Kitchen?
Q5 What is a commissary kitchen & how is it useful?
Q5 Describe a main Kitchen?
Q6 List 5 advantages of show Kitchen?
Q7 What do you understand by a receiving area?
Q8 Describe work station?
Q9 Draw a flowchart of a well-planned kitchen?
Q10 Differentiate between workflow & workstation?
Q11 List 5 disadvantages of show Kitchen?
Q12 Prepare a layout of Bakery & Confectionary Kitchen?
Q13 List 5 parameters to keep in mind while planning a Display Kitchen?
Q14 Describe in brief “Chocolate Room”?
Q15 List equipment’s used in the butchery?
Q16 Explain the concept of show kitchen?
Q17 Draw a layout of a well-planned Store?
Q18 What are fast moving Items and slow moving Items?
Q19 Prepare a Layout of Garde Manger?
Q20 Prepare a layout of western Banquet Kitchen?
Q21 What should be done in case of emergency ordering?

3 Soups

Soup is derived from the Latin word ' SOP' which means bread. The old French term 'souppe' also means bread. Bread is the staple food, but in order to have bread a liquid is necessary to moisten the bread so that the same could be eaten with ease. Bread alone if eaten is too dry and makes one feel thirsty. Hence in olden days a liquid is often served with the bread, which in course of time is termed as 'soup' as we know today. Butter, which is served always with the bread, too serves the same purpose even though a liquid/soup is preferred, in addition. Now the soup has gained much more importance than the "sop' or bread, the staple food.

A soup is defined as a liquid of varying consistency, which is made from meat, fish, poultry, game, cereals, and or vegetables and is served in a thin, thick or in a pureed form with or without inclusions in it.

Soup is a liquid food consisting of any meat, seafood, poultry, game, cereals, vegetables, etc. they play an important role on the menu and are regarded as appetizers as they stimulate the appetite for heavier foods to follow. On the menu they are served as the first course, if Horsd'oeuvre are not being served. If horsd'oeuvre is served then the soup is served as the second course. Stock is the basis of all good soups

Parts / Structure of a soup:-

All the soups have the following four major parts namely,

Liquid: A stock is the main basis of a soup.

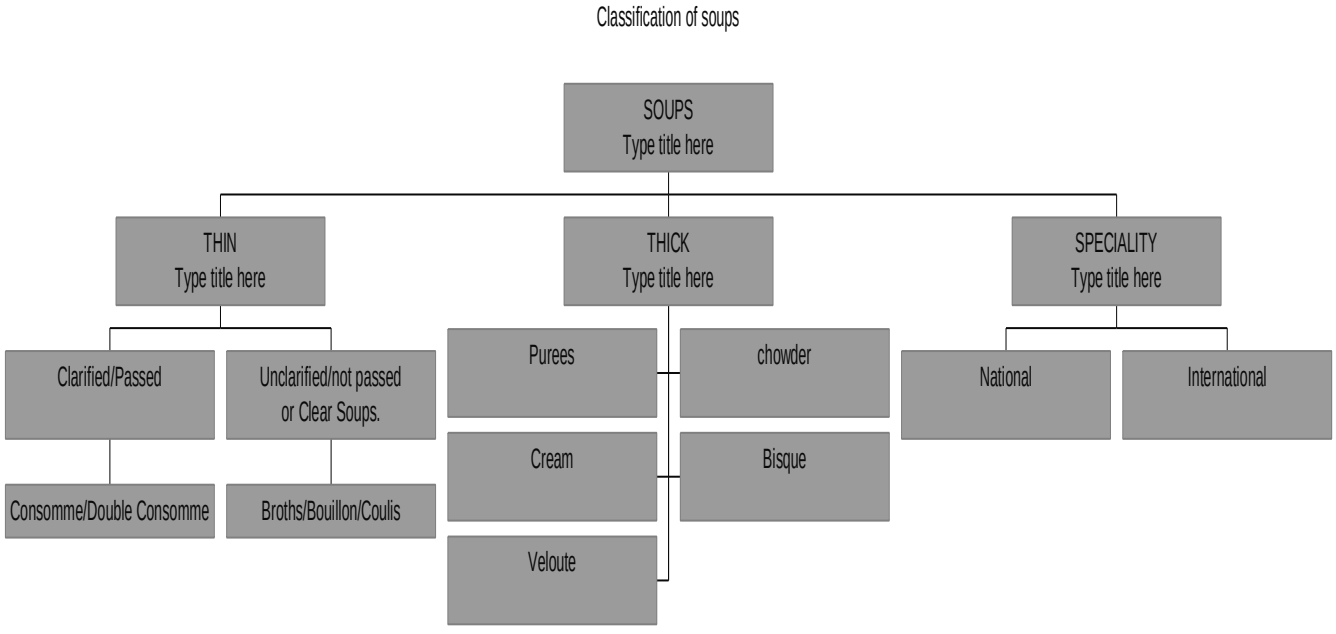
Thickening Agent: A roux, slurry, cereals, root vegs, pastas, liaison; gelatin (in case of consommés) etc gives the right consistency or strength to a soup.

Body: This is the main ingredient or ingredients, which is used to prepare a soup. A number of soups derive their names, the flavors and qualities from the main ingredient used in the preparation of the soup. For example: tomato soup, chicken soup, pumpkin soup etc.

Garnish: The ingredient, which is used sparingly to increase the eye appeal and presentation of the soup.

Garnish need not necessarily increase or contribute to enhance the taste of the dish. For e.g. parsley, swirl of cream, cheese, paprika, croutons, etc.

Classification of Soups.



THIN:

Clear soup prepared from beef chicken, fish or game stock is garnished with a variety of ingredients. Some hotels refer clear soups for any broth, bouillon or coulis. In such cases they use the term double consommé for differentiate consommé from other clear soups. Consommé is originated from the word "consummate" which means bring completion or perfection. This type of soups are made to perfection by using a 'clear meat' for clarification which consists of egg white, minced lean meat, mirepoix vegetables vinegar, and other seasonings and flavourings. The soup thus prepared will be very clear, with full-bodied meaty flavour and pleasing colour. The soup gets its name from the additional cooked ingredient used in it as garnish and usually added to it at the end. Sometimes it is named after historical figures, people or events in the form of accompanying garnish. Consommé should be sparkling clear and well flavoured. They can be served hot or cold.

Consommé :

Clear amber coloured .soup which is clarified with egg whites.

- Names after the garnish used in the soup.
- Cuts of vegetables such as brunoise, jardinière etc will also give name to consommé
- Consommés are served in soup cups garnished with decorative vegetables, custards, or even meats.
- Consommé is a hearty clear soup, so 180ml per portion should be served.
- To make a double consommé, reduce the consommé to half on medium flame.
- Many variations of consommé are there in the world.
- Jellied consommé are double consommé mixed with little amount of gelatine (7 to 8 g/litre) and chilled. Since this will be heavy and rich soup only 140 ml should be served as a portion.
- Eg Beef consommé, vegetable consommé , tomato consommé.

Clarification of consommé:

Coagulation of proteins was an important subject in our discussion on stock making, because one of our major concerns was how to keep coagulated proteins from making the stock cloudy. Strangely enough it is the same process of coagulation that enables us to clarify stock to perfect transparency. Remember some proteins especially that called albumen, will dissolve in cold water. When the water is heated, they gradually solidify or coagulate and rise to the surface. If we control this process very carefully, these proteins will collect all the tiny particles that cloud the stock and will carry them to the surface. The stock is then left perfectly clear. If on the other hand we are not careful, these proteins will break up as they coagulate and will cloud the liquid even more, just as they can do when we make stock.

Garnishes:

Consommé Brunoise : garnished with small dices of cooked vegetables.
Consommé Royale : garnished with dices of savoury egg custard.
Consomme Julienne: garnished with juliennes of cooked vegetable
Consomme Princess: garnished with asparagus.
Consomme Celestine : garnished with strips of crepes/ pancakes
Consomme Bretonne : garnished with juliennes of leeks, celery, onion, mushroom, chervil or parsley shreds.
Consomme Carmen: garnished with tomato dices, pepper dices, plain boiled rice and chervil.
Consomme Aileron: garnished with chicken wings (boned)
Consomme Aurore: coloured with tomato puree and garnished with juliennes of chicken
Consomme Alsacienne: garnished with fine pasta and served with profitroles stuffed with foiegras.

2. Broth/Bouillon/ Coulis/ Cut Vegetable Soup.
Cooking cut vegetables and meat in clear white stock (beef, chicken or mutton) along with some cereals or pastas as thickening agents, makes broths. The vegetables and meat should not be overcooked nor should the stock be allowed to go milky due to over cooking or vigorous boiling, except those made with milk. Dried sippets can be served most broths. E.g. Bortsch, and Scotch broth.

THICK SOUPS .

1.Puree:
Usually made of a particular kind of fresh vegetable, or dried pulses and thickened by its main ingredient and strained. Fresh vegetables are first cooked in butter before adding the stock or water and dried pulses are cooked in water after overnight soaking or cooked by pressure cookers or steamers. Starchy vegetables like potatoes or cereals usually act as thickening and need no additional thickening, to prevent the puree from separating. The consistency should be like thick cream and the colour and flavour delicate. Often cream may be added to give a smooth consistency as well as to enrich the taste and texture. Puree soups are served with fried croutons. E.g. puree of peas, carrots, pumpkin, cauliflower, sweet corn etc.

2.Cream:
Soup of creamy consistency, which is made with vegetable puree, fish, or poultry puree, mixed with béchamel/ white sauce or given a finishing with cream. The resultant soup should be very smooth and creamy. This soup contains 2/3 quantities of basic puree and 1/3 béchamel/white sauce. e.g. cream of chicken, mushroom, tomato, vegetable etc.

3.Veloute:
Veloute in French means 'Velvet' so it should have a velvety and smooth consistency.
Veloute are soups made from white stock and blonde roux, finished with liaison of egg yolks and cream. Generally half basic veloute and ¼ puree, ¼ stock or white consommé are added to dilute the mixture of puree and veloute to the correct consistency and finished with cream and egg yolk to enhance taste and texture. E.g. chicken veloute, celery veloute, etc.

4.Chowder:
American origin soup, resembling a stew. Usually made from shell fish (mollusk) like clams, oysters, mussels, scallops, etc. these may be prepared from meat or vegetables too. They are heavy soups. They can be milk, stock or tomato based. Crackers are generally added just before serving. e.g. Clam Chowder, Oyster chowder etc.

5.Bisque:
Another American origin soup, based or prepared from shell fish (crustaceans) like prawns, shrimps, lobster, etc. These are shellfish puree soups, thickened with rice or cream with small particles of cooked shellfish floating in it. A small amount of wine is added to enhance the flavour. These soups can even be served flambéed. E.g. Cray fish bisque, lobster bisque.

SPECIALITY OR NATIONAL SOUPS:
There are many varieties, cold or hot, thin or thick soups. As they have different origins they have been placed in a special category. These are soups that are originated in a certain locality and are associated with that particular place. In some cases these soups have a great tradition. E.g. New England Clam Chowder. Cream Crecy (Carrot soup) originated when nothing was available at site Battle of Crecy. Most of the national soups are unpassed (not strained) soups.

- Minestrone -- Italy.
- French Onion Soup -- France.
- Scotch Broth -- Scotland.

- Cockie – Leekie -- Scotland.
- Mulagatwanny -- India/ SriLanka.
- Water – Zoi -- Belgium.
- Avego – lemono -- Greece.
- Linzen Souppe -- Germany.
- Vichyssoise -- America.
- Manhattan Clam Chowder -- America.
- Bortsch -- Russia.
- Gazpacho --Spain.

COLD SOUPS:

Those soups which are jellied by the natural gelatin in the meat stock or by the addition of gelatin powder or those that are thickened by a starch or puree. E.g. consommé madrilène, Vichyssoise (a rich cream of potato and leek soup served chilled, garnished, with chopped chives.) Bortsch (a Russian soup served hot or cold made from beetroots) Gazpacho (a cold cucumber, onion, tomato, puree soup). Chilling would dull the flavours and the soup would taste bland Cold soups are very popular and a summer menu is incomplete without it.

Convenience soups

Convenience soups are marketed in dried or frozen forms, in cans, bottles, in ready to use form or concentrated form.

SPECIAL POINTS.

- Good quality stock should be used.
- If there is a heavy entrée or main course the soup should be thin.
- If heavy soup is served, the portion size should be small.
- Soup should not be very filling or consist of food particles that require much chewing.
- Garnish should be small and dainty, so that it can be picked up easily by a soupspoon.
- Serve hot soups piping hot and cold soups very cold or absolutely chilled.
- A little sugar should be added to tone the acidity of the soup, before adding cream as it prevents curdling.
- Accompaniments of the soup should be of crispy texture. E.g. various crackers, bread sticks, cheese croquettes or croutons.

Portion size:

Thin soups	200 ml.
Thick soups	180 ml.
Very thick or heavy soups	160 ml.

COMMONLY USED GARNISHES FOR SOUPS

Soup garnishes may be divided into three groups.

Garnishes in the soup .

- Major ingredients, such as the vegetables in clear vegetable soup, are often considered garnishes this group of garnishes also includes meat, poultry, seafood, pasta product and grain such as barley or rice. They are treated as part of the preparation or recipe itself, not as something added on.
- Consommés are generally named after their garnish, such as consommé brunoise, which contains vegetable cut into brunoise shape.
- Vegetable cream soup usually garnish with carefully cut pieces of vegetable from

which they are made.

Toppings

Clear soups are generally serve without topping to let the attractiveness of the clear broth and the carefully cut vegetables speak for themselves.

Occasional exceptions are toppings of chopped parsley or chives. Thick soups, especially those that are all one color, are often decorated with a topping. Toppings should be placed on the soup just before service so they won't sink or lose their fresh appearance. Their flavor must be appropriate to the soup. Do not overdo soup toppings. The food should be attractive in itself. Topping suggestion for thick soups:

- Croutons dices or other shapes made from bread, toast, pastry.
- Profit roles prepared from choux paste they are miniature cream puffs may filled or used plain.
- Cereals rice or barley
- Cheese ball, or grated Parmesan served with croutons on one side.
- Cream unsweetened whipped cream sour cream.
- Meats usually small dices or juliennes.
- Poultry same as meat
- Sea food diced or flaked. Large enough pieces distinguishable.
- Pastas noodles, spaghetti, other pasta product such as star letters, cornets, etc.
- Vegetable cuts in various sizes, shape-juliennes, round slice, dices of spring vegetables.
- Fresh herbs(parsley, chives),chopped.
- Fried herbs, such as parsley, sages, chervils, celery leaves, leeks julienne.

Accompaniments

American soups are traditionally served with cracker. In additions to the usual saltines, other suggestions for crisp accompaniments are

- Melba toast
- Corn chips
- Breads stick
- Cheese straw
- Profiterole's (tiny unsweetened cream puff shells)
- Whole grain wafers

Questions:

1. Classify soups with examples.
2. What are the points kept in mind while making a soup?
3. Name the international soups with country of origin.
4. Name the various parts of a soup.
5. Define consommé, and explain how the consommé will be clarified.
6. Define:
   a) Bisque
   b) Convenience soups
   c) Chowder
   d) Broth.
   e) Cold Soups

7. Fill in the blanks:
   a) _____ is the national soup of India.
   b) _____ gets its name from the garnish we add to it.
   c) The average quantity of a thick soup ____ml.

4 Fish Mongery

The edible flesh of fish, like that of meat and poultry, consists of water, proteins, fats and small amounts of minerals, vitamins and other substances. The differences, however, are perhaps more important than the similarities. Fish has very little connective tissue. It means that it cooks very easily even at lower heat. Fish is naturally tender. Moist heat methods are used not to create tenderness, but to preserve moistness and provide variety. Cooked fish must be handled very carefully. When fish is cooked, the flesh breaks apart into its natural separations. This is called "*Flaking*". Fish is very delicate and is easily overcooked.

4.1 Classification of Fish with examples

Fish is divided into the following groups:

1. ***Fin Fish***
   Fin fish are vertebrates and have skin and scales which cover the body. They move with the help of their fins. They are subdivided into :
   a. *Flat (White or Lean) Fish*
      These are mainly flat fish and contain oil only in the liver. Most of these are deep sea fish. E.g. *Sole, Plaice, Lemon Sole, Skate, Flounder, Turbot, Dab, Halibut, Brill etc*. A real flat fish will have both the eyes on the same side. Common local examples are *Sole* and *Pomfret*.
   b. *Oily (Round) Fish*
      These are mainly round fish and contain fat all over the body. The amount of fat varies from 0.5 to 20% in different varieties. These fish are often pigmented and tend to be surface fish. Fresh Water fish include *Trout, Crap, Pike, Eel, Salmon etc*. Sea water fish include *Red mullet, Sea Bass, Red Snapper, Gray Mullet, Red Bream, Cod, Hake, Whiting, Sardine, Whitebait, Sprat, Mackerel, Herring, Smelt, Pollack, Monkfish, and Haddock etc*.
2. ***Cephalopods***
   These type of fish have neither bones nor shell. Some of them have small cartilage e.g. *Squid, Octopus, Cuttle fish etc.*
3. ***Shell Fish***
   Shell fish may be divided into:
   a. *Molluscs*
      Molluscs may be further divided into :
      i. *Univalves*
         These are recognized by the characteristic spiral formation of their shells, which unlike those of bivalves, are not divided into halves e.g. *Whelks, Winkles etc.*
      ii. *Bivalves*
         These have two distinctly separated shells joined by a hinge-like membrane. The movements of shell are controlled by a strong muscle. When the muscles relax, the two halves of the shell fall open. The shell also opens when the organism dies, thus exposing the contents of the shell to contamination from outside, resulting in quick purification e.g. *Oysters, Scallops, Mussels, Clams and Cockles*.
         The shells of the Molluscs increase at the rate of one ring per year to allow for the growth of the organism. The age of the molluscs can thus be roughly estimated by the number of the rings on the shell.
   b. *Crustaceans*
      These have a segmented crust like shell e.g. *Lobster, Crabs, Prawns, Shrimps, Crayfish (has claws), Crawfish (has no claws)*. The shells of the crustaceans don't grow with the fish, unlike those of the Molluscs, but are shed each year, with a new one forming to suit their new size

4.2 Selection, Cooking & Storage of Fish

HOW TO SELECT FISH

The following points must be borne in mind when selecting fish:

1. Eyes should be bright and not sunken.
2. Gills should be red.
3. The tail should be stiff.
4. The flesh should be firm and not flabby.

5. The scales, if any, should be plentiful.
6. There should be no unpleasant odour.
7. To test a cut piece, press down a finger and if an impression is left, then the fish is stale.
8. Any tendency for the raw flesh to come away the bones is a dangerous sign.

Choosing Shellfish

They should be brought in season as far as possible. They should be medium-sized and of good weight. It is best to buy them alive, particularly oysters, crabs and lobsters. If they are dead, the following precautions must be taken:

1. The eyes of the crabs should be springy and not hanging down.
2. The eyes should be bright.
3. The tail of the lobster should spring back when stretched out.
4. Shrimps and prawns must be crisp.
5. Oyster shells should be tightly closed.

Food Value

Fish is useful source of animal protein as meat. Oily fish contain vitamin A and Vitamin D in their flesh but in white fish these vitamins are present in the liver. The bones when eaten provide the body with calcium and phosphorous. Since all fish contain proteins it is good body building food and oily fish is useful for energy and as a protective food due to its content of vitamins, but owing to its fat content it is not so digestible as white fish so it is not suitable for cookery.

Methods of Cooking

Poaching or boiling: This method is suitable for whole fish, cuts or fillets. Barely cover the fish with cooking liquid which can be water and milk, fish stock (water, fishbone, onions, butter, bay leaf, juice of lemon, parsley and peppercorns) or a court bouillon (water, vinegar, thyme, bay leaf, parsley, onion, carrots, peppercorns and stock) used only for oily fish.

Whole large fish is covered with cold liquid and brought to boil, and the fish is usually immersed in simmering liquid. The cooling liquid is usually used to make the sauce.

To test for doneness: **fish is cooked when the flesh separates easily from the bone.** When there is no bone it is considered done when creamy liquid begins to run. In boiling or poaching if the fish is served cold it should be left in the liquid for cooling as it prevents breaking up.

Grilling: Suitable for small whole fish, cuts and fillets, passed through seasoned flour and lime juice, brushed with oil and grilled on both sides. When grilling fish under the salamander, marks or gashes have to be made so that it penetrates; otherwise the outside becomes dry before the inside gets cooked.

Shallow Frying: Shallow fried fish is termed meuniere and is suitable for small whole fish, cuts and fillets. Fish is passed through seasoned flour and shallow fried on both sides, presentation side first, in clarified butter in a frying pan. It is placed on a serving dish and masked with nut brown butter, lemon juice, slice of lemon and chopped parsley.

Deep Frying: This method is suitable for small whole fish, cuts and fillets. The fish must be coated by one of the following:

a) Flour, egg and crumb
b) Milk and flour
c) Batter

The coating is to form a surface to prevent penetration of the fat into the fish. The fish should be drained or served on a dish paper with a quarter of lemon and fried parsley.

Steaming: Place the fish in a steamer sprinkle with salt and pepper. The water in the steamer must be fast boiling all the time the fish is cooking. If large, the fish can be turned once.

Baking: Suitable for medium size fish, or middle portion of a large fish. Scale clean, leave tail and head on. Stuff the belly. Place in baking tray with a little fat in a moderate hot oven garnish with parsley lemon and sauce.

4.3 Local Names of Fin Fish and Shell Fish

TO BE GIVEN AS AN ASSIGNMENT TO THE STUDENTS

4.4 Cuts of Fish

1. Darne- A slice or steak of round fish on the bone, with skin.(100 –150 gms)
2. Troncon - A slice or steak of flat fish on the bone, with skin.(100 – 150 gms)
3. Fillet - A fillet of fish usually from a small fish without bones and skin.
4. Supreme -Applied to large fillets of fish cut into portion sizes on the slant.
5. Delice - Applied to neatly folded fillets of fish.
6. Goujon - Applied to fillets of fish cut into strips approximately 6 cms X 1cm x 1 cm.
7. Goujonettes - Goujonettes are neatly shaped rounded cylindrical strips.
8. Paupiette - This term is applied to fillets of smaller fish which are stuffed with farce, fish or vegetables or a mixture of both, neatly rolled into a barrel shape, tied or pinned.
9. En tresse- Derived from a fillet. Cut the fillet into three strips, leaving them attached on the one end, then plait the three strips into a neat plait.
10. En Loregnette -Usually made from long fish. the cleaned and skinned fish is filletted - leaving the fillets attached to head and then each fillet is rolled towards the head.

5 Poultry

The term poultry is designated to birds reared for their meat and/ or for their eggs, and includes chicken, ducks, geese, guinea fowls, pigeons and turkeys.

Classification:
Chicken:

KIND / CLASS	DESCRIPTION	AGE	WEIGHT RANGE
Rock Cornish Game hen	*Special breed of young chicken, very tender and delicate*	*5 weeks or less*	*¾ - 2 lb (0.34 – 0.9 kg)*
Broiler or fryer	*Young chicken or either sex. Tender flesh and flexible cartilage. Smooth skin*	*6 – 12 weeks*	*Broiler 1 ½ - 2 ½ lb (0.7 – 1.1 kg) Fryer 2 ½ - 3 ½ lb (1.1 – 1.6 kg)*
Roaster	*Young chicken of either sex. Tender flesh and smooth skin, but less flexible cartilage*	*3 -5 months*	*3 ½ - 5 lb (1.6 -2.3kg)*
Capon	*Castrated male chicken. Flesh very tender and well flavored. Large breast. Expensive*	*Under 8 month*	*5-8lb (2.3 – 3.6 kg)*
Hen or fowl	*Mature female. Tough flesh and coarse skin. Hardened breastbone cartilage*	*Over 10 months*	*3 ½ - 6 lb (1.6 – 2.7 kg)*
Cock or rooster	*Mature male. Coarse skin. Tough, dark meat*	*Over 10 months*	*4 – 6 lb (1.8 – 2-7kg)*

Duck

Kind / Class	Description	Age	Weight range
Broiler or fryer duckling	*Young tender duck with soft bill and windpipe*	*Under 8 weeks*	*2 – 4 lb (0.9 – 1.8 kg)*
Roaster duckling	*Young tender duck with bill and windpipe that are just starting to harden*	*Under 16 weeks*	*4 – 6 (1.8 – 2.7 kg)*
Mature duck	*Old duck with tough flesh and hard bill and windpipe*	*Over 6 months*	*4 -6 lb (1.8 – 2.7 kg)*

Guinea Fowl

Kind / Class	Description	Age	Weight range
Young guinea	*Domestic relatives of the pheasant. Tender*	*3 – 6 month*	*¾ - 1 ½ lb (0.34 – 0.7 kg)*
Mature guinea	*Tough*	*Up to 12 months*	*1 – 2 lb (0.45 – 0.9 kg)*

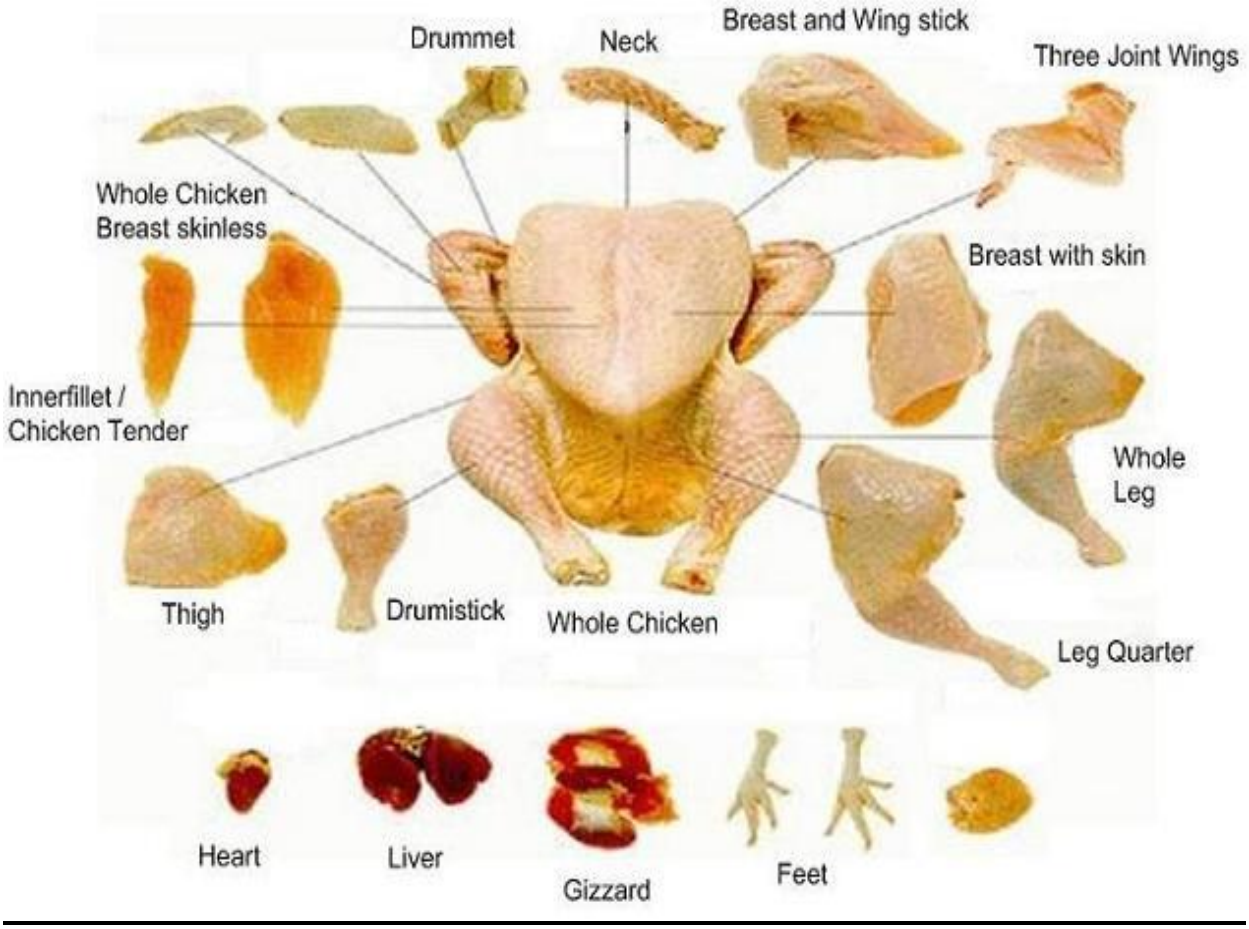
Pigeon

Kind / Class	Description	Age	Weight range
Squab	*Very young pigeons with light, tender meat*	*3 – 4 weeks*	*Under 1 lb (0.45 kg)*
Pigeon	*Older pigeons with tough, dark meat*	*Over 4 weeks*	*1 – 2lb (0.45 – 0.9 kg)*

Turkey

Kind / Class	Description	Age	Weight range
Fryer – roaster	*Young bird of either sex. Tender flesh, smooth skin, and flexible cartilage*	*Under 16 weeks*	*4 – 9 lb (1.8 -4 kg)*
Young turkey (hen or tom)	*Young turkeys with tender flesh but firmer cartilage.*	*5 – 7 months*	*8 – 22 lb (3.6 – 10 kg)*
Yearling turkey	*Fully matured turkey that is still reasonably*	*Under 15 months*	*10 – 30 lb (4.5 – 14 kg)*
Mature turkey or old turkey (hen or tom)	*Old turkey with tough flesh and coarse skin*	*Over 15 months*	*10 – 30 lb (4.5 – 14 kg)*

5.1 Cuts of Poultry



5.2 Selection and Uses of Cuts

<u>Age</u>
A pliable breastbone is probably the best indication when choosing young birds. Other indication is pliable beak, smooth feet and slender claws, light comb, flight muscles undeveloped.
Old birds will have a hard, brittle breastbone and beak, feet and legs scaly with strong claws and long spurs and well-developed flight muscles. The flesh too will be much darker and the legs hairy.

<u>Quality</u>
The following points are the best indication.
- ✓ *Flesh firm but pliable, with a fine texture*
- ✓ *Not too much fat, especially in abdominal cavity*
- ✓ *White or yellow skin, according to breed*
- ✓ *No cuts, scores, rubbed portions on skin or blood patches*
- ✓ *The breast should be straight, broad and well fleshed*
- ✓ *Wings compact, small head, with neat comb and wattles*
- ✓ *The bones fine, legs short and well fleshed.*

<u>Preparation, Dressing and Cuts</u>
<u>Ante-Mortem Inspection</u>
Birds to be killed are brought to the slaughterhouses in a regular flow of batches of birds. Birds will be starved of food for some 4-6 hours so that minimum amount of food is in the intestines when they are killed. Should birds be starved for longer periods they would start to

lose body weight. An adequate supply of drinking water is always available as it is essential not only for birds to maintain a normal body temperature in warm weather but also to prevent them from becoming distressed.

Killing

It is usually carried out by dislocation of the neck. In some cases the jugulars vein can be severed from inside the mouth: this method is known as "sticking", special pliers being used for this purpose. Kosher killing is carried out by cutting the throat from the outside. With the exception of kosher, the birds are commonly stunned electrically prior to killing.

The large scale processing of birds will be by a semi-automatic conveyor line system so that a large number of birds can be handled each hour. Birds will be placed upside down in funnel type containers, to restrict the flapping of their wings and subsequent bruising, with the head hanging downwards. The birds travel along the conveyor and pass through a small area where they are electrically stunned- but not killed. They are killed by making incision with a sharp knife across the neck causing rapid loss of blood.

Plucking

The birds are taken out from the funnels and hung on the hooks by their feet. They then pass through a water bath 52-54°C for a few minutes and then through automatic plucking machines before being hung by their heads with the final plucking being finished by hand. The plucking of ducks and geese is slightly different in that they are usually dipped into hot wax and not water. This results in a carcass with a better appearance. The carcass is then cooled to 4°C to prevent bacterial spoilage if they are not going to be eviscerated immediately.

Hanging

The muscles or flesh of poultry will stiffen and toughen as soon as rigor mortis sets in, usually upto 3 to 4 hours after killing. Following this, tenderizing takes place rather quickly up to 24 hours and this should be the maximum time required to hang any poultry for the purpose of tenderizing.

Singeing

Hold the bird by the head and feet, stretch it well and pass it over a gas jet quickly. Turn it around, so that every part is properly singed, including the under parts of the wings. Take care not to scorch the skin.

Evisceration

A final cut is made by an operator between the end of the keel (sternum) and the vent to allow easy access to the abdomen and the second cut is made along the length of the neck to allow the crop and neck to be removed. The intestines are removed together with the liver, heart and gizzard and are separately inspected and washed before being sent with the neck to the giblet packing section. The opened carcass after the head and the feet have been cut off is then thoroughly washed and inspected.

It is important that fresh killed poultry be cooled as quickly as possible if the birds are to be stored. This is done by cooling the carcass in troughs of water and ice chippings so as to reduce the temperature of the carcass to 4°C.

Trussing

The giblets which are usually wrapped in small polythene bags are then inserted in the abdomen space of the drained carcass and are trussed either with strings or rubber bands to reshape the carcass.

Weighing

The carcasses are then weighed and separated into their particular weight ranges.

Giblets Heart,liver,gizzard, and neck of Poultry is known as Giblets.

Packing

The carcasses are then usually wrapped in polythene bags to keep them clean to prevent any dehydration and if they are to be frozen, from such damage as freezer burn.

Maturity and Tenderness

The tenderness of the piece of meat is related to connective tissue and connective tissue increases with use or exercise of the muscle and maturity or age of the animal or bird. Use or exercise is of less concern in poultry. Maturity or age is a major consideration when selecting poultry. Young tender birds are cooked by dry heat methods and older tougher birds by moist heat method.

Light Meat and Dark Meat

Poultry is not divided in many small cuts, as are meats. Chicken and turkeys, however, are usually thought as of consisting of two kinds of parts, depending on the colour of the meat.

Light Meat
Breast and wings: less fat, less connective tissue cooks faster.
Dark Meat
Legs (drumsticks and thighs): more fat, more connective tissue and takes longer to cook.

Doneness
Poultry is almost always cooked well done, but not overcooked. If overcooked chicken and turkey quickly become dry, stringy and unpalatable. Internal temperature of 180 F tested with a thermometer, is the most accurate guide. The thermometer should be inserted into the thickest muscle of the inner part of thigh, away from the bone
For smaller birds cooked by any method the doneness is determined by-
1. *Looseness of joints-the leg will move freely in its socket.*
2. *Clear juices-inside the cavity of a roasted bird will be clear yellow rather than cloudy and red or pink.*
3. *Flesh separating from bone-muscles will begin to pull away from bones; excessively shrunken flesh means it is over cooked and dry.*
4. *Firmness to touch-test with finger pressure as you would a steak (Not recommended. Do not test by piercing deeply with a fork and twisting the flesh. Tests many valuable juices will be lost)).*

Trussing
"Trussing" means tying the legs and wings, against the body to make a compact solid unit. It has two main purposes:
1. *Even cooking (Extended legs and wings cook too quickly).*
2. *More accurate appearance, especially when presented or served whole or carved in the dining room.)*

Cooking of Poultry
Roasting and Baking
The general rules for roasting and baking meats also apply to poultry. Seasoning and basting is done and if desired a little mirepoix or bouquet garni should be placed inside the cavity. You need to season the skin only if the skin is to be served and eaten, since the seasoning will not penetrate the skin. Oil the skin before roasting to help in browning and to protect against drying. The skin may be basted with fat only during roasting. Basting is beneficial for large turkeys, which must be subjected to dry heat for several hours. Basting is unnecessary for ducks and goose, which have a great deal of fat under the skin. Low temperature roasting is used for large items such as Turkeys and Capons. The searing method may be used for Chicken under 4-5 pounds and for baked chicken parts. That is start at high temperature - 450°F for 15 minutes when reduced to 250°F–325°F. High temperature roasting is used for small items such as squab and game birds which are often served rare.

Baked Poultry
Roasting and baking are the same process. Chicken parts are sometimes coated with seasoned crumbs or flour and rolled fat before baking. Such products sometimes misleadingly called "Oven fried".

Broiling and grilling
Tender, young poultry items may be cooked on the grill or broiler using the same procedure as for steaks and chops.

Sautéing
Pan frying and deep-frying - Because chicken and turkey are lean, tender meats cooking in fats are an appropriate and popular way to prepare them. While pan-frying the side that is to be faced up on the plate should be browned first, for best appearance. This is called the presentation side. For chicken pieces this is usually the skin side.

Simmering and poaching
Simmering and poaching are both methods of cooking in a liquid. The major difference is the temperature. In simmering, the liquid is a little below the boiling point and bubbling very

gently. In poaching the temperature is even lower and the liquid is not really bubbling. Also less liquid is usually used for poaching. The simmering method is used to cook fowl and other tough items, which required long cooking in moist heat to be made tender. Poaching method is used to gently cook tender poultry in order to retain moisture and to develop a light, subtle flavour. Cooking time is very short because the product is naturally tender.

Braising

A moist- heat cooking method, braising may be used to tenderize tough poultry products. It can be used to provide moistness and flavour to tender poultry items. "Coqauvin" the well known braised chicken in red wine was originally made with tough older rooster (coq).

Dressing and stuffing

Stuffing chickens and turkeys is usually not practical in production kitchens. Baking the "stuffing" separately gives better results for the following reasons.

1. *Safety: Stuffing inside a bird is an ideal breeding ground for bacteria that caused food poisoning.*
2. *Quality: Additional roasting time is needed to heat the stuffing through. The result is often overcooked poultry.*
3. *Practicality: Filling poultry with stuffing and then removing it after roasting is impractical, time consuming and messy.*

Stuffing that is baked separately is usually called "Dressing".

Questions:

1. Fill in the Blanks
   - The method of killing poultry by severing the jugular vein from the inner side of the mouth is known as _____.
   - Holding the bird stretched by the head and wings and passing over a gas jet is called_____
   - _____ means tying of the legs and wings against the body to make a compact solid unit of Poultry with stuffing the cavity .
   - _____ birds are hunted or shot for sport or food.

   - Definitions
     Trussing, Evisceration, Giblets, Singeing,

     Answer the following.
     a. Define poultry and classify the same.
     b. Classify market forms of Poultry.
     c. Explain Dark and Light Meat in Poultry.
     d. Why is Chicken Trussed prior to Roasting?
     e. Explain the term 'Doneness' in Poultry.
     f. What are the points to be borne in mind while selecting good quality Poultry?
     g. What are the procedures for cleaning of Poultry?
     h. What are the methods of Cooking applied to poultry?
     i. Mention the three roasting methods and when is each one used?
     j. Explain handling and storage fresh and Frozen Poultry.
     k. What do you mean by 'Game' birds?

6 Rice, Cereals & Pulses

6.1 Introduction, Classification of Cereals and Pulses

Cereal is a grain used for food e.g. Wheat, jowar , etc.

Rice is a cereal crop, which is the staple diet for just over half of the world's population.

Pulses is a collective name for the edible seeds of plants grown in various countries of the world. Pulses are low in fat, and a very good source of fibre, Vitamin B and minerals. They also have a high protein content

RICE

Rice is the seed of a monocot plant Oryza sativa. As a cereal grain, it is the most important staple food for a large part of the world's human population, especially in East, South, Southeast Asia, the Middle East, Latin America, and the West Indies. It is the grain with the second highest worldwide production, after maize ("corn").

1. Since a large portion of maize crops are grown for purposes other than human consumption, rice is probably the most important grain with regards to human nutrition and caloric intake, providing more than one fifth of the calories consumed worldwide by the human species.
2. A traditional food plant in Africa, rice has the potential to improve nutrition, boost food security, foster rural development and support sustainable land care.
3. Rice is normally grown as an annual plant, although in tropical areas it can survive as a perennial and can produce a crop for up to 30 years.
4. The rice plant can grow to 1–1.8 m tall, occasionally more depending on the variety and soil fertility. The grass has long, slender leaves 50–100 cm long and 2–2.5 cm broad. The small wind-pollinated flowers are produced in a branched arching to pendulous inflorescence 30–50 cm long. The edible seed is a grain (caryopsis) 5–12 mm long and 2–3 mm thick.

6.2 Varieties of Rice and Byproducts

Types of Rice.

1.	**Paddy Rice**	-	Rice still in its original state with no further treatment after threshing.
2.	**Brown Rice**	-	(Husked Rice) Rice with the outer husk removed having a characteristic beige color.
3.	**White Rice**	-	Brown rice from which all the germ is removed by passing through machines that rasp the grain. It is also called unpolished rice.
4.	**Polished Rice**	-	White rice that has been passed through machines that remove any flour still adhering to the grain.
5.	**Glaze Rice**	-	Polished rice covered with a fine layer of French chalk and suspended in glucose, specially processed to give a shine.
6.	**Steamed Rice**	-	Paddy rice that is cleaned, soaked in hot water, steamed at low pressure, de-husked & blanched.
7.	**Pre-cooked Rice**	-	Rice that has been husked, soaked, boiled for 1 – 3 minutes and dried at a high temperature.
8.	**Camolino Rice**	-	Polished and lightly coated with oil.
9.	**Puffed Rice**	-	In India it is roasted and fried on hot sand.
10.	**Wild Rice**	-	The seed of an aquatic grass, related to the rice plant, it grows one by one up the stalks and resembles

little black sticks. It is very expensive.

11. **Basmati Rice** - Indian rice with long grains, with a distinctive flavor. Old basmati rice is the most prized and is rarely available.
12. **Sticky Rice** - Round grain rice which has a very high starch content. Rarely available, it is most ideal for Chinese cooking.
13. **Rice Flakes** - Rice that is steamed, husked & flattened into Flakes, it is eaten for breakfast with milk & sugar or as a savory preparation (poha).

Rice is also used to make a variety of alcoholic drinks. :-

CHOUM	-	In Vietnam
SAMAV	-	In Malaysia
SAKE	-	In Japan
CHAO XING	-	In China

Nutrition: Rice has a very high Calorific value (350 cal, per 100 g. in whole rice & 120 cal. Per 100 g. in balanced rice). It is very rich in digestible starch (77 %) and also in vitamins B1, B2 and minerals.

Cooking of Rice

A. **In Water:**
   a. Rice is put into the vessel with twice the amount of water, brought to a boil, and cooked till the water is absorbed.
   b. Alternatively it can be poured into a vessel of boiling water, brought to a boil, cooked and drained off.

B. In Stock: In this method the rice is lightly fried in hot oil and stock is added to it. It is then cooked till the Rice is soft and all the stock has been absorbed.

C. **In Milk:** Rice is normally cooked in milk for making desserts. Short grained rice is ideal for this type of cooking because the grains stick together thus giving thickening properties to the dish.

PULSES /LEGUMES/BEANS

A pulse is an annual leguminous crop yielding from one to twelve grains or seeds of variable size, shape, and color within a pod. Pulses are used for food and animal feed. The term "pulse", as used by the Food and Agricultural Organization (FAO), is reserved for crops harvested solely for the dry grain. This excludes green beans and green peas, which are considered vegetable crops. Also excluded are crops that are mainly grown for oil extraction (oilseeds like soybeans and peanuts), and crops which are used exclusively for sowing (clovers, alfalfa). However, many of the varieties so classified and given below are also used as vegetables, with their beans in pods while young cooked in whole cuisines and sold for the purpose; for example black eyed beans, lima beans and Toor or pigeon peas are thus eaten as fresh green beans cooked as part of a meal. Pulses are important food crops due to their high protein and essential amino acid content. Like many leguminous crops, pulses play a key role in crop rotation due to their ability to fix nitrogen.

Types of pulses

Most pulses are dried, which means that they are easy to store and have a long shelf life. There are three main varieties:

1. **Peas** which have the word pea in their name
- Chickpeas: small, round, distinct knobby shape and golden brown color. Nutty taste.
- Marrow fat peas: those which have large seeds
- Green and Yellow Split Peas: break up when cooked, so good for thick soups and puddings.

2. **Beans** are those with the word bean in their name
- Aduki beans: small, reddish, round bean with a strong, sweet, slightly nutty flavor.
- Black eye beans: small creamy white beans with black at the eye.
- Mung Beans: often used as sprouting bean. Green in color.
- Pinto Beans: medium sized, speckled pink/brown color with creamy texture.
- Red kidney beans: colorful, red in color.

3. **Lentils** are the seeds of one particular plant. They come in a range of colors, whole and split. Split lentils are inclined to break up if overcooked.

Protein content

Pulses are 20 to 25% protein by weight, which is double the protein content of wheat and three times that of rice. For this reason, pulses are called "vegetarian's meat". While pulses are generally high in protein, and the digestibility of that protein is also high, they often are relatively poor in the essential amino acid methionine, although Indian cuisine includes sesame seeds, which contain high levels of methionine. Grains (which are they deficient in lysine) are commonly consumed along with pulses to form a complete protein diet.

Preparing pulses:

Draining: canned beans require draining as one-third of the weight on the can is water

Soaking: Dried pulses cook faster when they are soaked. Normally they are soaked a day in advance for 12hours or a minimum of 3-4 hours is normal. Pulses are soaked in twice the amount of water to pulses.

Blanching: is required for pulses such as beansprouts if used in salad or in stir-fried dishes.

Pre-boiling of dried pulses: Dried pulses may contain poisonous substances -especially red kidney beans. When these toxins survive cooking they cause inflammation of the stomach and intestines and can lead to the death of a person. For this reason beans have to be boiled vigorously for the first 15minutes and pulses for the first 10 minutes.

Refreshing: is cooling the pulses quickly under cold water to stop cooking.

When using canned pulses other preparation methods involved are:

- ***Mixing***:to combine the various ingredients
- ***Chopping***:Vegetables need to be sliced
- ***Slicing***:cutting vegetable and fruits into smaller pieces

Cooking Pulses

Since pulses and legumes are very low in moisture content they have to be soaked in water. It's advisable to soak pulses and boil them in the same water in which soaked as some nutrients may have bleached out to water.

When boiling pulses have to be boiled rapidly for the first 10-15 minutes to get rid of the toxins. After that they have to be simmered gently till tender. If using salt, do not add to the cooking water until the end of the cooking time. Otherwise the salt will make the pulses tough. Acids (lemon juice, vinegar) also toughen pulses. Do not add bicarbonate of soda to the boiling water. Although it is said to soften the pulses during cooking, it destroys the B vitamins.

Besides boiling pulses are roasted, fried and ground to make flour and then be used for various purposes.

6.4 Sprouts and Uses

Sprouts : Edible Sprouts are germinated plant seeds which are edible. They are usually produced by soaking the seeds at regular intervals over a 1-4 day interval. Sprouts are believed to be highly nutritious and rich in enzymes which promote good health.

Convenience: They can be easily grown anywhere.
Offers a variation: With their nutty flavor and crisp texture. Sprouts are simply a nice change from vegetable.

Uses of Pulses

1. As dals - the basic course of Indian cookery.
2. As soups - e.g. Mulligatawny
3. Providing mutual supplementation of amino acids in Khicdi
4. As flour in missi roti, Besani roti.
5. As basic ingredient for idlis, uttapas and chillas.
6. As base ingredient or coating as in pakodas, wadas of various kinds.
7. As base for desserts like laddoos, mobanthal, payasam, Boondi.
8. As snacks like fried dal, sev, ganthias
9. Base ingredients for papads.
10. As stuffing as in dal kachories, puran polies, stuffed tikkis.
11. In chats and sprouted salads.

UNIT 2

7 Meat

7.1 Introduction to Meat Cookery

'***Meat***' is defined as any part of a bovine (beef type animal), pig, sheep, goat, horse, ass or mule that is fit for human consumption. The general term *meat* includes carcass meat, often in the form of joints, offal such as liver, kidneys, etc and processed meats such as pickled beef, hamburgers, sausages, etc.

Meat may be classified in seven different ways:

1. By the type of animal (*beef, veal, pork, lamb, mutton, etc.*).
2. By the country of origin (*Scotland, New Zealand, Australia, etc.*).
3. By the age and\or sex of the animal (*steer beef, bull beef, cow beef, lamb, mutton, etc.*).
4. The grade of meat (*New Zealand lamb of high quality sold by the grade of pH*).
5. By the particular cut of meat (*sirloin of beef, saddle of lamb, etc.*).
6. By the condition of the meat (*fresh, chilled, frozen, pickled, etc.*).
7. By their catering uses (*suitable for roasting, frying, grilling, boiling, etc.*).

THE SLAUGHTER OF ANIMALS

The slaughter of animals which are for sale for human consumption is rigidly controlled by the law to ensure that the animal suffers no pain at all, that the method of slaughtering and subsequent preparation of the carcasses takes place under hygienic conditions in licensed slaughter houses and that the meat is inspected by authorized officers and found to be fit before being permitted to be sold for human consumption.

The slaughtering of animals is in five main stages-

1. Anti-mortem inspection

Animals to be slaughtered are brought to the slaughter house and kept usually for a minimum of 24 to72hrs (1-3days). This resting has a beneficial effect on the quality of the dressed carcass. The inspection of each animal is done to identify any signs of disease, injury, distress, etc, prior to the animal being slaughtered.

2. Stunning

Fit animals are taken into the slaughter house and individually stunned by one of the following methods-

a) Captive Bolt

This is the stunning of the animal by the captive bolt pistol and is used for large animals such as bovines and large male pigs. Bovines are also pitted to minimize any subsequent reflex muscular action which could take place during the sticking and dressing of the carcass. Pitting is done by inserting a thin, long rod through a hole made in the skull by the bolt which has the effect of destroying the part of the brain which controls the reflexes.

b) Electrical Stunning

This method is the passing of a small current of electricity through the brain of small amounts such as baby calves, pigs and sheep for at least 7 seconds. This method renders the animal unconscious for upto 1 ½ minutes.

c)Carbon dioxide stunning

This method is used for stunning pigs. The pigs are placed on a moving platform which passes through a tunnel containing a mixture of CO2 and air and renders the pigs unconscious. The particular benefit of this method is that subsequent bleeding of the animal is more efficient.

3.Bleeding of the animal

After the animal has been stunned it is bled by making a small incision along the side of the neck and cutting the main blood vessels. The animal is usually hung up by the hind legs during this stage. It is important that as much blood as possible should be removed from the body after death as blood is an ideal medium for the growth of the bacteria which causes decomposition.

4.Dressing the animal

In this stage, the hide of this animal is removed for bovines and sheep and only the hair for pigs. The animal is cut open along the chest and stomach. Offal and viscera (intestines, etc) are removed. Large animals such as bovines and pigs are usually split down the vertebrae into two sides to facilitate handling.

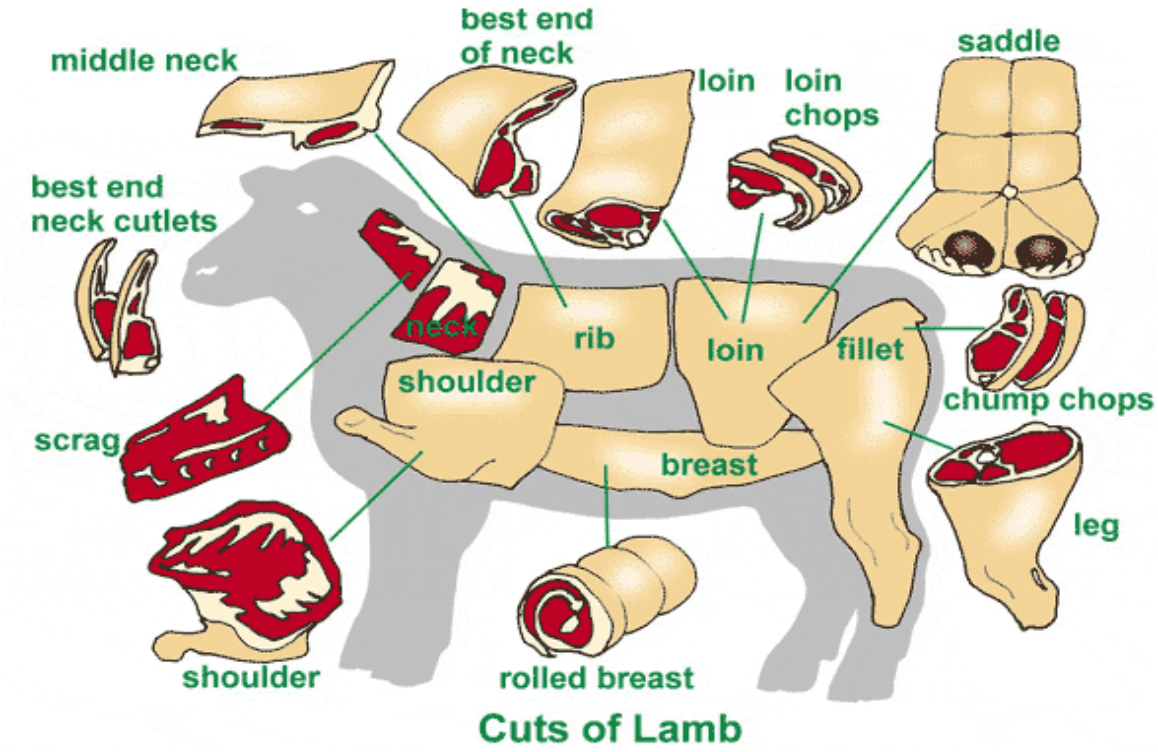
5.Inspection

This is a continuous process and if anything unusual in the animal or carcass is noticed it is noticed it is brought to the attention of a meat inspector. If need be the blood offal or viscera must be identifiable with the same tag number as the carcass. The final inspection is of the carcass and usually takes place in the cooling room.

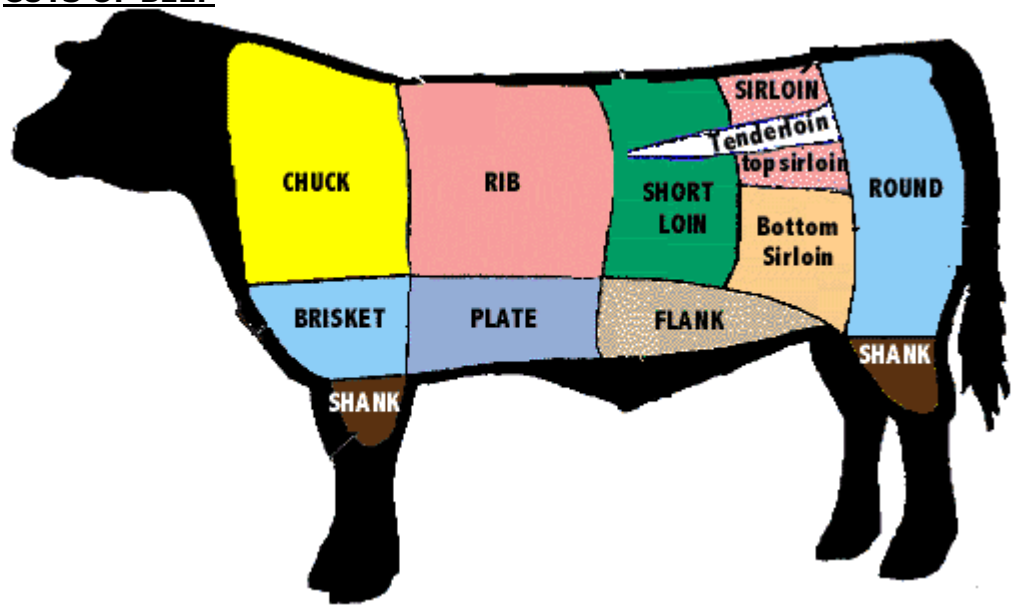
During the period in the cooling room the meat will go through a stage of setting (**rigor mortis**) and the muscles and joints become stiff. After a period of time the setting passes off and the carcass becomes relatively limp again. After the carcass has passed inspection and has been cooled to below 7°C (45°F), it is ready for storage prior to sale or further processing.

7.2 Cuts of Lamb, Pork, Beef / Veal

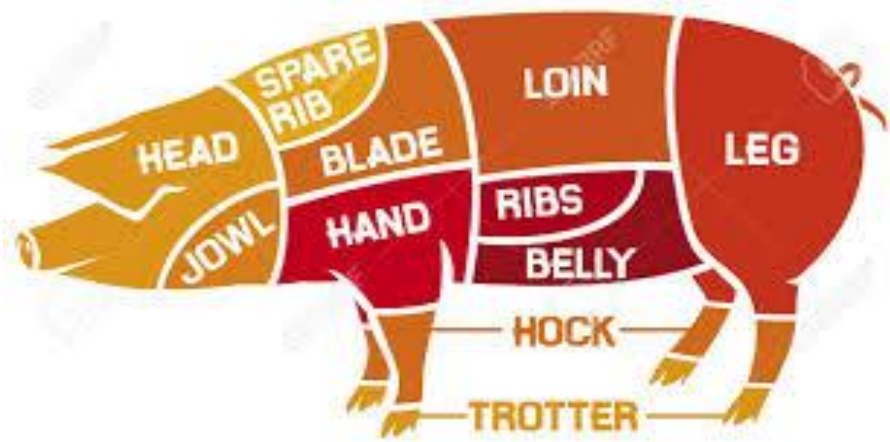
CUTS OF LAMB



CUTS OF BEEF



CUTS OF PORK



Meat cuts are based upon two factors:
1. The muscle and bone structure of the meat.
2. Uses and appropriate cooking methods of various parts of the animal.

Available Forms
Carcasses, Partial Carcasses, Primals and Fabricated cuts.

Carcasses
The carcass is the whole animal, minus entrails, head, feet and hide (except pork which has only the entrails and head removed, at times even the head is not removed). Whole carcasses are rarely purchased because of the skill and labor required in cutting and because of the problem of total utilization.

Sides, Quarters, Fore Saddles, Hind Saddles
These represent the first step in breaking down a carcass. Again, these larger cuts are no longer frequently used in food service.
Beef is split first through the backbone into sides. Sides are divided between the 12th and 13th ribs into forequarter and hindquarter. Veal and lamb are not split into sides but are divided between ribs 12 and 13 into fore saddle and hind saddle. Pork carcasses are not divided in this way. They are cut directly into primal cuts.

Primal or Wholesale Cuts
These are the primary divisions of quarters, fore saddles, hind saddles and carcasses. These cuts are still used to some extent in food service, because they are small enough to be manageable in many food service kitchens, are still large enough to allow a variety of different cuts for different uses or needs and are easier to utilize completely than quarters or halves.
Each primal may be fabricated, or cut up and trimmed, in several different ways. They are always the starting point for smaller cuts.

Fabricated cuts
Primal cuts are fabricated into smaller cuts for roasts, steaks, chops, cutlets, stewing meats, ground meat and so forth according to individual customer requirements.
Portion control cuts are ready to cook meats cut according to the customer's specifications. Portion control cuts require the least work for the cook of all meat cuts. They are also the most expensive.
Deciding which forms to purchase depends on the following four factors:
1. How much meat cutting skill do you or your staff have?
2. How much work and storage space do you have?
3. Can you use all cuts and lean trim on your menu?
4. Which form gives you the best cost per portion taking into consideration the labor cost as well?

Meat purveyors can usually cut meat more economically than food service operators. However some operations still do some of their own cutting as they feel that cutting their own meat gives them greater control over quality.

7.3 Variety Meats / Offal

Variety meats also known as offal include various organs, glands and other meats that don't form a part of the dressed carcass of the animal. For cooking purposes we can divide the most popular variety meats into two groups:

1. Granular Meats Liver, Kidneys, Sweetbreads and Brains.
2. Muscle Meats Heart, Tongue, Tripe and Oxtails.

Liver

Calf's liver is the most prized, because it is tender and delicate in flavour. It is easily recognized by its pale, pinkish colour. Most calf's liver is served pan fried, sautéed or broiled. Beef liver is also pan fried or broiled and even frequently braised. Pork liver is also available, but it is mostly in pates and sausages.

Kidneys

Veal and lamb kidneys are the most popular. They usually prepared by sautéing and broiling. Beek kidneys are stronger in flavour and less tender. They are usually braised in like steak and kidney pie etc.

Sweetbreads

Sweetbreads are the thymus glands of the calves and young beef animals (the glands gradually disappear as the animal matures). They are usually braised or beaded and sautéed in butter.

Brains

Brains are not a popular item but are delicate in both flavour and texture. Calf's brains are the most frequently used (Brains are very perishable and should be cooked as soon as possible. They may be poached or batter fried.

MUSCULAR VARIETY MEATS

Heart, tongue, oxtails and tripe are made of muscle tissue, just like other meats from his carcass. They are all tough and must be cooked for a long time by simmering or braising on order to be made tender.

Heart

Usually from veal or beef is very tough and lean. It can be chopped by braising or simmering or it may be ground and added to chopped meat for casserole dishes and meat loves.

Tongue

Cooked beef tongue is popular as a cold, sliced meat for sandwiches. It may be fresh, cured or smoked. Veal and lamb tongues are also available.

Oxtails

Oxtails contain flavourful meat and a rich gelatin content making them high desirable for soups and stews.

Tripe

Tripe is the muscular stomach lining of the beef animal (although lamb and pork tripe are sometimes available in ethnic markets). Honeycomb tripe is the most popular. It is cooked by several hours of simmering even most of the tripes that come from market has been partially cooked.

7.4 Selection and Storage of Meats

SELECTION

Beef Quality points :

Moist firm with bright red flesh

There should be no excessive fat

The lean meat should be flecked with fat which is known as marbling

The fat should be dry, creamy white in colour and odourless

The bones should not be brittle and when cut should have a bloody interior

Veal Quality Points:

Flesh should be pale pink in colour.

Flesh should be firm in structure, not soft or flabby.

Cut surfaces should be slightly moist, not dry.

The fat should be firm and pinkish white.

Bones, in young animals should be pinkish white, porous and with a degree of blood in their structure.

Lamb Quality Points:

Moist, firm and dull red flesh of fine texture
There should be no excessive fat
The fat should be clear, white, hard, brittle and flaky in structure.
Bones should be pink and porous in young animals.
The carcass should have a pleasant smell and a crisp skin, be compact and evenly fleshed.

Pork Quality Points:

Lean flesh should be pale pink, firm and of a fine texture.
The fat should be white, flat, smooth and not excessive.
Bones should be small, flat and pinkish.
The skin or rind should be smooth.

STORAGE

The quality of the finished product depends not only on proper selection and cooking of meats, but on proper storage as well. Fresh meat is highly perishable. The high cost of meat makes it essential to avoid spoilage.

Fresh meats

Check in purchases on arrival to ensure that purchased meat is of good quality. Do not wrap tightly. Bacteria and molds thrive in moist, stagnant places. Air circulation inhibits their growth. Store loosely, but cover surfaces with plastic wrap to prevent excessive drying.

Store at 32 to 36°F (0-2°C) meats does not freeze until about 28°F/-2°C. Keep meats separated in cooler and on worktable to avoid cross contamination. Use meat as soon as possible. Fresh meats keep well for only 2 to 4 days. Ground meats keep even less well, because so much surface area is exposes to bacteria. Cured and smoked products may keep up to a week. Do not try to rescue meats that are going bad by freezing them. Freezing will not improve the quality of spoiled meat. Keep coolers clean.

Frozen meats

Wrap frozen meats well to prevent burns. Store at 0°F (-18°C) or colder. Rotate stock first-in-first-out (*FIFO*). Defrost carefully. Tempering in the refrigerator is the best. Defrosting at room temperature encourages bacterial growth.

Do not refreeze thawed meats. Refreezing increases loss of quality and bacterial growth. Keep freezers clean.

8 Milk and Milk Products

8.1 Introduction,

Milk is the first food that we as infants would have had. Milk is also the natural food for mammals in the first stages of life.it is the near perfect single food containing proteins, carbohydrates, fat, minerals, and vitamins. However it is lacking in iron, vitamins C & D. It. is one of the most complete food because it contains the nutrients required by the human body. Milk is obtained from cow, buffalo as well as other domesticated animals.

COMPOSITION:

Components	Cow milk	Buffalo Milk
Water	85- 87 %	80%
Carbohydrates	5%	5%
Protein	3%	4.5%
Fat	4%	9%
Vitamins & Minerals	1%	1.5%

However, the composition does not always remain the same. This will vary slightly depending upon the species, the age and the feed of the animal. It will also depends upon the lactation periods and as the animal advances in age, the fat content will also increase. Animals who feed on green pastures have a higher vitamin A content in their milk.

NUTRITIVE VALUE:

Protein: Some of the most complete forms of proteins are found in milk. Casein is the main milk protein. It is not soluble in water and is very easily precipitated. By acid. This result in the curding of milk. Lacto globulin and lactobumin are the other two proteins that are found in milk. They coagulate easily on heating and are responsible for the precipitated found at the bottom and the sides of the pan used for the heating of milk. They are nor easily precipitated by acid.
Carbohydrates: The carbohydrates found in milk or milk sugar. Lactose is not very soluble in water and it is responsible for the sweet taste in milk. Lactose is not as sweet as sucrose. Lactose always tends to crystallized in milk powder during storage and results in lump formation and caking. It is also responsible for the texture in melted and frozen ice cream. In the souring of milk lactic acid bacteria convert lactose in to acid giving sour milk its characteristic flavor.
Fat: The fat constituents of milk is present in the form of cream. It is dispersed as fine globules.it is unstable and when heated rises to the surface where it forms a layer. It contains fat soluble vitamins A and D. Together with lactose, fat provides the energy in the diet.
Minerals and Vitamins: milk is rich in calcium, phosphorous, sodium, potassium and vitamin A.

PROCESSING:

From the time is milked from the animals to the sale, milk has to undergo processing to make it fit for human consumption. The various stages are:

1. Collection: Milk is brought to the diary in clean sterilized vessels made out of stainless steel.
2. Holding Tanks: This milk is immediately transferred to holding tanks s and is held at 10^0 to keep it safe. Cooling is either in a tank, jacketed with pipes. In which runs a brine solution.

Else the milk is run over cold water pipes.

3. Filtration: The milk is passed through a series of screens and filters to remove sediment and floating particles.
4. Pasteurization: It is a process of heating milk s to 62.7^0 C and holding it at that temperature for 30 minutes. This is known as the holder process of pasteurization .Nowadays the flash pasteurization is more commonly used. It is called as the HTST (High Temperature Short Time) method where the milk is heated to 71.6 C for only 15 seconds. Pasteurization makes milk safe for human consumption by destroying pathogenic germs (pathogens) It is also helps to increase the shell life. Flavor of the milk remains unaffected by heat treatment.
5. Homogenization: After pasteurization the milk is homogenized. At temperature of 60^0 C, it is passed under high pressure through a small opening of a machine called the homogenizer. The main purpose is to sub divide the fat globules in milk and disperse them evenly in the entire mass.Fat has a low density and tends to rise to the surface during heating. Homogenization prevents this by first breaking up the fat in to tiny particles and then dispersing them the milk. This adds to the flavor and results in a better body.
6. Bottling: The bottles of selected and uniform size have to be sterilized by steam and hot water and then they are filled with milk. These are then filled automatically and sealed with foil caps. Alternately nowadays milk is filled in plastic pouches and these are more economical, easy transported and save storage space. Plastic pouches are easily disposed and need not be cleaned for re use.
7. Sterilization: If bottles are being used, they are now heated for 30 to 40 minutes at temperature ranging from 104 – 110 ^{0} C in steam chambers called autoclaves and then allowed to cool. Milk can be sterilized before bottling. It is subjected to temperature of 135 – 150 ^{0} C for just 1 seconds. This is called the UHT (Ultra Heat Treatment) this process kills off all microorganisms and the very short holding temperature reduces the changes in color and flavor. The shelf life of UHT milk can be greatly increased by filling the milk in to specially designed tetra paks which are plastic coated and lined with aluminum foil.
8. Distribution: Distribution s of milk to various retail outlets should be done in specially designed refrigerated vehicles to ensure quality.

EFFECTS OF HEAT ON MILK:

Although casein is not very heat arguable, other proteins are, when milk is warmed, a skin begins to form due to the partial coagulation of lactobumin. On the continuous heating, the surface skin

dries out due to loss of moisture (because of evaporation) on the surface. This forms a barriers, which prevents from vapors from the bulk from escaping. As the milk continues to be trapped beneath the skin, causing the skin to bubble up and boil over. Changes in color and flavor and also occur due to slight caramelization of lactose.

TYPES OF MILK:

There are variety of market form in which milk is available. These includes:

1. Whole milk: Milk that has none of is fat removed. It generally contains 3.25% fat. This fat is not homogenized so the milk will have a cream line.
2. Steamed Milk: This has only 1% milk fat but the rest of the nutrients remain the same, except for the fat soluble vitamin. Skimmed milk is also called as toned milk. Very often skimmed milk is forfeited with fat-soluble vitamin.
3. Homogenized Milk: Has the same composition as whole fluid milk but the fat content is dispersed throughout the mass through the process of homogenization. There will be not cream line when this milk is heated.
4. Cultured milk: Production of cultured milk consist of deliberately souring milk by adding harmless bacteria .This prevents the milk from becoming totally unusable and can be developed in to a variety of product, which are nutritious and easily digestible.
5. Concentrated Milk: Will include condensed milk, evaporated milk, and dried milk powder:
    a. Condensed milk: This sweetened concentrated milk. From which moisture has been removed. It has 62% sugar concentration.
    b. Evaporated milk: This is unsweetened concentrated milk. After pasteurization the milk is evaporated under pressure in steam heated vacuum pans till the volume has been reduced to 60%.It is then homogenized, cooled and canned.
        A. Dried Milk and Milk powder: In this case water content is removed completely and thereby the bulk is reduced .It requires no special storage facilities and can be enriched and forfeited. There are two in which milk 1. Roller Drying : The milk is usually concentrated in an evaporator until it has 17% total solid (as against 11% in normal fluid drums) The milk is then fed on to the surface of twin heated drums operating at temperature of 150^0 C (303^0 F) The water content of the milk evaporates very quickly leaving behind a thin film of dried milk, which is then scrapped off by a blade that is attached to the drums. This is then cooled before being crushed in to a very fine powder. It is then saved and packed in to airtight container .Milk

powder if hygroscopic and will quickly absorb moisture from the air. Although roller drying is cheaper than the next method, it does develop cooked flavor and will not reconstitutes as easily it has a solubility of 85%.

B. Spray Drying: Here the milk is pre heated to 80 – 90 ^{0} C for 10 seconds. It is homogenized and concentrated at 43^0 C to about 40% of total solid. The milk is then atomized to a fine mist in a drying chamber containing hot air at 165^0 C (330^0 F).The very minute milk particles gives off their moisture content almost instantaneously and drop to the bottom of the drying chamber as tiny grains of dried milk. It's removed to be cooled as quickly as possible before bring packed in to airtight containers. It is more expensive than roller drying but has 98% solubility with less pronounced falvor changes.

6. Flavored Milk: Could be whole milk was skimmed milk to which flavor and color have been added.
7. Imitation Milk: Also called substitute milk are a recent development. The product does not contained and milk constituent, but contain glucose syrup and vegetable fat. It has a very low calorific value. Another substitute being promoted as a healthier alternative to milk is soya milk. Soya milk is much cheaper but leaves and unpleasant after taste and flavor. Imitation and substitute milk is ideal for those who are lactose intolerant i.e. allergic to milk.

USES OF MILK:

1. Served as a refreshing drink, both hot and cold.
2. Served as a beverage with tea and coffee.
3. The main ingredient in some sauces like béchamel.
4. Used to enrich dished like soups.
5. The main ingredient several desert like ice cream and puddings and custards.
6. The first food for new born infants.

STORAGE OF MILK:

Fresh milk should be purchased daily. Old and new milk should never be mixed. Left over milk at the end of the day can easily be converted into curds. Fresh milk should be stored at refrigerated temperature of 2^{0}C after boiling and cooling. Milk should be never be stored near strong smelling foods such as cut onions and peeled garlic as milk readily absorbs flavors and odors. Milk must never be stores exposed to sun light as riboflavin as very easily lost .UHT and canned (evaporated and condensed) milk must be stored at slightly lower than room temperature. When opened, they must be refrigerated immediately, Dried milk must be stored in airtight in a cool and dry storeroom.

Cream is a lighter portion of milk containing all the main constituents of milk, but in which the fat content is high and the solid (Nonfat) content is lower.

MANUFACTURE

Cream is commercially separate from milk in a creamery, by means of a mechanical separator. The milk is first heated to between 30 - 49 ^{0}C (90-120^{0}F) before being run in to the separator which operates on centrifugal force, rotating at a very high speed. This forces the milk which is heavier to the outside while the cream, which is lighter remains at the center the cream and the skimmed milk are drained out through separate outlets. The skimmed milk is than heated to 79.5^{0}C (175^{0}F) to kill of any harmful bacteria before being further process in to dried milk etc. Cream can also under go other process such as homogenization to thicken the cream.

TYPES OF CREAM

There are verity of creams available in the market each having a different fat contain.

Types of Cream	Fat Content
Single Cream	18%
Whipping Cream	35%
Double Cream	48%
Double Thick Cream	50%
Sterilized half Cream	12%
Sterilized Cream	23%
Clotted Cream	55%

Reconstituted cream is made by emulsifying butter with skimmed milk or skimmed milk powder this is not true cream but a substance, which resemble it in appearance. Imitation a synthetic cream is made by the emulsification of vegetable fat with dried egg and gelatin and then sugar and flavoring are added. This get easily contaminated and a liable to cause food poisoning however it is frequently used in the food processing and catering business.

USES OF CREAM

1. **To serve with hot or cold coffee and chocolate.**
2. **To serve as an accompaniment (Fruit Salad)**
3. **To be used for decorative purpose and for garnishes**
4. **To enrich soups and sauces to obtain smooth texture**
5. **As a main ingredient in certain desert such as ice-cream and custard**
6. **For topping such as ganache and truffle**

STORAGE OF CREAM

Fresh cream must be treated in the same way as fresh milk as par as storage is concern. Cream must be covered

and stored in sterilized container in the refrigerator. The ideal storage temperature for a cream is 2^0 C (35^0F) reconstituted and imitation must be refrigerated and consumed the same day.

THE WHIPPING OF CREAM

Since cream is to be whipped very often, a few observation on this point must be noted.

1. **Cream must obtain minimum 30-38% F**
2. **Avoid using homogenized cream. This will not whip satisfactorily. When whipping cream tiny air bubbles are trapped and surrounded by the fat globules in the cream. Homogenized cream will have had the majority of the fat globules broken down and they will not be sufficient and strong enough to trap and hold the air cells.**
3. **The cream and utensils used for whipping must be child to below 8^0 C (46^0F)**
4. **The utensils must be sterilized previously.**
5. **Glass or stainless steel containers are ideal for whipping cream. Avoid using aluminums as it tends to discolor the cream Turning it dull grey.**

8.3 Butter – Introduction, Processing & Types

Butter is the product obtained by churning fresh cream. It consist of more than 80% butterfat and small amount of proteins, vitamin A 7 D, minerals, lactose and water. Butter must have minimum of 80% fat content, non-fat solid content of 2% and a maximum of 16% moisture (water).While milk is oil in water emulsion, butter is water in oil emulsion.

COMPOSITION:

The averages composition of butter is:

Fat	**82.5%**
Protein (casein)	**1.5%**
Lactose	**2%**
Salt	**2%**
Water	**12%.**

FACTORS THAT AFFECTS QUALITY OF BUTTER:

1. **The breed of the cow from which the milk was obtained.**
2. **The type of fed that was available for the cow.**
3. **he method of manufacture.**
4. **The efficiency of manufacture.**
5. **whether or not the butter was blended.**
6. **The addition of salt and coloring.**
7. **The method of packing and storing.**

CLASSIFICATION;

There are two main types of butter:

- **Fresh or sweets cream butter.**
- **Ripened or lactic butter.**

Besides these two, there are also blended and milk butter and special butter..

BLENDED BUTTER:

This is a blend butter from different regions or countries. They are mixed together to obtain a uniformly acceptable product at a competitive price.

SPECIAL BUTTERS:

This groups includes some uncommon butters those which are not true butters. These includes:

1. **Whey Butter: The fat content of the whey obtained from the curd in cheese making may be used to product butter, or it may be added to fresh cream/ milk prior to being processed in to butter. Due to its origin, this butter has a faint cheesy flavor.**
2. **Milk Blended Butter: Quantities of milk are blended in to butter, thereby increasing the moisture content to 24% (maximum)**
3. **Powdered Butter: This is a spray dried butter containing 80% milk fat and non-fatty solids. It is produced on a large scale in Australia and is used mainly in the bakery trade.**
4. **Compound butter; This is made by adding particular natural flavor or color, which will depend on the type of food with which it is served. It is generally used as an accompaniment e.g. Lobster butter, parsley, butter.**
5. **Cocoa and Peanut butter: These are not true butters. They are obtained by crushing the cocoa bean or the peanut nibs. The resulting pastes are emulsified and used as flavoring.**

USES OF BUTTER:

The catering uses of butter are endless and without doubt will enhance the product in to which it is added.

They are available in three sizes:

- **Individual portions or pats 10GMS.**
- **Blocks of 100GMS**
- **Blocks of 500GMS**

8.4 Cheese – Introduction, Classification with Examples, Processing, Types, Cooking with Cheese and Uses.

According to legend cheese has its origin in the Middle East

It was made by accident when Shepherds carried milk in a pouch made from the lining of the sheep stomach. The combination of the heat of the sun and the enzymes rennin present in the lining of the stomach curdled or separated the milk in to curds and whey.

DEFINITION:

Cheese may be defined as the fresh or matured product made by coagulating any or a mixture of any of the following , Substance like milk, cream, skimmed milk, partly skimmed, milk reconstituted dried milk, or butter milk and then partially or completely draining away the when resulting in any such coagulation.

Cheese making is a very convenient method for converting a very considerable part of milk nutrients into a product i.e. less bulky and milk keep well; is of high nutritive value and is palatable and easily digestible.

There are over 400 listed verities cheeses, which differ in color, taste, texture and order.

CLASSIFICATION

Cheese may be classify under any one of the following headings:

1. **The country of origin : Danish and French Roquefort**
2. **The method of manufacture: Including the types of milk used. This will result in a hard, semi hard or blue veined cheese**
3. **General aspects : like size, color, texture**
4. **Moisture content : Soft 40- 75 % (Camembert)**
   Hard 20-40% (Stilton)
5. **On the basis of ripening : The cheese will have a mild or strong flavor**

RIPENING:

Ripening is the change in physical as well as chemical properties such as flavor, aroma, texture, composition which occurs between the times of precipitation of the curds at the time when the cheese develops it characteristics.

The following changes takes place during the ripping process:

1. **Lactose is converted into lactic acid**
2. **Proteins are broken down into amino acids**
3. **Fats ate broken down into fatty acids**
4. **Gas formation (CO_2) takes place**
5. **Development of aroma**
6. **Changes in color**
7. **Changes in texture**

The following factors will affect the characteristic of cheese

1. **The types of milk or milk fractions that are used**
2. **Temperature high – for hard chesses Low – for soft chesses**
3. **Acidity Putrefactive bacteria-amount of lactic acid produced**
4. **Humidity- Controls the growth of mouse molds**
5. **The type of precipitating agent that is used**
6. **Amount of pressure used to remove the moisture**
7. **Use of salt it will affect the growth of bacteria**
8. **Length of time allowed for the repining**
9. **The addition of molds and bacteria**
10. **The type and size of the mold**

MANUFACTURE OF CHEESE

The various stages involved are

1. **Heating of the milk the first steeps involves the heating of the milk. The range of is between 10^0C and 65^0C .The optimum temperature is 37^0 C. At the 10^0 C the resulting cheese will be form. At in between temperature, we will get a semi hard or semi soft cheese.**

   Examples: Soft Cheese: York
   Coulommiers
   Neufchatel

   Semi hard Cheese: Edam
   Gouda
   Limburger
   Brick

   Hard Cheese: Cheddar
   Gruyere
   Emmental.
   Double Gloucester

2. **Addition to the curd: Curds or lactic acid producing bacteria are added to the heated milk to help the coagulation process. The mixture is maintained at various temperature depending upon the desired end product. This is called the setting period; 20^0 C to 26^0 C for soft cheese. 30^0 C to $32^{0\,C}$ for hard cheese.**
   The right amount o lactic acid producing bacteria is added to arrive at the correct amount of acidity required. Rennet will be act well in an acidic medium.
3. **Addition to Rennet: This along with the setting temperature and the amount of acid produce will largely govern the rate act well in an acidic medium.**
4. **Separating the Whey: Once the milk has coagulated the milk solid separate from the whey. This whey is then allowed to drain away. The amount of whey that is drained away will is then the textures of the cheese.**
5. **Cutting the curds: This process allows the further separation of the whey. The cutting is done mechanically with the help of two large blades. One horizontal and other vertical. This cuts the curds in to cubes and helps to free any whey still trapped in the curds.**
6. **Cooking the curds: After cutting, the curds are cooked at low temperature, which are then raised slowly to 43^0 C and held there for an hour. This process facilitates further removal of whey. If the temperature is raised further, a firmer cheese will result.**
7. **Pilling of the curds: The curds is now cut in to blocks and piled up one over the other. This allows the curds to form a solid mass and a further development of thee starter culture. At this stage the curds begin to develop characteristics and properties relating to texture and flavor. At this stage other organism and cultures also to be added. This also helps to develop individual flavor and well as the veining of the cheese (blue cheese).**

8. **Milling and Salting: The now dry curds are milled in to small fragments and salts is added. Salting influences many factors – flavors, moistures content, texture, it checks the lactic acid producing bacteria.(this also same time it permits the development of specific ripening microorganisms.**
9. **Pressing the Curds: This gives the cheese its characteristics shape, size and color texture. At this stage the cheese is known as green cheese or immature cheese.**
10. **Ripening and Maturing: During this stage, the green develops the characteristics favor. Texture is also consolidated. The main constituents of cheese are broken down in to simple substances:**

    Proteins in to Amino Acids.

    Fats to fatty acids.

    Lactose to simple sugars.

    Other by product like certain gases Co2, alcohol aldehydes, ammonia, sulphur.

CURING OF CHEESE:

Instead of ripening and maturing the cheese may be cured. The green cheese is plated in well ventilated rooms on racks. The temperatures must be maintained at 13^0 C and at a humidity of 80 – 90%.Then bacteria molds etc are added to bring about changes is flavor and character. The cheese may now be smoked to dry out the moisture or covered with wax to prevent moisture loss.

TYPES OF CHEESE:

The main types of cheese are:

1. **Un-ripened soft cheese .e.g. Cottage cheese, cream cheese, Neufchatel.**
2. **Ripened in molds by bacteria .Eg, Bric and Camembert.**
3. **Ripened by bacteria e.g., Limburger.**
4. **Semi-hard, ripened by bacteria molds E.g., Gorgonzola, Roquefort, Stilton**
5. **Semi hard, ripened by bacteria. E.g., Brick, Muster.**
6. **Very hard cheese without gas holes E.g., Cheddar, Cheshire**
7. **Very hard cheese with gas holes E.g., Gruyere, Emmental**

The main uses can be listed as:

1. **As spread for bread, toast and scones.**
2. **As a basic ingredients in pastry making.**
3. **As a main ingredients in cake making**
4. **To enhance the taste and flavor of soups and sauces.**
5. **As a cooking medium.**

STORAGE:

Butter is perishable product and tends to flavor and go rancid on prolonged storage.

1. **It must be stored at refrigerated temperatures 2^0 c (35^0 F)**
2. **If purchased in bulk, it can be frozen at – 25^0 to – 30^0 C (-10 to - 20^0 F) for several months.**
3. **Do not expose to sunlight as it sunlight as will lose vitamin A and go rancid faster.**
4. **Ripened butter has a shorter keeping quality.**
5. **Salted butters last longer than unsalted butters.**

PACKAGING:

The finished cheese is now packed. Packing besides helping in storage also helps to identify cheese with their distinctive appearance .Straw card board and metal as well as polythene nowadays are as well all pack cheese prior to sale.

PROCESSED CHEESE:

It is the process of mixing green cheese with cured cheese of the same type or blending different varieties of cheese. These May then treated and suitable emulsifier are added. Salt acids, and flavoring are also added and heated to a temperatures of 65 ^{0} C - 85 C .If the cheese is heated further, the ripening process is prevented Processed cheese is very mild in taste.

A modification of processed cheese is Club Cheese also called cold pack place. Processed cheese is a very popular items and can be sliced or solid in individual portions or cubes/ triangles, it combines well with other ingredients and its ideal in solid and as a garnish or flavoring, processed cheese is also a good way to use up inferior quality cheese as it is blended.

COOKING OF CHEESE:

Cheese is a concentrated form of proteins and like all other proteins. It is toughened by heat. All cheese dishes such as fondues, must be cooked at low temperature. While melting softer cheese, a double boiler is preferable to direct heat. When cheese melts it is cooked. Overcooking will produce the same toughening effects as cooking at high temperature. Cheese can be grated and then diluted with a starchy product such as flour, macaroni or even breadcrumbs .A pinch of soda bi carb could be added to prevent stringiness and will make the chase more digestible.

While cooking cheese moist methods must be used as far as possible. Cheese should be added at the last possible minute or during re heating.

SELECTION OF CHEESE:

When selecting cheese keep the following points in mind:

1. **The rind, if any, should not dry, with mildew or have a fungus growth.**
2. **There should not be any strong smell from the cheese as this is indicative of putrefactive bacteria at work .**
3. **Semi hard, hard and blue veined cheese should not appear dry.**
4. **Soft and creamy and processed cheese must not appear watery, but of a delicate creamy consistency.**

STORAGE OF CHEESE:

All cheese should be eaten fresh soon after they are purchased, while they are still in prime condition. They will have maximum flavor, aroma, and taste. In order it maintain this condition, cheese must also be stored correctly so that the reach the customer in prime condition. Soft and unripen cheese has a short shelf life and therefore should be properly wrapped when refrigerated. Particular care must be taken of soft cheese as they tend to lose their falvor and becomes over ripe and unacceptable.

Hard and semi hard cheese must be stored at fairly low temperature to avoid deterioration .Cheese should be stored in their original wrapper, once open or cut .Aluminum foil or plastic wrap or even a moist cloth could be also be used. Grated cheese must be stored covered. as it tends to lose it moisture very quickly. Hard cheese like Edam and Gouda are ideal for freezing and should be cut in to pieces before placing in the freezers where it will keep for 1 and 2 months.

USES OF CHEESE:

1. **On the cheese boards as a course of the menu during both lunch and dinner.**
2. **As a part of the cold buffet.**
3. **As a cooking ingredients.**
   - **In sauce like Mornay and cheese.**
   - **As an accompaniment to certain dishes like soups and pastes.**
   - **As a filing in sandwiches and in other snacks.**
   - **As a topping (pizzas) and filing (savory pastries and puffs)**
   - **On its own as in fondues.**

9 Bakery & Pastry

Shortening – Fats and Oils

The difference between fats and oils is the melting point. Generally any that are liquid at 15c are termed as oils and ones which are plastic at that temperature are termed as fats.

There are 3 types of oils-

1. MINERAL OILS- they are a product of the petroleum and the coal industries and are used as fuel for preparation of food items.
2. ESSENTIAL OILS- they are aromatic extracted from orange, lemon, almond, etc. And are mainly used for flavoring purpose.
3. FIXED OR GREASY OILS- they are fats and oils of animals, plants and vegetable origin. They are chemically known as tri-glycerides. They are known as fixed oils because they do not evaporate or lose weight when distilled with water. A glyceride is combination of glycerin and fatty acids. Its the combination of glycerides that determines the physical nature of fat: hard fat, plastic fat or an oil.

FUNCTION OF FAT IN BAKERY PRODUCTS.

1. Enriching agent
2. Shortening agent
3. Air retainers
4. Flavoring agents

Fats used in bakery are composed of.

1. Animal fats
2. Animal oils
3. Vegetable fats
4. Vegetable oils.

Fats and oils are made up of basic units called fatty acids, each type of fat or oil is a mixture of different fatty acids. Fatty acids may be thought of as the building blocks of fats. Not only is fat an important energy providing nutrient, some dietary fat is needed for the body to function properly. The difference between fats and oils is melting point. Generally any that are liquid at 15c are termed as oils and these which are plastic at temperature are termed as fats. Fat, such as butter, shortening or oil is an essential ingredient in all baking.

9.1 Saturated and Un-saturated Fats

SATURATED FATS- saturated fats are mainly animal fats. They are found in meat, seafood, whole-milk dairy products (cheese, milk, and ice cream), poultry skin, egg yolks. Fats in food contain both saturated and unsaturated fatty acids. In general fats containing a majority of saturated fatty acids such as lard and butter are solid at room temperature. Some plant foods are also high in saturated fats, including coconut oil, palm oil, palm kernel oil. Saturated fats raise total blood cholesterol levels more than dietary cholesterol because they tend to boost both good HDL and bad LDL cholesterol. The net effect is negative, meaning its important to limit saturated fats.

TRANS FATS- trans fatty acids are fats produced by heating liquid vegetable oils in the presence of hydrogen. This process is known as hydrogenation. The more hydrogenated oil the harder it will be in room temperature. For eg. Spreadable tub margarine is less hydrogenated and so has fewer trans fats than stick margarine. Most of the trans-fat is in the diet are found in commercially prepared baked goods, margarines, snacks foods, and processed foods. Commercially prepared fried foods, like French fries and onion rings, also contain a good deal of trans fat. Trans fatty Acids are formed when vegetable oils are processed into margarine or shortening. Sources of trans fats in the diet include snack foods and baked goods made with "partially hydrogenated vegetable oil" or "vegetable shortening". Trans fatty acid also occur naturally in some animals products such as dairy products.

Unsaturated Fats—Polysaturated and Monounsaturated:- Unsaturated fats are found in products derived from plants sources, such as vegetable oils, nuts and seeds. They are liquids at room

temperature. There are two main categories: polyunsaturated fats(which are found in high concentration in sunflower, corn, and soybean oils) and monounsaturated fats (which are found in high concentration in canola, peanuts, and olive oils). In studies in which polyunsaturated and monounsaturated fats were eaten in place of carbohydrates, these good fats decreased LDL levels and increase HDL levels. Oils such as soybean, canola, cottonseed, corn and other vegetable oils, which are liquid at room temperature, are considered unsaturated fats.

9.2 Advantages & Disadvantages of Using Fats

Advantages

Eating unsaturated fats, which primarily come from plant sources and are liquid at room temperature, is advantageous to your body's health. Unsaturated fats, also referred to as good fats, reduce inflammation, stabilize your heartbeat and reduce low-density lipoproteins. This LDL cholesterol increases your risk for heart disease. Polyunsaturated fats found in foods such as salmon, tuna and walnuts contain omega-3 fatty acids, which help lower triglycerides and LDL cholesterol. Vegetables oils, including corn, soybean, safflower and sunflower oil, are also polyunsaturated fats - PUFAs. Monounsaturated fats -- MUFAs -- include olive oil, canola oil and peanut oil.

Disadvantages

Consuming saturated fats and trans fats is disadvantageous to your body's health. Saturated fats are solid at room temperature and are found mostly in animal foods, such as meat, butter, cheese and whole milk, but they can also come from tropical plants -- palm and coconut oil. They raise LDL cholesterol levels as well as total cholesterol levels. Trans fats are formed using a process known as hydrogenation. They not only raise LDL, or bad cholesterol, but also lower HDL, or good cholesterol. Many processed and prepackaged foods are high in trans fats.

9.3 Varieties of Shortening

1. Animal Fats;

a)Butter : it is made by churning milk fat after it is ripened. It attributes to flavour and the aroma of the baked product. The texture should be firm and plastic. It should be able to cream well and hold maximum amount of egg without curdling provided the creaming is carried out properly.

b) Lard :- this is fat obtained from the pig a healthy one free from rancidity contained not more than 1% of substances other than fat. Lard has no creaming properties and its main use in the bakery for frying. It is high in food value and easily digestible.

c) Beef tallow or oleo :- this is obtained from oxygen and is more familiar as suet. The fat obtained from oxygen are of high quality and are used in manufacturing of margarine.

d) Mutton tallow :- it is solid hard fat obtained from the sheep.

e) Suet :- rendered fat from cattle.

2. Animal oil :- it is obtained from the whale. Apart from lard oil, it is the only animal fat used as a bakery shortening. It is obtained from the blubber of the whale.

3. Vegetable fats :-

a) Palm and palm kernel fat :- both are obtained from species of palm grown in West Africa. The oil obtained from the flesh is reddish in colour and so it is bleached. The fat content of the fleshy part of the fruit is 60%.

Both fats are used extensively in the fat industry for the manufacturing of margarines and shortenings.

b) Cocoa butter :- this is extracted from the cocoa beans during the process of manufacturing chocolate. It is hard, brittle fat, yellowish in colour with an odour and flavour of chocolate. Cocoa butter is not used in the manufacturing of margarines and shortenings.

c) Coconut fat :- it comes from the coconut palm the flesh contains 40% fat . The flesh is dried and oil extracted from that .

d) shea butter: - it is obtained from a tree grown in west Africa and the fruit yields butter which is stiff and when refined is free from aroma and taste .

4**) Vegetable oil :-**

There are 3 types of vegetable oils.

1) non drying oils – olive oil, groundnut oil, arachis oil(fruit from south America) and almond oil.

2) semi drying oils- soybean oil, rap seed oil and cottonseed oil.

3) drying oil- linseed oil.

Margarines and shortenings

margarine is a intimate mixture of blend of hardened and liquid oils that may either be of animal and vegetable origin. The oils are mixed with ripened milk and other additions and processed to form a very stable emulsion of oil and water that is commonly known as "Margarine". Almost all margarines manufactured in India are made from vegetable oils. To affect plasticity it is customary to balance the blend with approximately equal amounts of liquids and hardened oils. The fats and oils are colourless , odorless , bland in taste and of the highest quality.

Pastry margarine is the softest pliable margarine that is toughened by the addition of oil, thus enabling margarine to withstand the manipulation entailed in the manufacturing of puff pastry

5) Shortenings

Shortenings are used as lard substitutes in U.S.A. the introduction of commercial process of hydrogenation enabled the manufacturers to use the softer animal fats and a choice of hardened margarines and vegetable oils

There are many grades and the 2 distinct types are distinguished by color into white and golden . Shortening is utility fat and is used for various purposes such as creaming. It possess good creaming properties, of a soft consistency, resistant to rancidity and does not foam when used used for frying.

Special cake fats:-

They are high grade shortenings with high emulsifying powers and is used for high ratio cakes . They are capable of holding a high level of egg and milk without curdling.

Pastry fats :-

they have a lower melting point than pastry margarine but sufficiently plastic and suitable for pasty .

Cooking oil :-

These are 100% oil and because of their low melting points are liquids at low temperatures. They are used in cakes of cheaper quality, frying and tin greasing. Because they are liquids they do not have any creaming properties.

TEA

Introduction:

After water, tea is the most widely-consumed beverage in the world. It has a cooling, slightly bitter, astringent flavour which many enjoy. There are over 3,000 types of tea in the world. Amazingly, all 3,000 plus of these teas come from the same plant, camellia sinensis. Variations in growing region, time of harvest, parts of the plant harvested, plant variety, processing method, and numerous other factors make the key differences between, say, a delicate Silver Needle white and an assertive Second Flush Assam black. Selecting teas you like and developing your palate doesn't have to be an arduous task. Once you understand what you are buying and/or drinking, your foray into the world will be much easier. Tea or Camellia Sinensis is an evergreen plant that grows mainly in tropical and sub-tropical climates. Nevertheless, some varieties can also tolerate marine climates. Tea plants require at least 50 inches of rainfall a year and prefer acidic soils. High-quality tea plants are cultivated at elevations of up to 1,500 metres (4,900 ft); at these heights, the plants grow more slowly and acquire a better flavour. A tea plant will grow into a tree if left undisturbed, but cultivated plants are pruned to waist height for ease of plucking. The names popular around the world are derived from Chinese character of the word tea. One is tea and the other is cha.

Producing Region/Countries

In 1835 the English East India Company, upon discovery of an indigenous variety of Camellia Sinensis in Assam , India , established their first experimental tea plantation there. It was largely unsuccessful at the beginning. In 1856 varieties of tea from the Yunnan and Keemun provinces of China were introduced in Darjeeling , India , and soon thrived. Some of the most prized and expensive Indian black teas come from this high mountain region. One year later tea was cultivated in Ceylon (Sri Lanka). Luckily, for tea growers and consumers, a fungus wiped out the coffee crop in Ceylon in 1869, then its' main export. This opened the door to increased tea production and exportation. By the early 1900's tea was being cultivated in Java, Sumatra , Indonesia, Kenya and other parts of Africa . Presently, the United States has been added to the list of tea producers as there is one plantation in North Carolina.

TYPES OF TEAS:

1. White Tea

White tea is similar to green tea, in that it's undergone very little processing and no fermentation. But there is a noticeable difference in taste. Most green teas have a distinctive 'grassy' taste to them, but white tea does not. The flavour is described as light, and sweet. You should steep white tea in water that is below the boiling point. There is also considerably less caffeine in white tea than the other varieties (15mg per serving, compared to 40mg for black tea, and 20mg for green). Some studies have also shown that white tea contains more active cancer-fighting antioxidants than green tea. As with all teas, there are many varieties of white tea, with poetic names such as: white peony, golden moon, silver needle and white cloud. White teas are produced mostly in China and Japan, but the Darjeeling region of India also produces some fine white teas.

2. Green Tea

Green tea is nothing more than the leaves of the camellia sinensis that have been processed a certain way. Green teas, like white teas, are closer to tasting like fresh leaves or grass than the black or oolong. They are also lower in caffeine and have higher antioxidant properties.
Preparation
First, the green leaves are seen how much oxidation should take place before drying them out. Tea leaves have enzymes in their veins. When the leaf is broken, bruised, or crushed, the

enzymes are exposed to oxygen resulting in oxidation. The amount of oxidation depends upon how much of the enzymes are exposed .

Processing of Green Tea

The processing of green tea is similar to that of white tea in that it does not oxidize. After the leaves are plucked, they are (sometimes) laid out to wither for about 8 to 24 hours. This lets most of the water evaporate. Then, in order to neutralize the enzymes thus preventing oxidation, the leaves are steamed or pan fried. Next the leaves are rolled up in various ways and tightness. After that, a final drying takes place. Since no oxidation took place, the tea has more of a green appearance. From there, it goes off to be sorted, graded, and packaged.

3. Oolong Tea

Oolong teas are the most difficult of the four types of teas to process. The best way to describe oolong tea is that they are somewhere in between green and black tea. This is because they are only partially oxidized during the processing. Oolong tea is gently rolled after picking allowing the essential oils to react with the air and slowly oxidize. This process turns the leaf darker with time and produces distinctive fragrances. When the leaf has reached the desired oxidation the leaf is heated, in a process called 'panning', to stop the process. It's then rolled to form the tea into its final shape. The resulting tea can be anywhere between a green and a black, depending on the processing method. This tea is handcrafted, undergoing a labour intensive process. The tea maker must carefully balance many elements in the critical few hours after the leaf is picked including weather conditions, quality of the leaf, and the time the leaf oxidizes. The finest Oolongs are often prepared and enjoyed Gung Fu style to savour their complex tastes and fragrances.

Processing

The processing of oolong tea requires only a partial oxidation of the leaves. After the leaves are plucked, they are laid out to wither for about 8 to 24 hours. This lets most of the water evaporate. Then the leaves are tossed in baskets in order to bruise the edges of the leaves. This bruising only causes the leaves to partially oxidize because only a portion of the enzymes are exposed to air.Next, the leaves steamed in order to neutralize the enzymes and stop any oxidation. Oolong tea can have varying degrees of oxidation. Some are closer to black teas, and some are closer to green.

4. Black Tea

Black teas are the most consumed of the four types of teas. They are the highest in caffeine. Black tea is the most popular tea in the world. It is the tea most widely used in making iced tea and English tea. Since the process of making black tea consists of three main stages, ‘cut’, ‘torn’ and ‘curled’, it is also known as C.T.C tea. After cutting, the leaves are first spread on shelves called withering racks. Air is blown over the leaves to remove excess moisture, leaving them soft and flexible. These withered leaves are then crushed between the rollers of a machine to release their flavoured juices. In the tearing process the cells of the leaves are exposed and the oxidation process begins. They are then taken to the fermenting room where under controlled temperature and humidity, they change into copper colour. Finally they are dried in ovens, where they are curled by heat and become brownish black.

It is made by steaming the leaves in large vats. The steaming prevents the leaves from changing its green colour, hence the name. The leaves are then crushed in a machine and dried in ovens. It is produced by using many of the same techniques that were practiced centuries ago.

5. Pu-erh Tea

Pu-erh teas come from the Yunnan province in China and have a strong earthy flavor. Pu-erh has been praised for generations for it's flavor and health benefits. It's processed according to

an ancient technique (which used to be a state secret) that involves aging the leaves. It is often formed into bricks and is one of the few teas that ages well. Pu-erh tea is moderate in taste, not as strong as black tea. It can cut grease, help digestion, warm stomach, help produce saliva and slake thirst, dispel the effects of alcohol and refresh one's mind.
Pu-erh tea has functions of lowering the triglyceride, cholesterol, hyperuricemia in the body.

6. Scented Tea

Scented or Flower tea is either green or white tea that has been infused with certain flowers, which impart a delicate and interesting taste, and of course a wonderful aroma. As with black tea and milk or sugar, flowers were added to green tea originally to disguise a less than favorable taste in the poorer varieties. This is still the case with many commercially produced flower teas, which hide the taste of very cheap tea behind a strong flowery presence. Flower teas, in particular the delicious jasmine, have gained such a following both in Asia and the Western world, that many people only drink this variety. The Seven Cups jasmine teas combine really fine quality green and white teas with a subtle but distinct jasmine flavour, and are a real treat, especially for dedicated jasmine fans.

Top 10 tea brands in world,

Tetley
Yorkshire Tea
Bigelow
Lipton
Dilmah
The Republic of Tea
Harney & Sons
Tazo
Celestial Seasonings
Twinings

COFFEE

Coffee is a brewed drink prepared from roasted seeds, commonly called coffee beans, of the coffee plant. They are seeds of coffee cherries that grow on trees in over 70 countries. Green (unroasted) coffee is one of the most traded agricultural commodities in the world. Due to its caffeine content, coffee can have a stimulating effect in humans. Today, coffee is one of the most popular beverages worldwide. It is thought that the energizing effect of the coffee bean plant was first recognized in Yemen in Arabia and the north east of Ethiopia, and the cultivation of coffee first expanded in the Arab world. The earliest credible evidence of coffee drinking appears in the middle of the fifteenth century, in the Sufi monasteries of the Yemen in southern Arabia. From the Muslim world, coffee spread to Italy, then to the rest of Europe, to Indonesia, and to the Americas. Coffee has played an important role in many societies throughout history. In Africa and Yemen, it was used in religious ceremonies. As a result, the Ethiopian Church banned its secular consumption until the reign of Emperor Menelik II of Ethiopia. It was banned in Ottoman Turkey during the 17th century for political reasons, and was associated with rebellious political activities in Europe. Coffee berries, which contain the coffee bean, are produced by several species of small evergreen bush of the genus Coffea. The two most commonly grown are the highly regarded Coffea arabica, and the hardier Coffea canephora (also known as Coffea robusta). The latter is resistant to the devastating coffee leaf rust (Hemileia vastatrix). Both are cultivated primarily in Latin America, Southeast Asia,

and Africa. There is a third variety called the Coffea Liberica, slightly inferior but also popular. Once ripe, coffee berries are picked, processed, and dried. The seeds are then roasted to varying degrees, depending on the desired flavour. They are then ground and brewed to create coffee. Coffee can be prepared and presented in a variety of ways.
An important export commodity, coffee was the top agricultural export for twelve countries in 2004, and in 2005, it was the world's seventh-largest legal agricultural export by value. Some controversy is associated with coffee cultivation and its impact on the environment. Many studies have examined the relationship between coffee consumption and certain medical conditions; whether the overall effects of coffee are ultimately positive or negative has been widely disputed. However, the method of brewing coffee has been found to be important.

Coffee Producing Region/Countries

Brazil is the largest producer of coffee and the second largest coffee-consuming nation. Its coffee sector employs over five million people and contributes 40% of the world's total coffee supply. Vietnam is the second largest producer of coffee in the world, accounting for 16% of global production. It is the main producer of Robustas. Coffee production in Vietnam creates jobs for more than 1 million workers.
Colombia is the second-largest supplier of Arabica coffee after Brazil. 2,4 million Colombians economically depend on coffee production (25% of the country's rural population).
Indonesia is the world's second-largest exporter of Robusta. Indonesian coffee is produced by an estimated 1.5 million smallholder farmers. Ethiopia is the largest coffee producer in Africa. The EU is the primary market, accounting for 60% of sales. Ethiopia's 1.2 million smallholder farmers contribute over 90% of production.

Types of Coffee

Decaffeinating

• If the coffee is to be decaffeinated, it is now processed using either a solvent or a water method.
o In the first process, the coffee beans are treated with a solvent (usually methylene chloride) that leaches out the caffeine. If this decaffeination method is used, the beans must be thoroughly washed to remove traces of the solvent prior to roasting.
o The other method entails steaming the beans to bring the caffeine to the surface and then scraping off this caffeine-rich layer.

Roasting

• The beans are roasted in huge commercial roasters according to procedures and specifications which vary among manufacturers (specialty shops usually purchase beans directly from the growers and roast them on-site). The most common process entails placing the beans in a large metal cylinder and blowing hot air into it. An older method, called singeing, calls for placing the beans in a metal cylinder that is then rotated over an electric, gas, or charcoal heater.
• Regardless of the particular method used, roasting gradually raises the temperature of the beans to between 431 and 449 degrees Fahrenheit (220-230 degrees Celsius). This triggers the release of steam, carbon monoxide, carbon dioxide, and other volatiles, reducing the weight of the beans by 14 to 23 percent. The pressure of these escaping internal gases causes the beans to swell, and they increase their volume by 30 to 100 percent. Roasting also darkens the color of the beans, gives them a crumbly texture, and triggers the chemical reactions that imbue the coffee with its familiar aroma (which it has not heretofore possessed).
• After leaving the roaster, the beans are placed in a cooling vat, wherein they are stirred

while cold air is blown over them. If the coffee being prepared is high-quality, the cooled beans will now be sent through an electronic sorter equipped to detect and eliminate beans that emerged from the roasting process too light or too dark.
• If the coffee is to be pre-ground, the manufacturer mills it immediately after roasting. Special types of grinding have been developed for each of the different types of coffee makers, as each functions best with coffee ground to a specific fineness.

Instant coffee
• If the coffee is to be instant, it is I V brewed with water in huge percolators after the grinding stage. An extract is clarified from the brewed coffee and sprayed into a large cylinder. As it falls downward through this cylinder, it enters a warm air stream that converts it into a dry powder.

Packaging
• Because it is less vulnerable to flavour and aroma loss than other types of coffee, whole bean coffee is usually packaged in foil-lined bags. If it is to retain its aromatic qualities, pre-ground coffee must be thematically sealed: it is usually packaged in impermeable plastic film, aluminium foil, or cans. Instant coffee picks up moisture easily, so it is vacuum-packed in tin cans or glass jars before being shipped to retail stores.
Environmental Concerns
• Methylene chloride, the solvent used to decaffeinate beans, has come under federal scrutiny in recent years. Many people charge that rinsing the beans does not completely remove the chemical, which they suspect of being harmful to human health. Although the Food and Drug Administration has consequently ruled that methylene chloride residue cannot exceed 10 parts per million, the water method of decaffeination has grown in popularity and is expected to replace solvent decaffeination completely.

Types of Coffee and Method of Preparations:
Affogato
An affogato (Italian for "drowned") is a coffee-based beverage or dessert. "Affogato style", which refers to the act of topping a drink or dessert with espresso, may also incorporate caramel sauce or chocolate sauce.

Cafe Americano
Cafe Americano or simply Americano (the name is also spelled with varying capitalization and use of diacritics: e.g. Cafe Americano, Cafe Americano, etc.) is a style of coffee prepared by adding espresso to hot water, giving a similar strength but different flavor from regular drip coffee. The strength of an Americano varies with the number of shots of espresso added.
• Long black
• Lungo
• Red eye

Café au lait
A cafe au lait is a French coffee drink. In Europe, "cafe au lait" stems from the same continental tradition as "caffe Latte" in Italy, "cafe con leche" in Spain, "kawa biała" ("white coffee") in Poland,"Milchkaffee" in Germany, "Grosser Brauner" in Austria, "koffie verkeerd" in Netherlands, and "cafe com leite" in Portugal, simply "coffee with milk". In northern Europe, cafe au lait is the namemost often used in coffee shops. It's is a coffee beverage consisting strong or bold coffee (sometimes espresso) mixed with scalded milk in approximately a 1:1 ratio.

Café Bombon
Popular in Valencia, Spain, and spreading gradually to the rest of the country, a cafe bombon is an espresso served with sweetened condensed milk in a 1:1 ratio. The condensed milk is added to the espresso. For visual effect, a glass is used, and the condensed milk is added slowly to sink underneath the coffee and create two separate bands of contrasting colour - though these layers are customarily stirred together before consumption. Some establishments merely serve an espresso with a sachet of condensed milk for patrons to make themselves.

Caffè latte
A caffe Latte is the Italian name for coffee ("caffe") with milk ("latte"). In Europe, "caffe Latte""stems from the same continental tradition as "cafe au lait" in France, "cafe con leche" in Spain,"kawa biała" ("white coffee") in Poland, "Milchkaffee" in Germany, "Kaffee verkehrt" in Austria,"koffie verkeerd" in Netherlands, and "cafe com leite" in Portugal, simply "coffee with milk". It's isa coffee beverage consisting strong or bold coffee (sometimes espresso) mixed with scalded milk inapproximately a 1:1 ratio.

Café mélange
A cafe melange is a black coffe mixed (french "melange") or covered with whipped cream, popularin Austria, Switzerland and the Netherlands.

Cafe mocha
A cafe mocha is a variant of a caffe latte. Like a latte, it is typically one third espresso and two thirds steamed milk, but a portion of chocolate is added, typically in the form of a chocolate syrup, although other vending systems use instant chocolate powder. Mochas can contain dark or milk chocolate. The term moccaccino is used in some regions of Europe and the Middle East to describe Cafe Latte with cocoa or chocolate. In the U.S. it usually refers to a cappuccino made with chocolate.

Ca phe sua da
Ca phe s a đa or cafe sua da (Vietnamese: Ca phe s a đa) is a unique Vietnamese ữ ữ coffee recipe. Literally, ca phe sua da means "iced milk coffee". Ca phe sua da can be made simply by mixing black coffee with about a quarter to a half as much sweetened condensed milk and then pouring it over ice. A substitute made by many Vietnamese immigrants in the Southern U.S., particularly in Louisiana is a dark French roast, often with chicory; otherwise an imported Vietnamese-grown and roasted coffee is used when it is available. The coffee is traditionally brewed with a small metal Vietnamese drip filter into a cup containing the condensed milk. The condensed milk and coffee are stirred together and then poured over the ice. Ca phe sua nong (Vietnamese: 'ca phe sữa nong') — literally, "hot milk coffee" — is made by excluding the ice.

Cappuccino
Cappuccino is a coffee-based drink prepared with espresso, hot milk, and steamed milk foam. Acappuccino differs from a caffe latte in that it is prepared with much less steamed or textured milk than the caffe latte with the total of espresso and milk/foam making up between approximately 150 ml and 180 ml (5 and 6 fluid ounces). A cappuccino is traditionally served in a porcelain cup, which has far better heat retention characteristics than glass or paper. The foam on top of the cappuccino acts as an insulator and helps retain the heat of the liquid, allowing it to stay hotter longer.

Cortado

A cortado is an espresso (also known as "Pingo" or "Garoto") "cut" (from the Spanish and Portuguese cortar) with a small amount of warm milk to reduce the acidity. The ratio of milk to coffee is between 1:1 - 1:2, and the milk is added after the espresso. The steamed milk hasn't much foam, but many baristas make some micro foam to make latte art. It is popular in Spain and Portugal, as well as throughout Latin America, where it is drunk in the afternoon. In Cuba, it is known as a cortadito, and in Catalan it's called a tallat or trencat. It's usually served in a special glass, often with a metal ring base and a metal wire handle. There are several variations, including cortado condensada (espresso with condensed milk) and leche y leche (with condensed milk and cream on top).

Eiskaffee
Eiskaffee, literally "ice cream coffee", is a popular German drink consisting of chilled coffee, milk, sweetener, vanilla ice cream, and sometimes whipped cream.

Flat white
A flat white is prepared by pouring the creamy steamed milk from the bottom of the jug over a single shot (30ml) of espresso. The drink is sometimes served in a small 150-160ml ceramic cup. The stretched and texturized milk is prepared by entraining air into the milk and folding the top layer into the lower layers. To achieve the "flat", non-frothy texture the steamed milk is poured from the bottom of the jug, holding back the lighter froth on the top in order to access milk with smaller bubbles, making the drink smooth and velvety in texture.

Frappuccino
Frappuccino is the name and registered trademark of a Starbucks blended ice beverage and a bottled coffee beverage.

Galão
Galao is a hot drink from Portugal made of espresso and foamed milk. In all similar to caffe latte or cafe au lait, it comes in a tall glass with about one quarter coffee, 3 quarters foamed milk. When the proportion is 1:1 it is called "meia de leite" and it comes in a cup.

Greek frappé coffee
Greek frappe (Cafe frappe) (Greek: φραπές) is a foam-covered iced coffee drink made from spraydried instant coffee. It is very popular in Greece especially during summer, but has now spread on to other countries. In French, when describing a drink, the word frappe means shaken and/or chilled; however, in popular Greek culture, the word frappe is predominantly taken to refer to the shaking associated with the preparation of a cafe frappe.

Iced coffee
Iced coffee is a cold variant of the normally hot beverage coffee.
- Farmers Union Iced Coffee
- Toddy coffee

Indian filter coffee
South Indian Coffee, also known as Madras Filter Coffee or Kaapi (Tamil phonetic rendering of "coffee') is a sweet milky coffee made from dark roasted coffee beans (70%-80%) and chicory (20%-30%), especially popular in the southern states of Andhra Pradesh, Karnataka, Kerala and Tamil Nadu. The most commonly used coffee beans are Peaberry (preferred), Arabica, Malabar and Robusta grown in the hills of Kerala (Malabar region), Karnataka (Kodagu, Chikkamagaluru) and Tamil Nadu (Nilgiris District,Yercaud and Kodaikanal).

Instant coffee
Instant coffee is a beverage derived from brewed coffee beans. Through various manufacturing processes the coffee is dehydrated into the form of powder or granules. These can be rehydrated with hot water to provide a drink similar (though not identical) to conventional coffee. At least one brand of instant coffee is also available in concentrated liquid form.
• Chock full o'Nuts
• Farmers Union Iced Coffee
• Japanese canned coffee
• Kenco
• Moccona
• Mr. Brown Coffee
• Nescafe

Kopi susu
Kopi susu is found in (at least) Malaysian Borneo and Indonesia and very similar to the following entry for Ca phe sua nong. Literally, kopi susu means "coffee milk ". Served in a glass kopi susu can be made simply by mixing black coffee (arabica) with about a quarter to a half a glass of sweetened condensed milk then let stand to cool and allow the grounds to sink on the bottom. You should not drink this to the end unless you want to "eat" the ground coffee. Kopi Turbruk is as above but uses sugar intead of sweetened condensed milk.

Liqueur coffee
A liqueur coffee, as its name suggests, is a coffee brew with a 25 ml shot of liqueur. This brew is usually served in a clear, clean, pre-heated, liqueur coffee glass with the coffee and cream separated for good visual and taste effect. The liqueur of choice is added first with a teaspoon of raw cane sugar mixed in. The glass in then filled to within an inch of the top with good, strong, fresh filter coffee. Fresh, chilled, additive free, slightly whipped cream is then poured carefully over the back of a cold teaspoon, so that it floats on top of the coffee and liqueur mixture. The sugar is required in the coffee mixture to help the cream float.
• Irish Coffee (Whisky)
• Brandy Coffee (Brandy)
• English Coffee (Gin)
• Calypso Coffee (Tia Maria or Kahlua and Rum)
• Jamaican Coffee (Tia Maria & Rum)
• Shin Shin Coffee (Rum)
• Baileys Irish Cream Coffee

Macchiato
Macchiato, meaning something like “spotted”, is an Espresso with a dash of foamed milk. At first sight it resembles a small Cappuccino but even if the ingredients are the same as those used for Cappuccino a Macchiato has a much stronger and aromatic taste. The milk is foamed directly into the espresso cup, which is then put under the coffee outlet. The espresso is then drawn into the cup. Cocoa is then sprinkled over the drink.

Mochasippi
Mochasippi is a drink prepared by baristas in Community Coffee houses located in the Southern United States, commonly known as CC's. It is similar to the Mocha Frappuccino of Starbucks coffee houses. Unlike a Frappuccino, a Mochasippi contains actual shots of espresso rather than a powdered instant coffee.

Turkish coffee
Beans for Turkish coffee are ground or pounded to the finest possible powder, finer than for any other way of preparation. Preparation of Turkish coffee consists of immersing the coffee grounds in water which is most of the time hot but not boiling for long enough to dissolve the flavoursome compounds. While prolonged boiling of coffee gives it an unpleasant "cooked" or "burnt" taste, very brief boiling does not, and bringing it to the boil shows without guesswork that it has reached the appropriate temperature. In Turkey, four degrees of sweetness are used.

Vienna coffee
A "Vienna coffee" is the name of a popular traditional cream based coffee beverage. It is made by preparing two shots of strong black espresso in a standard sized coffee cup and infusing the coffee with whipped cream (as a replacement for milk and sugar) until the cup is full. Then the cream is twirled and optionally topped off with chocolate sprinklings. The coffee is drunk through the cream top.

Yuanyang
Yuanyang, sometimes also called Ying Yong, is a popular beverage in Hong Kong, made of a mixture of coffee and Hong Kong-style milk tea. It was originally served at dai pai dongs (open air food vendors) and cha chaan tengs (cafe), but is now available in various types of restaurants. It can be served hot or cold. The name yuanyang, which refers to mandarin ducks, is a symbol of conjugal love in Chinese culture, as the birds usually appear in pairs and the male and female look very different. This same connotation of "pair" of two unlike items is used to name this drink.

Top Coffee Brands in World
Caribou
Dunkin Donuts
Kopi Luwak
Folgers
Gloria Jean’s
Green Mountain Roaster
Nescafe
Peet’s
Seattle’s

1 Thickening Agents used in Indian Gravies

1 There are various thickening agents that are used in Western classical cooking such as roux, blood, etc. In Indian cooking curries and dishes are thickened on the basis of accompaniments that are served with them. If the dish is served with Indian breads, then the curries will be of thicker consistencies, but if they are to be eaten with rice then they will be more like stews. Many times a single spice has various uses-it can be used to add color, flavor, thickening, aroma, piquancy, or even sweetness to the dish. The various ingredients used as thickening agents in Indian cooking are listed below.

Onion Pastes:-

Both fired onion paste and boiled onion paste help to provide thickness to the gravies. They indeed help to add base or body to the dish apart from acting as coloring agents too

Nut Paste:-

Various types of nuts are ground into a fine paste are used in thickening for Indian gravies. These are probably the influence of Mughal rulers and hence, mostly found in Mughlai kormas and curries often referred to as Indian royal cuisine. There are various nut pastes, such as cashew nut, almond, and coconut, pastes are used apart from these, sometimes for special gravies, pistachio paste can also be used in thickening the gravy.

Seed Pastes:-

Many kinds of seeds are used in paste form to provide thickening to curries and dishes. For example, Poppy seeds paste, chironjee paste char magaz (watermelon) paste. Many other seeds such as sesame seeds are used in salan paste that also act as thickening agents. Mustard seeds are also used in the form of paste that acts as thickening and flavoring agents in many Bengali dishes.

Masala Pastes:-

Many types of dry masalas and wet masala pastes are used in the thickening of the dishes in Indian cuisine.

Lentils:-

Many Indian preparations use lentils for thickening purposes. It is used in various forms around India as shown in the table below:

Name	Description	Use
Lentil power	It can be one lentil or a combination of lentils, such as chana and urad, which are roasted and ground into powder to thicken many south Indian dishes	It is used for thickening some of the south Indian dishes.
Roasted chana daal	It is a commercially available product where the black gram is soaked in water and then roasted. It is available in both whole and powdered form	It is popularly eaten as a snack in winters. It is also cooked with meat and provides binding for certain kebabs such as shammi kebab. Chana dal is also cooked with meat to provide thickening as in case of haleem, dal gosht from hydrabad or dhansak from parsee cuisine

Dairy Products:-

Many types of dairy products, such as cream, etc. are used in Indian cooking to thicken some gravies, especially in Mughlai cuisine. Such use of dairy products is more prevalent in hotels and restaurants, and is rarely done in home style food. This is probably the influence of western cooking. The table below shows some dairy products used in thickening of gravies and curries.

Dairy Product	Description	Use
Cream	The cream that floats on the top of the milk is collected and used various kebabs and curries in Lucknow. it is called as balai in Lucknow and in Hindi it is known as malai. The malai kofta is thickened with cream, and hence the name.	It is used for thickening in various Mughlai dishes such as kormas and shahi gravies
Khoya	It is basically a milk solid that is obtained by reducing milk. It is a commercially available product, that is used to thicken some curries and gravies	It is available in many forms and is also used widely in the production of Indian desserts. In curries, it is in grated and cooked with the gravies to thicken them. It is usually added in the last stage to the dish

Vegetable Purees:-

Certain vegetable pastes, such as fresh turmeric, ginger, and garlic, are also used for thickening of curries. Some green leafy vegetable pastes, such as spinach, fenugreek, etc.

UNIT 3

1 Indian Cookery

2 12.1 History of Spices and Trade Routes

HISTORY OF SPICES:-

Spice trade was very lucrative and ushered in an era of European domination in the East Spices have been an essential part of human civilization. In the Indian civilization too, trading of spices has been integrally connected to its history. Spices were traded through India right from the time of Romans.

Between the 7th to 15th centuries, Arab merchants supplied spices to Europe, and for a very long time they kept their source of spices in India a closely guarded secret. Many sea voyages set sail from Europe in search of India for its spices.

Over time, spices began to be exploited commercially by foreign traders. Ayurveda believed that spices, with their medicinal qualities, could infuse health into the diet. For centuries, the social system of medicine was closely linked to the culinary culture of ancient India. Today the world of spices keeps reinventing itself and fueling the economies of the world.

TRADE ROUTES:-

At first, trade was conducted over the land. The Incense Route referred to a network of ancient routes from Mediterranean ports, across the Levant and Egypt in North Africa, to India and Arabia. Merchants used this route for the trade of a number of valuable items in addition to spices, including opium, silk, ebony, textiles, drugs, incense and herbs. Soon,

maritime routes were discovered and used, which opened up entirely new opportunities and reaches for this trade. The Kingdom of Axum pioneered the Red Sea Route before the beginning of our Common Era (CE). This kingdom also established certain maritime techniques, which proved instrumental in the establishment and success of the routes between India and Rome.

Rome was a land of wealth and power. Its people valued the rare and expensive commodities in life. As such, spices and other valuables from India were in great demand. When Indian traders first encountered Rome (between 30 Before our Common Era (BCE) and 10 CE), they maintained a friendly working relationship. They told the Roman salesmen secrets to ride the monsoons of the Arabian Sea in order to facilitate easier access from both directions. Then, in the 600's CE, Islam had begun its domination, cutting off routes through Egypt and effectively isolating India. It was for this reason that maritime routes were to become so necessary and successful.

During the Crusades, which took place between 1095 and 1291 CE, spice remained a popular commodity. In 1099, knights massacred Jerusalem and returned home with treasure chests full of peppercorns and other spices. These riches began to infiltrate the homes of the wealthy, and filtered down to the common people, being used in their everyday cooking. The Eastern influence began to affect the European flavours as well as their personal styles (of fabrics, ornaments, and so on).

In 1497, the Portuguese explorer, Vasco Da Gama, pioneered the route between Europe and India via the South African coastline. This new trading route led to a massive growth in the spice industry, driving the economy of the entire world to a large extent. However, there were problems with the Portuguese route, mainly due to the use of old ports and routes. The Dutch responded by finding a direct path between South Africa's Cape of Good Hope (the area today known as Cape Town in the Western Cape) and the Sunda Strait in Indonesia. Europe slowly began to dominate India during a time that many countries were trying to gain control of the trade between Europe and India.

12.2 Basic Spices, Condiments and Masalas

BASIC SPICES

Turmeric (manjal, haldi)
Cumin (jheeragam, jheera)
Black pepper (milagu)
Mustard (kaduggu, rai)
Coriander (kotthamalli, dhania)
Fenugreek (vendhayam, methi)
Red chilies (millakai vatthal, lal mirch)
Fennel seeds (sombhu, sounf)
Cardamom (yelakkai, elaichi)
Mace (javitri)
Nutmeg (jhadhikkai, jaiphal)
Cloves (kraambu, lavangam)
Cinnamon (pattai)

BASIC CONDIMENTS

- Ajwain
- Asafetida
- Black salt
- Cardamom powder
- Red chili powder
- Coriander powder
- Curry leaves
- Garam masala
- Ginger, ginger powder
- Himalayan salt
- Jira (Indian cumin seeds)
- Raai
- Turmeric

12.3 Role of Spices in Indian Cuisine
Spices are basically dried seeds, roots, barks etc.
They are used in two main forms-

- Whole spice
- Ground spice

Whole spice is the dried seed or root or bark itself whereas ground spice is the powder form of the spice.
In Indian cooking we use whole spices at the beginning of cooking with oil such that it begins to crackle and release the aroma and ground spices towards the end. Popular ground spices or spice mixes include garam masala (which is a mixture of many spices), chaat masala, turmeric powder, dhania or coriander powder.
Spices are used for 2 main things-

- Aroma
- Flavour

Each spice has a particular aroma and fragrance. Like kasuri methi (dried fenugreek leaves) are added at the end to release it's distinct aroma. Cinnamon (Dalchini) has a warm, woody aroma. Cloves also have a strong and warm aroma.
Hing or asafoetida has a strong pungent smell which later subsides to give a pleasant aroma. Similarly other spices like cardamom, mustard seeds, cumin (jeera), fennel seeds all have distinct

aromas.
Coming to flavours, each spice provides a different flavour. Cinnamon has a sweet, warming flavour. Cloves also have a warming mild heat that warms the back of your throat hence used in small amounts. Nutmeg or javitri has nutty flavour. Cumin seeds have a warm, smoky flavour. Fenugreek seeds have a slightly bitter taste. There are many others.
Some ground spices are also used for colour like turmeric powder and also Kashmiri red chilli powder.
Spices play a very important role in Indian cooking and it is used extensively! Without spices,Indian cuisine will not have its unique aroma and flavour.

12.4 Indian Equivalent name

English Name	Indian / Hindi Name
Aniseed	Saunf
Asafoetida	Heeng
Basil	Tulsi
Bay leaf	Tejpatta
Black Cumin seeds	Shah Jeera
Black Pepper	Kali Mirch
Black Salt	Kala Namak
Cardamom	Elaichi
Caraway seeds	Shah Jeera
Carom seeds	Ajwain
Cinnamon	Dalchini
Clove	Laung
Coriander seeds	Dhania
Cumin seeds	Jeera
Dry Fenugreek Leaves	Kasoori Methi
Dry Ginger	Saunth
Dry Mango powder	Amchoor
Dried Pumpkin / Water Melon seeds	Magaz
Fennel seeds	Saunf
Fenugreek seeds	Methi
Jaggery	Gur
Nigella	Kalonji
Mace	Javitri
Mustard seeds	Rai / Sarson
Nutmeg	Jaiphal
Onion seeds	Kalonji
Pomegranate seeds	Anardana
Poppy seeds	Khus Khus
Salt	Namak
Saffron	Kesar
Sesame seeds	Til
Sugar	Shakkar / Chini
Tamarind	Imli
Thymol seeds	Ajwain
Turmeric	Haldi
Vinegar	Sirka

12.5 Blending of Spices
Spice mixes are blended spices or herbs. When a certain combination of herbs or spices is called for in

many different recipes (or in one recipe that is used frequently), it is convenient to blend these ingredients beforehand. Blends such as chili powder, curry powder, herbes de Provence, garlic salt, and other seasoned salts are traditionally sold pre-made by grocers, and sometimes baking blends such as pumpkin pie spice are also available

12.6 Concept of Wet and Dry Masalas

Dry Masala:

Dry masalas are those which are in their dry form and no additional liquid component is added to them. These masalas may be whole or broiled and powdered. They might also include those ingredients which are specifically dried. Some ingredients might also be specifically dried in order to be blended with other dry spices. For example, mint is dried and powdered to be used as an ingredient in kebab masala.

Wet Masala:

Wet masalas are those masalas which are actually made by soaking the spices in liquid and grinding them into a paste. They might also use fresh ingredients which tend to yield wet masalas. For example, usage of fresh turmeric, ginger, and garlic with other spices, etc. will yield wet masalas or masala pastes.

12.7 Regional Varieties of Basic Masalas

•Garam Masala – As the name suggests, Garam masala means a hot mixture. It is an amazing blend of Indian spices with maximum aroma and flavor. The spices used may differ from place to place, but the basic spices remain the same. These are cumin, coriander, cloves, cinnamon, cardamom, nutmeg and black pepper corns. Other ingredients may include dry ginger powder, bay leaves. Mace, fennel, fenugreek seeds.

To make the masala, all ingredients are dry roasted before grinding them to a powder. This is stored in a cool, dry place in airtight containers.

It can be used for any dish, vegetarian or meat. A small quantity of garam masala augments the taste and flavor of the dish. It can be added to gravy, soup, sause, stewed vegetables, to marinate any food item etc. It should be added at the end, when the dish is cooked, to retain its aroma.

•Chat Masala – It has a sweet as well as a sour taste. It is used to give a tangy taste to foods like golgappa, aloo chat, dahi chat, papri chat and also to some drinks. It is also used to sprinkle on fruits and salads.

Chat masala is a blend of spices that are extremely aromatic and stimulating. It is made by mixing spices like coriander powder, cumin powder, dry mango powder, black pepper, salt, black salt, dried ginger powder, asafetida, mint and chilli powder.

•Pav Bhaji Masala – The masala used for making ‘bhaji’, mashed mixed vegetables, to be eaten with ‘pav’ or the bun. Mainly eaten in Gujarat and Maharashtra, it is loved by all and now it is a very popular dish. Etc

The masala is a blend of cumin seeds, coriander seeds, black cardamoms, black pepper corns, dry red chillies, fennel seeds, cinnamon and dry mango powder. All ingredients are dry roasted and then ground to a fine powder.

Not only pav bhaji, this masala can be used in any Indian curry. It is a versatile masala.

•Channa Masala – Channas or chole, mainly a Punjabi dish, but very well-liked all over. It is eaten with ‘bhatura’ or ‘kulcha’, but it can also be eaten with rice or parathas.

Chanas can be cooked in many different ways, dry or with gravy. Chana masala is made using spices like coriander seeds, cloves, cinnamon, black pepper, cardamom, cumin seeds, anardana and bay leaves. Dry roast and grind all ingredients.

12.8 Basic Composition of Some Important Masalas

The composition of garam masala differs regionally, with many recipes across India according to regional and personal taste, and none is considered more authentic than others. The components of the mixed, toasted, then ground together.

1 Menu Planning

3 A menu or a bill of fare is a list of prepared dishes of food which are available to a customer.

Menu planning means to compose a series of dishes for a meal. Composing a good menu is an art and it needs careful selection of dishes for the different courses, so that each dish harmonizes with the other.

The planning of meals in commercial catering establishments is based more on economic considerations and reputation than on the desire to provide nutritionally " balanced diets".

The dishes produced are intended to please the eye and the palate. Menu should provide nutritious food, tempt the appetite and satisfy the guest.

13.1 History of Menu

The word "menu", like much of the terminology of cuisine, is French in origin. It ultimately derives from Latin "minutus", something made small; in French it came to be applied to a detailed list or résumé of any kind. The original menus that offered consumers choices were prepared on a small chalkboard, in French a carte; so foods chosen from a bill of fare are described as "à la carte", "according to the board."

The menu first appeared in China during the second half of the eighteenth century, or The Romantic Age. Prior to this time eating establishments or table d'hôte served dishes that were chosen by the chef or proprietors. Customers ate what the house was serving that day, as in contemporary banquets or buffets and meals were served from a common table. The establishment of restaurants and restaurant menus allowed customers to choose from a list of unseen dishes, which were produced to order according to the customer's selection. A table d'hôte establishment charged its customers a fixed price; the menu allowed customers to spend as much or as little money as they chose

13.2 Types of menu

1. Table d'hote or table of the host: A fixed menu planned at a fixed price. It is a meal of 3 or 4 courses with a limited choice of dishes, and is cooked in advance. It is changed daily or may be used in rotation. Left over food items could be used for this type of menu as it helps to economise.
2. Carte Du Jour or Daily Card: These are sometimes an insert in an a la carte menu, which comprises of a few special dishes of the day to vary the a la carte menu, for regular customers.
3. A La Carte or By the Card: To your choice. A la Carte means the presentation of a menu of a long sequence of dishes and courses. Each dish is individually priced. Dishes are cooked to order and the portions are larger than a table d'hote menu. The customer has a wide choice and should be prepared to wait for this service. Many dishes and sauces are prepared in advance except for the final finishing touches and cooking. This type of menu is normally permanent, until either prices or change of management makes it out of date.
4. Banquet: The menu is composed for a number of people and it is necessary to know the reason for the banquet. It is usually a formal affair and dishes should be compiled to suit the occasion. The menu is elaborate and of a high class quality. It is a fixed menu, with no choice.
5. Buffets: There are 2 main types of buffets e.g. the light buffet and the fork buffet (lunch & supper). This buffet table is attractively displayed. The food served is colorful and attractive, tastefully decorated. A large variety of dishes is offered, for everyone to choose.
6. Cocktail: The main ingredients are drinks. Very tiny savoury snacks are served, such as stuffed olives, walnuts, almonds salted, etc

13.3 Menu Planning Principles

Points to consider when Planning Menus

1. *Type of meal* : The different types are – breakfast, luncheon, dinner, supper, etc.

Breakfast:

There are 3 types

Continental: is a light breakfast comprising of breads, butter, preserves and tea or Coffee.

English: is on a larger scale and comprises fruits- fresh or stewed, cereals, bacon and Eggs to order, fish, preserves, breads and beverages.

Indian: Popular breakfast comprises of parathas, dosas, etc.

Luncheon Menus : are usually shorter than dinners with less courses and simpler dishes, but more choice within each each course. Luncheon is a quick affair and dinner taken more leisurely.

Dinner Menu : comprises of highly garnished, classical dishes. Here one has a scope of showing

one's skill of compiling menus with a choice of the most esteemed and rarest and exotic of dishes.
Supper : A full buffet is given for supper. All dishes are well decorated, giving a good display.

2. *Type of establishment*: Menus will vary according to the type of establishment:
    1. Hotels
    2. Restaurants
    3. Hostels
    4. Hospitals
    5. Industrial Canteens.

The menus for restaurants and hotels will be a la carte, buffet, banquet, or tabled'hote. The dishes will be pleasing to the eye and palate and will be determined by the customers' appetite and pocket.

3. *Type of customer*: Customers can affect the type of food served because of the following factors: age, sex, occupation.
4. *Season of the Year and Seasonal availability of Ingredients:* Season is important in the choice of food. Cool, crisp and fresh foods are ideal in summer. For cold weather, richer and heavier foods are welcomed. Although in these days of cold storage, foods are available all the year round, foods in season should be included in menus, as they are fresh, plentiful and the color and flavor are good. They are available at a reasonable price and are easy to obtain.
5. *Occasion :* Special dishes for certain days or time of the year should be considered. For e.g. roast turkey for X'mas.
6. *Capabilities of Kitchen Staff :* The staff capabilities have to be seen whether they will be Able to cope with high class cookery, whether they are experienced and have the skill and knowledge. Equally important is the serving staff that should be efficient.
7. *Equipment of the kitchen :* While planning the menu it is important to see that the kitchen is well equipped also be able to cope up with preparation of various dishes.
8. *Price of Menu :A*lways give value for money. The food cost should not exceed 40% of the selling price at an average e.g. if the food cost per person is 2 Dnrs then the suggested selling price would be-

    $\frac{5 \times 100}{40}$ = 5 Dinars

    $\frac{\text{Cost of food X 100}}{\text{Gross profit subtracted}}$ = Selling price of dish from 100 = Food percentage
9. *Balance of Menus :* This depends partly on the following points :
    1. Repetition of ingredients : The basic ingredients on the menu should not be repeated.
    2. .Repetition of color : Wherever it is possible this should be avoided to make the menu exciting.
    3. Repetition of words : Avoid the repetition of the same word on the menu, as it seems the planner has limited knowledge and makes the menu less interesting.
    4. Avoid over balance of menu : If many courses are served then care must be taken to ensure that they are neither too light nor too heavy.
    5. Garnishes : Must be correct. Garnish attractively and simply.
    6. .Seasoning : Do not overseason food. If strong herbs are usedin one dish never repeat them in another dish in the same meal.
    7. Texture of the courses : Some food should be soft whilst other food should require thorough chewing. Avoid menus with the same texture.
    8. Food Value : Special attention be paid to different requirements of different groups of people.
    9. Color : Sensible use of colour will give them an eye appeal. Deep vivid colours should be avoided. Drab looking dishes can be improved by an attractive colourful garnish.
    10. Wording of Menu : When compiling menus, the following points should be considered.
    1. Select language which the customer can understand.
    2. If the menu is in French give an English transalation.
    3. Never use a mixture of languages for the courses of a menu.
    4. Spellings of the words should be correct.

1 Bakery & Pastry

4 14.1 **Pastries**

Pastry was originally made by the Egyptians. They made a flour and water paste to wrap around the meat to soak up the juices as it cooked. Pastry was developed in the Middle East and it was bought to Europe by the Muslims in the 7th century. By medieval times local areas had their own pudding and pies. In the 17th century both flaky and puff pastry were used, and intricate patterns on the pies were a work of art.

Today the chief purpose of pastry is to complement the flavor of the fillings and to provide a casing. When learning about pastry it is important to know some terms. Paste is the uncooked pastry mixture with the fat added. It has less water and more fat than the dough which is used for bread and scones. In bakeries special pastry margarine is used, whereas the tastiest fat to use at home is butter.

Pastry is the name given to various kinds of baked goods made from ingredients such as flour, butter, shortening, baking powder or eggs. Small cakes, tarts and other sweet baked goods are called "pastries".

Pastry may also refer to the dough from which such goods are made. Pastry dough is rolled out thinly and used as a base for baked goods. Commonly pastry dishes include pies, tarts and quiches. Pastry is distinguished from bread by having a higher fat content, which contributes to a flaky or crumbly texture. A good pastry is light and airy and fatty, but firm enough to support the weight of the filling.

Definitions:-

A mixture of flour, fat, possibly egg and sugar, the fat usually dispersed as small solid globules coated with flour and the whole brought together with liquid prior to shaping and baking. There are many types of pastry.

Classification of Pastries

Shortcrust pastry

The shortcrust or short pastry is the simplest and the most common pastry made. It is made with the ingredients of flour, fat, salt, and water. The process of making pastry, include mixing of the fat and flour, adding water, and rolling out the paste. It is cooked at 180°c and the result is a soft tender pastry. Different types of short pastry are used for different foods. Short pastry is used to make meat and other savory pies. Short sweet pastry with added sugar, and sometimes eggs, is used to make fruit pies, Christmas mince pies and other sweet recipes for desserts. Suet pastry is used as a delicious cover on stew.

Puff pastry

The"puff" is obtained by beginning the baking process with a high temperature and lowering the temperature to finish. Puff pastry is light, flaky and tender. It is made by mixing flour, salt, a little fat and water to form dough. The dough is then layered with fat, preferably butter, to form hundreds of layers of fat and dough by folding and rolling, when it is baked, water from the dough turns into steam and puffs up the pastry to produce lots of flaky layers. Puff pastry is used for pies and vol-au-vents and can be filled with meat or fruit and spices. Puff pastries come out of the oven light, flaky, and tender.

Flaky (or rough puff) pastry

The flaky pastry is a simple pastry that expands when cooked due to amounts of layers. These are perfect if you are looking for a crisp, buttery pastry. Flaky pastry is mad in the same way as a puff but has less rolling and folding and is quicker to make. Puff pastry is used for pies and vol-au-vents and can be filled with meat or fruit and spices. The puff pastry has many layers that causes it to expand or ''puff'' when being baked. It rises up

due to the combination and reaction of the four ingredients and also from the good amount of air that gets between the layers. Puff pastries come out of the oven light, flaky, and tender.

Choux pastry
The choux pastry is a very light pastry that is filled with cream. The pastry is filled with various flavors of cream and is often topped with chocolate. Choux pastries can also be filled with things like cheese, tuna, or chicken to be used as appetizers.

Phyllo (filo) pastry
Phyllo pastries are usually paper thin and greatly stretched. They involve several stretched out layers of unleavened dough which are wrapped around a filling and brushed with butter. These pastries are very delicate and can break easily.

Yeasted pastry (Danish & Croissant)
Yeasted pastries are light flaky pastries that are crisp on the outside, but soft and tender on the inside. The dough, which has yeast added, is layered with fat, so this pastry is a cross between bread and pastry. Examples of yeasted pastries include croissants and Danish pastries. Croissants are made in a horseshoe shape, and are traditionally eaten warm and filled with butter and jam for breakfast. Danish pastries are always sweet and can have a filling, such as custard, and icing on top, make a delicious snack or dessert.

Role of Each Ingredient

FLOUR: It provides structure to a pastry and acts as a base.
FAT: The main role of fat is to provide shortening and plasticity.
SUGAR: Used to give color, sweetness and acts as preservative and tenderizer.
SALT: It enhances the taste and acts as preservative
WATER: Acts as a binding agent.
YEAST: Acts as a leavening agent.

Baking Temperature and Time of Each Pastry

SHORT CRUST PASTRY

The dictionary of the word "short" in the bakery sense is
"Friable" (crumbly, easily broken, no elasticity).It means crisp & light.
There are mainly two types of short crust pastry:

1. PÂTE SUCREE: Sweet short crust

2. PATE BRISEE: Savoury short crust

This is a pastry made with a mixture of flour, fat& water. When baked, the pastry should have a short eating quality, i.e. a crisp tender texture free from toughness & hardness& the quality of being easily chewed or broken. This eating quality depends on the ingredients used, especially the amount present in the receipe the method of combining the ingredients.

In a short crust pastry there should complete absence of hardness of toughness is brought about by the shortening of gluten strands & hence it is known as "short crust pastry". For the shortening of gluten strands fat is used& due to the greater affinity of water to fat than flour & also because fat acts as a barrier between flour and water .The gluten development is hampered because sufficient water isn't available. The function of fat is to reduce the toughness of the gluten, the softer the flour, the lesser the toughness to be overcome. Short crust pastry may be used for different kinds of products such as tarts, pies, cookies etc.

INGREDIENTS FOR MAKING SHORT CRUST:-

1. FLOUR: - Soft to medium flour should be used to prepare short crust the measure or the flour strength is mainly based upon the strength/ quality of gluten. Since soft flours have low gluten content, they are preferred in the production of Soft flour strong flour is available, the strength of the flour can be decreased by adding in small amount corn flour/rice flour as they are high in starch and low in gluten content, thereby reducing the toughness & elasticity .The normal proportion of flour to fat is 2:1. When the flour is too soft the quantity of fat may reduce by 35-40%.

2. FAT:-LARD is the best shortening to be used for short crust because apart from possessing the best shortening properties among all fats, it also confers a good flavor. If the fat quantity is low a small of leavening may be added, but in such condition the quantity of liquid must be kept low to prevent gluten formation. When the fat is dispersed in the flour evenly it acts as an insulator, it insulates the protein particles from the liquid content. It is a combination of insoluble proteins& liquid which produced gluten .Greater the fat distribution throughout the flour, more extensive is the insulation. As a consequence less gluten is developed & shorter/ crumblier is the final product.

3. **LIQUID: - Minimum** amount of liquid (egg/milk/water) should be used to make the pastry. It should just be enough to make the pastry rolling consistency. Too much water will produce sticky dough that is difficult to roll out; too little water will leave it dry making it crumble/break easily. In both cases the pastry will be hard/tough.

4. **SUGAR: - I**n case of sweet short crust ,sugar is used. The sugar used should be fine & small grained so that it dissolves easily. A coarse grain will not dissolve easily & and the crystals will remain in the pastry which will caramelize and will result in dark brown spots on the surface of the baked product. Therefore castor sugar or icing sugar should be used. The sugar should be dissolved in a liquid or creamed with fat. In the case of savoury short crust salt, spices& herbs may be used to flavor the pastry.

METHODS OF MAKING:-

1)**RUBBING METHOD:-** The frozen fat is cut into small pieces & mixed into the flour .Then the flour and fat are rubbed gently till the whole mixture resembles bread crumbs and then liquid (water/egg/milk) is used to from the dough .It the case of machine mixing there are greater chances of toughening than in the case of hand mixing , but with correct timing consistent results can be obtained with machine mixing too.

2)**CREAMING METHOD** ;- In this method the fat with equal weight of flour is creamed lightly. Then the remaining flour& liquid is added & mixed until a smooth paste is obtained. This method ensures complete dispersion of the fat in the flour. It is suitable for large scale manufacture ar the rubbing method is not practical for large scale production of the pastry. Since there are greater chances of gluten development to prevent it more fat is used in comparison to rubbing in method.

PRECAUTIONS :

1) INGREDIENTS & WORKING CONDITIONS :-

   a) Short crust demands delicate handling, cooling ingredients& working conditions.
   B) Soft flour should be used & it should be sieved along with the baking powder/icing sugar.
   c) Use chilled fat & cold water to prevent gluten formation & elasticity in the dough.
   D) All ingredients & equipment should be as cool as possible.
   E) Ingredients should be weighed accurately according to the recipe.
   .

2) ***HANDLING THE DOUGH :-***

   A) Use only fingertips for rubbing in the fat so it is well dispersed in the flour & hence acts as a barrier between the flour and water molecules.

   B) Do not over work or knead the dough otherwise gluten may develop. This can also happen when scraps or cuttings are incorporated.

3) ***SPEED:-***It is essential but overworking the dough would only strengthen in the dough sticky, the fat will start will start melting & separating out of the dough resulting in a hard & tough product.
4) ***CHILLING***:- Chilling any dough before its use relaxes the gluten , making the dough less elastic and thus softer and easier to roll out. To prevent the outer layer of the dough from drying up forming a hard and crusty surface, wrap the dough in a plastic packet, butter paper or aluminum foil before refrigeration.
5)**ROLLING OUT THE DOUGH :-**
a) When rolling out the dough handle it as lightly as possible.
b) Do not turn the dough over, stretch or pull it in shape.
c) It is preferable to keep the surface and rolling pin lightly floured.
d) Do not use too much flour as it will toughen the dough.
e) Avoid stretching the pastry when putting it into a tin or over the top of a preheated oven AS it will shrink back during baking and spoil the final shape of the product.
6**) PREHEATING THE OVEN**:- It is advisable to bake the pastry in a preheated oven to obtain the best result. The oven must be hot for the first few minutes of baking the heat bursts the flour grains which will absorb the before there is sufficient heat for the flour grains to burst.

PUFF PASTRY

Ingredients: -
Refined Flour –
A good patent flour or one of medium gluten strength 13% flour is a structure builder and because of its gluten – forming ability, can dictate the lift.
Too soft a flour will result in a softer dough. The dough will be easier to handle but final volume and flake will be sacrificed.
It the flour is too strong then the dough will be tough to handle and the final product may suffer from shrinkage.
Water: -
It is a rule of thumb that the consistency of the dough should match the consistency of the roll in fat. If the dough is too soft then the layers may be ruptured by the hard fat. If the dough is firm, it will be difficult to roll out. The product may shrink and fat may leak out.
Water also serves as temperature control i.e. it should be cold to maintain firmness of fat.
Salt: -
Salt enhances flavor and also has a toughening effect on the gluten structure.
Acid: -
The addition of an acid improves sheeting ability by lowering the pH and mellowing the gluten. It has no effect on the leavening action.
Fats: -
Two types of fats are used in the production of puff pastry. They each perform a different role.
Fat is added to the dough to modify the dough itself and fat is used as a layering medium to assist in the raising of the puff pastry during baking.
Dough Fat: -
Soft fat may be used in the dough to give better eating quality to the finished product and also aids in the dough's sheeting ability.
Also it should be noted that as the % of fat increases, volume decreases.
Maximum volume is obtained when 2.5 to 4% fat is used in the dough stage. It should have a melting point of around 33oC - 50oC.
Puff Pastry Shortening: -
This shortening is firm and waxy in nature and is exclusively used to make puffs. Because of its nature, it can be rolled out in smooth continuous sheets between the dough layers.
A melting point between 43oC – 50oC will produce excellent results, but should be high enough to with stand frictional heat to which it is subjected during sheeting and folding operation.

Types of Puff Pastry: -
There are 2 types of puff pastry – Full and Three Quarter.
The differences in these types are in the fat contents and in the number of rolls and folds given. Full puff pastry contains flour and fat in equal ratio. While ¾ pastry contains ¾ of fat to each kilo of

flour.
The flour that is used in making of puff pastry should be strong, with good quality gluten.
A weak acid such as lemon juice is added. This provides greater extensibility to the gluten
Butter is the best for application as it gives a good flavor. Margarine also can be used but the melting point of margarine has to be lower than the temperature of the human body, otherwise there is a possibility of a thin film of fat remaining on the roof of the mouth after the pastry has been eaten.
The whole purpose of rolling and folding is to build up a structure of alternating layers of dough and fat. This process is known as lamination.

Methods of Manufacture:
There are three well-known methods of manufacture – English, French and Scotch.
The English method (Three Fold): - (Flaky)
Sieve the flour; rub in 20 gms of butter or margarine. Make a bay or well, add salt and acid and make a dough and allow it to rest. Cream the margarine into a homogenous mass. The dough then rolled into a rectangle about 18" x 6", the margarine is divided into approx. 3 parts. The first part is evenly distributed to cover 2/3rd of the rolled out dough. The flap of the dough containing no margarine is folded over to cover half of the treated area and then folded over to again cover the last portion. The pastry is given a half turn so that the open ends are parallel to the rolling pin. This process is repeated twice so as to finish all the margarine. Lastly one blindfold is given. The pastry is covered with a damp cloth and allowed to recover from the manipulation for about 30 minutes after each rolling. (7 – 9 layers)
French method: - (Continental Book Fold)
The dough is the same fashion as for the English method. The initial rolling out of the dough is different for it is rolled out to the shape of an open envelope with the four angles slightly thinner than the center.
The chilled margarine/butter is placed in the center of the rolled out square and the envelope is closed by bringing the four angles to the center. After proper relaxation of the dough, it is turned upside down and sheeted into a rectangular shape and folded in a book fold.
Scotch Method: - (Blitz)
This is the quickest way of making puff pastry.
The word is derived from the German word "Blitzen" meaning lightening.
In this method the chilled margarine is mixed into the sieved flour in pieces about the size walnuts. The folding process is a three fold followed by 3 – Four folds, all of which is accomplished in 25 min.

Baking: -
Puff pastry obtains its lifting power through the sealing of moisture in the dough, as heat penetrates the product, the layers of shortening melt and the water in the dough vaporizes and causes the layers to expand. The shortening also helps by holding in these vapors.
The gluten in the dough expands with the pressure of the steam and holds the steam in.
The shortening melts and penetrates the layers of the dough, making it flaky and tender.
The starch then gelatinizes and the proteins coagulate forming a rigid mass. The structure remains firm and flaky.

Oven Temperature: -
Proper oven temperature is important. A temperature of 204oC – 218oC with an even steady heat is very important.
Too low a temperature allows shortening to weep between the layers of dough resulting in poor quality and low volume.
Too high a temperature prematurely seals the piece and results in low volume and raw centers.

Washing: -
Puff pastry pieces are generally washed with an egg wash. Care should be taken to prevent the wash from running down the sides of the pieces while brushing the top. The eggs will coagulate with the heat of the oven, seal the sides and prevent the pastry from rising evenly. (Poor Volume)

Reasons for imperfect Pastry: -

- Puff pastry shrinks: -

1. Oven too hot
2. Not resting the dough before rolling out.
3. Not resting products before being baked.
4. Use of scrap dough.
5. Dough too soft.

- Puff Lacks Volume: -

1. Too many folds.
2. Not enough folds.
3. Use of scrap dough.
4. Dull cutters.
5. Cold oven.
6. Shortening too soft.
7. Flour too strong.

- Fat Runs Out: -

1. Dough not folded enough.
2. Oven is too cold.
3. Warm pans are used.
4. Melting point of fat is too low.

CHOUX PASTRY

History

A chef by the name of Pantarelli or Pantanelli invented the dough in 1540, seven years after he left Florence, along with Catherine de' Medici and the entirety of her court. He used the dough to make a gâteau and named it Pâte à Pantanelli. Over time, the recipe of the dough evolved, and the name changed to Pâte à Popelin, which was used to make Popelins, small cakes made in the shape of a cabbage.

Then, Avice, a pâtissier in the eighteenth century, created what were then called Choux Buns. The name of the dough changed to Pâte à Choux, as Avice's buns resembled cabbages – choux in French. From there, Antoine Carême made modifications to the recipe, resulting in the recipe most commonly used now for profiteroles.

Choux paste is a versatile partially pre-cooked paste that can be baked for use in pastries and gateaux, fried for use in potato dishes and fritters or boiled in Gnocchi dishes. Pastry products made from choux paste include éclairs, profiteroles and many others.

Recipe

ING	QTY
Flour	130 gms
Butter	65 gms
Eggs	3 nos
Water	250 ml

Baking temp:- 220 C / 150 C
Baking time :- 15 min/ 30 min
METHOD
1 Melt the butter along with water till it boils.
2 Add in the flour and cook till it leaves the sides of the vessel.
3 Allow the mixture to cool and then add in the eggs. mix till a smooth paste is formed.
4 Put into a piping bag and pipe out into desired shape.

Ingredients used for Choux Paste

Flour: Medium or strong flour should be used because higher gluten level will provide good elasticity.
Fats: Only butter should be used as it gives flavour to the product.
Eggs: The quantity of eggs will depend on the degree of cooking, type and amount of flour and

fat used.
Other Ingredients
Sugar, cheese, cocoa, dried fruit, flavorings, spices, etc.
The final consistency of the paste for pastries should fall off the back of the spoon. The paste should have a good smooth sheen. It should be soft but able to retain its shape when piped.
It can be baked immediately after it is piped. Choux paste can be piped into clean baking trays that are lightly greased. They can be lightly floured. Bake at a high temperature 200 to 2200C.
When deep frying choux paste fritters cook in clean fat at 170 C initially.
Storage
Baked products can be frozen. Choux paste can be stored for up to twenty four hours covered with cling wrap.

LIFT IN CHOUX PASTE
The leavening agents are steam or water vapor. In the oven the water in the paste is converted into steam due to the oven heat. The starch on the surface forms a rigid film, which does not allow the steam to escape. But as more water evaporates the pressure of the vapor from within leads to the surface cracks as it escapes. These cracks are filled with soft batter within which in turn forms a film. The process is repeated leading to the formation of hollow center. Eventually the egg protein coagulates and starch gets to a rigid form. This is how a rigid hollow shell is produced in choux pastry.

Changes in Choux Pastry while baking
It leavening agents are egg,, air and steam. In the oven, water in the paste is converted into steam. Due to the oven heat, starch on the surface forms a rigid structure that does not allow steam to escape. As more water evaporates, the pressure of steam from inside pushes to the surface and cracks it. These cracks are filled with soft batter from within which in turns forms a film. The process is repeated leading to the formation of a hollow centre. Eventually the egg protein coagulates and starch gets to a rigid form.
Products made from choux pastry – profiteroles, croquembouche, chocolate éclairs, choux buns

14.2 **Pastry Cream**

- **Basic Pastry Cream**

Pastry cream:-
A rich, thick stirred custard, cooked on the stove, made from a mixture of milk or cream, eggs, sugar, flour (roux) and/or corn-starch. The main thickener for Pastry Cream is eggs, but it gets some help from cornstarch or roux(typically a mixture of fat and flour heated and used as a basis for sauces, but in this case, just flour)Pastry cream or crème patisserie is a staple in pastry kitchens and originated in France. This versatile cream is used to fill cream puffs, éclairs, napoleons, tarts, and other pastries. Pastry Cream is versatile and can be easily flavoured with vanilla beans, liqueurs, coffee and fruit purees are some complementary flavouring are often added. Heavy whipping cream can be folded into the Pastry Cream once it is cooled for a richer and fluffier cream. You can easily make chocolate pastry cream by adding a couple of ounces of bittersweet or semi-sweet dark chocolate to the base recipe along with the vanilla. Another flavouring option is to add a tablespoon or so of a flavoured Liqueur such as Cointreau, Kahlua or crème de cacao or others .Flavoured nut pastes such as hazelnut or almond which can be used to flavour the pastry cream.

• Use in Confectionery
CUSTARD: Custard is a thick, rich, creamy and pudding –like dessert made from gently cooking or baking and then refrigerating into a semi-rigid gel viscous sauce when cooled or refrigerated. All custards are made basically with the same ingredients: mainly eggs and /or yolks, as well as cream or milk, sugar and usually salt and flavourings. Eggs are the thickener in most custard and the yolks make them smooth and rich. Both egg yolks and whites contain proteins, which change from liquid to solid, called coagulation, when cooked or baked. This means that the liquid egg becomes firmer. As heating continues the egg eventually becomes semi-gelled or fully gelled when cooled, giving you custard texture. The less eggs in a custard recipe, the cooking time increases and so does the coagulation time. Just as most baked products are essentially flour protein structures, custards and egg protein structures making them sensitive to heat and temperature. The differences between custards are the result of how they're prepared, ingredients and mixing.
Custards are prepared in two ways: stirred or cooked on top of the stove or baked in the oven.
1. Stirred or stovetop custards never get as thick as a baked custard have because their gel formation ,primarily from eggs ,is interrupted by stirring before it totally sets .They are often used as a sauce or as an ice cream base. For stirred custard mixtures, the eggs are cooked to the proper doneness when a thin film adheres to a metal spoon dipped into he custard .This point of coating a metal spoon is 20 to 30 degrees below boiling .Stirred custards should not boil. The finished product should be soft and thickened but not set .Stirred custards will thicken slightly after refrigeration.
2. Baked custards ,the the lightest of all ,contain milk rather than cream and a relatively low ratio of eggs .As it is not unmoulded ,this custard does not need the extra thickening power of additional egg yolks .The gel is not stirred during the baking process, thus giving a more solid texture. Baked custard mixtures are done when a metal knife inserted off centre comes out clean. The very centre still may not be quite done, but the heat retained in the mixture will continue to cook it after removal from the oven. Cooking longer may result in a curdled and/or weeping custard .Cooking a shorter period may result in thickened but not set custard. Baked custards are placed in a water bath in the oven. The water insulates the recipe from high heat and moderates the cooking or baking temperature of the custard .This guarantees that the eggs in the custard approach their set point slowly and thicken gradually.

STIRRED CUSTARDS:
Crème Anglaise :- French word for "ENGLISH CREAM" .It is traditionally known as vanilla sauce and is considered a "mother sauce" in pastry .It is a light pouring custard used as a dessert cream or sauce. It is a mix of sugar, egg yolks and hot milk, often flavoured with vanilla. The cream is made by whipping egg yolks and sugar together until the yolk is almost white, adding hot milk little by little, and cooking until thick. The sauce is stirred with a spoon until it is thick enough to coat the back of a spoon, and then must be removed from the heat. If the sauce reaches too high a temperature, it will curdle. Cooking temperature should be between 70 C(156 F) and 85 C(185

F);the higher the temperature , the thicker the resulting cream. This can be poured as a sauce over cakes, fruits, etc. Alternatively it can be eaten as a dessert on its own, often in the presentation of Ile flottante ("floating island"): the cream is poured into a bowl with a piece of meringue (blancs en neige) floated on top. It can also be used as a base for desserts such as ice cream or crème brulee .Other names includes 'crème a l'anglaise' and 'crème francaise'.

Confectioners' Custard:
This is an all-purpose basic custard. The chief ingredients however are milk and sugar, bound with cornflour and flavoured with vanilla .Technically(and in French cookery)the word custard refers only to an egg -thickened custard .When starch is added, the result is called pastry cream(crème patisserie).Half the sugar, cornflour, yolks and quarter of the milk are mixed well in a bowl till smooth. Meanwhile rest of the milk is brought to a boil and then then the egg mixture is poured into it slowly, stirring constantly to prevent it from lumping .It is a more stable custard and can be used to lighten buttercream. Confectioner's custard made with whipped cream is crème patisserie.

Bavarian Cream:-
A cold dessert composed of a rich custard , whipped cream, various flavourings (fruit puree, chocolate, liqueurs and so on) and gelatine. The mixture may be spooned into stemmed glasses or into a decorative mold to be de-molded when set. Though it does not pipe smoothly because of it's gelatin, it could substitute at a pinch for crème patisserie as a filling for doughnuts

BAKED CUSTARDS:
All baked custards share the same mixing and baking techniques. However you find that the proportions for each custard vary and that, while the variation seems small, they actually corresponds to a different result. Baked custards are placed in a water bath in the oven. The water insulates the recipe from high heat and moderate the cooking or baking temperature of the custard .This guarantees that the eggs in the custard approach their set pint slowly and thicken gradually.

Crème Caramel:
Is a custard baked in a ramiken or mold with a layer of caramelatt the bottom. In some respects, it is similar to the crème Brulee that you see on many restaurant menus. They are both custard with a caramel layer. But crème caramel is made from egg yolks and egg whites (crème Brulee is made with yolks only)and its caramel is of a softer ,more liquid consistency on the bottom(vs. the brittle caramel topping on crème Brulee). When you demold the crème caramel, there will be a topping of a caramel on the custard as well as a sauce of caramel that pools around the custard. In Italy it's known as crema caramella and in Spain as flan.

Pot de Crème :
French for "pot of cream", is traditionally served in small, lidded porcelain cups. It is made with equal parts of cream and milk and lots of egg yolks, it is eggy and soft and smooth, pure custard to be spooned out of a cup and savoured unadorned.

Crème Brulee:
French for burnt custard/cream is the richest of the three. All heavy cream and yolks, this custard cooks up rich and thick-a wonderful contrast to the glassy brittle layer of caramelized sugar it's topped with This delicate, silken, and sinfully rich dessert, which blends the cool velvet of custard topped with a crisp, caramelized layer of sugar, from which it derives t's name. It is baked in a bain-marie to ensure even baking.

Fresh Cream:
A dairy product that is composed of the higher butterfat layer skimmed from the top of milk before homogenization. In un-homogenised milk, over time the lighter fat rises to the top .In the industrial production of cream this process is accelerated by using centrifuges called "separators" .In many countries cream is sold several grades depending upon the total butterfat content. This cream should be used as soon as possible to ensure its keeping quality and must be refrigerated .Cream is used as an ingredient in many foods ,including ice cream many sauces ,soups ,stews ,puddings

,and some other custard bases.

WHIPPED CREAM:
The term "whipped cream" refers to cream that has been beaten until it is light and fluffy, as by whipping with a mixer, whisk ,or fork. Cream containing 30% or more fat can be mixed with air ,and the resulting colloid is roughly double the volume of the original cream as air bubbles are captured into a network of fat droplets .Whipped cream is a popular topping for desserts such as pie, ice cream, cupcakes, cake and chocolate and caramel puddings, cakes and for lightening a whole range of desserts such as ice creams ,mousses and soufflés .It is used for decoration or simply as an accompaniment.

CHANTILLY CREAM/CRÈME CHANTILLY:
Simply sweetened whipped cream flavoured with vanilla or brandy .Chantilly, is a delicious and light (like foam) sweet cream, it's a famous dessert or base of many recipes in French cooking .In this country,
we take the sweetened part for granted when we refer to whipped cream ,although ,of course ,unsweetened whipped cream is used to give volume and flavor to a number of savoury recipes. Chantilly cream is different from usual whipped cream by the sugar added .Either powdered sugar or vanilla sugar may be used.

- **Preparation and Care in Production**

PRECAUTIONS :
Curdling: known as synersis or weeping. When egg mixtures such as custards or sauces are cooked too rapidly, the protein becomes coagulated and separates from the liquid levying a mixture resembling fine curds and whey. If curdling has not progressed too far ,it may sometimes be reversed by removing the mixture from the heat and stirring or beating vigorously .To prevent synersis or curdling ,use a low temperature, stir, if appropriate for the recipe ,and cool quickly by setting the pan in a bowl or ice or cold water and stirring for a few minutes.

TEMPERING:
An important cooking technique used when making custards is tempering, which is the slow addition of a hot liquid to a cold one. Tempering gradually brings the temperature of the two mixtures together and is used when a scalding hot liquid, such as cream or milk, is added to eggs. To temper add a large spoonful of the hot cream to the egg-sugar mixture, whisking all the while. Add another spoonful, and then another ,and continue until all the cream is mixed in.

FLAVOURING:
Add flavourings AFTER the custard has cooked and is still hot and not firmly set(except for vanilla bean seeds which are added to infuse flavor into the cream).You don't want to lose the flavour when the extracts are cooked with the rest of the ingredients and you don't want to add when the custard has cooled. Acids such as freshly squeezed lemon or orange juice decreases coagulation time and temperature so, always add after the custard has finished cooking. Any stirring when the custard has cooled to incorporate the flavourings will thin it.

SKIN FORMATION:
With sauces, such as custard, containing dairy and milk products, form skins on top after cooling .It is caused by the casein in the dairy product .Some cooks dot the top of the custard with butter (open one end of the butter stick and dot it on the surface of the custard while still hot) to form a thin fat glaze. Others press plastic wrap on the surface when the custard is still hot or warm, so when it cools, a skin won't form.

ADDITION OF SUGAR:
Sugar is also important to custard as an addition of it in a recipe results in a softer custard .Sugar also increases the coagulation temperature and time. Don't add all the sugar directly onto the eggs and let it sit; this causes the yolks to "burn" into hard little lumps that detract from your creamy custard. Rather , add the sugar while whisking; This way ,the sugar will be gradually incorporated into the eggs. However, too much sugar prevents the egg from coagulating.

DOUBLE BOILER

Always cook the custard on a double boiler to prevent it from getting burnt .High and direct heat coagulates the egg proteins faster due to which the custard may start burning at the base .Thus a double boiler is used to ensure even heating and cooking of the custard .

14.3 **Cocoa and Chocolate**

- Introduction, Production and Manufacture

HISTORY

Columbus was the first to get cocoa beans to Europe in 1494. In 1519 Cortez who conquered Mexico noticed that the Aztecs made a preparation from roasted gound beans called "CHOCOLATL" from which "chocolate" was derived. Cortez brought this recipe to Spain where it remained a secret for over a century.

This secret was learnt by the French and gradually spread to other countries. In 1657 a French man opened a "chocolate house" in Bishop gate London. By the prominent people like politician and gamblers.

The botanical name for the cocoa tree is "THEOBROMA CACAO" and is cultivated in countries like West Africa, South America, West Indies etc.

MANUFACTURING PROCESS OF COCOA

The fruit consist of pods containing approximately 25-75 seeds surrounding by a juicy soft pulp.

1) The pods are harvested. The seeds ,beans and the pulp is removed from rinds and placed in "sweating boxes" for around 12 days. During this time the pulp ferments as a result of action of wild yeast on pulp sugar converting it into CO2 and alcohol. Acetic acid bacteria oxidize alcohol to acetic acid and the liquid is drained off from the boxes. During fermentation, the temperature rises to 45-50°C which destroys the embryo or germ of the beans.
2) Beans are frequently turned during fermentation preventing the formation of anaerobic organisms(cannot live in the presence of oxygen).
3) After fermentation the beans are dried as soon as possible to reduce the moisture content to 5% by sun drying or artificial heat. This process takes around a week. The beans are then shipped to the factory.
4) Sorting and cleaning: On reaching the factory the beans are cleaned and sorted. Now the beans are ready for roasting which is one of the most important process in manufacturing of cocoa.
5) Roasting: is done to develop
    (i) Full flavor of chocolate.
    (ii) Makes the skin of the bean easy to remove.

This process demands skill and art to achieve perfect flavors. Beans are roasted in revolving drums with temperature of 203°F- 248°F. lower temperature is adopted for chocolate and higher temperature for cocoa.

6) Husking: it is the next process where the dried skin is removed from the beans by air currents producing "coco nibs".
7) Blending: The roasted beans noe broken into nibs, are then blended to obtain a desired result of the finished product such as flavor, olour and eating quality.
8) Milling: The blended nibs are milled to achieve a reduced size. This is done in machines, which consist of 2 grooves horizontally revolving stones.

During grinding, due to friction the temperature rises to around 100° F causing the cocoa butter in nibs to melt reducing the mass to a thick brown viscous liquid called "crude chocolate". If this crude chocolate is cooled and set in moulds it gives unsweetened chocolate which can be used in the bakeries for flavouring and colouring or it may be stored for further manufacturing of cocoa butter to compensate for increased bulk due to the inclusion of sugar.

MANUFACTURING PROCESS OF COCOA

There are 2 methods of producing cocoa powder from nibs

1) Natural process :- finely-milled chocolate liquor is pumped into hydraulic press where at a pressure of up to 6000lb per square inch, some of the cocoa butter is removed depending on the temperature and the pressure used. when Cooled the cake are broken into samall pieces and reduced to powder form either by pulverizing machines

or by reduction rollers. The powder form sieved through silk cloth and packed.

2) Dutch process :- it is similar to the natural process except in the treatment process of beans usually during roasting (the nibs are treated with alkali solution). This result in the elimination of all the traces of acetic acid giving a rich colour, a less bitter flavor and a more stable suspension.

MANUFACTURING PROCESS OF CHOCOLATE

Cocoa butter when cooled set as a hard yellowish fat with a strong odor that is used in the manufacturing ptocess of chocolate to adjust the consistency. Chocolate is a combination of cocoa solids, sugar and butter. In case of milk chocolate, milk solids are added.

1) Mixing :- blended and processed nibs are mixed with cocoa butter, sugar and small quantities of flavouring materials in a "melangeur" (a machines fitted with a granite roller under which the chocolate is directed continuously and mixed into thick heavy paste.
2) Refining:- the chocolate is transferred from the melangeur to the refiner (a machine which consist of series of smooth rollers). The rollers are water-cooled. during this process the particle size is reduced. Because of the chilling the chocolate sets on the rollers which is then scraped off resulting in a flaky powder.
3) Conching:- after warming the chocolate it is passed from the refiner to the conch for further processing. Here the molten chocolate is rolled and buffeted for up to 100 hours to ensure perfect smoothness and flavor. A conch is a heated tank with a concave granite bottom over which a small roller runs back wards and forwards. The tank helps to constantly direct the chocolate back. This process is slow but necessary to get out flavor.
4) Molding:- "the couventure" chocolate is put into storage tanks where viscosity is adjusted by adding cocoa butter. Then it is set in moulds and when ready, packed for distribution.

BLOOM:- this is a whitish steak like formation on chocolate due to varied reasons, there are 2 types of bloom.

a) Grey bloom:- this is caused by dampness or condensation dissolving the surface sugar which re crustallizes on drying. This is also known as "sugar blooms"
b) Yellowish white fat bloom:- this kind of bloom is a result of careless during the process of tempering chocolate.

BAKERS CHOCOLATE COMPOUND:- This can either be plain or milk. It is similar to couveture chocolateexcept that most of the cocoa butter is replaced by hydrogenated vegetable fat and a stabilizer (eg. Lecithin which prevent the added fat from separating). This prevent the chocolate from bloom and therefore needs no tempering.

- Varieties of Chocolates

  1)Bitter chocolate :- bitter or un sweetened chocolate is straight chocolate liquor. It consist no sugar and has a strong bitter taste. Because it is molded into blocks, it is also referred to as "block cocoa". It is used to flavour items that have other source of sweetness. In some less expensive brands, some of the cocoa butter may replaced by another fat.

  2)Sweet chocolate :- sweet chocolate is bitter chocolate with the addition of sugar and cocoa butter in various proportions. If the percentage of sugar is low, sweetened chocolate may be called semisweet or with even less sugar, bitter sweet. Both of these products must contain as little as 35%pf chocolate liquor, and their sugar content may vary from 35% to 50%. A product labeled as "sweet chocolate" may contain as 15% chocolate liquor. Sweet chocolate is not the same milk chocolate. Bitter sweet chocolate has a higher % of chocolate liquor.

  3)Milk chocolate :-it is sweet chocolate to which milk solids are added. It is usually used as a coating chocolate ad in various confections. It is seldom melted and incorporated in batters, because it contains relatively low proportion of chocolate liquor.

4)White chocolate :- this chocolate consist of cocoa butter, sugar and milk solids. It is used primarily in confectionery.

COCO BUTTER :- It is the fat which is pressed out of chocolate liquor when coco is pressed. Its main use in the bakery shop is to thin down melted coating chocolate to the right consistency.(for 1kg of chocolate up to 10gms of cocoa butter can be used).

- Tempering of Chocolates

TEMPERING :- A whitish kind of bloom is visible on set chocolate at times. This occurs when the chocolate is not cooled to the right temperature before setting. The process of working with the chocolate to bring it to the right temperature is called tempering. The final finish of the chocolate (gloss and shine) is largely dependent on the tempering. If couventure chocolate is melted at very high temperature the fat and the solid content split and gets burnt. Couveture chocolate is used for dripping centre, biscuits, covering cakes, gateaux etc.

Ref. Work

1) **Precaution to be taken while making chocolate.**
2) **5 brand names each of indian chocolate (bittersweet, milk, white and cooking).**
3) **5 brand names each of international chocolates (bittersweet, milk, white and cooking).**
4) **What is ganache and give its recipe.**

QUESTION BANK SEM-02

Culinary Terms All

Layout of Kitchen

1. Draw the general layout of kitchen.
2. With the help of diagram explain different layout of kitchen.
3. Write a short note on receiving area.
4. Draw the general layout of store.
5. Write a short note on Wash-up area. Explain any one method.
6. Draw in detail layout of service and wash up area

SOUP

1. Define the term soup. Explain classification of soup with help of chart.
2. Define the term soup. Draw the classification chart with 4 example of each.
3. Describe Consommé. Explain clarification process of consommé.
4. What do you understand by word raft.
5. List 10 types of garnish for consommé with ingredients.
6. List any 10 national soups with country of origin.
7. Briefly explain various types of soups with examples of each.
8. Name at least ten commonly used garnishes for soups
9. **70-75 degree Celsius** is service temperature of hot soup.
10. **07 degree Celsius** is service temperature of cold soup.
11. consommé's is crystal clear **amber** colour liquid.
12. Bisque is traditionally with base of a **shellfish.**
13. Cream soups are soup which are thickened by **béchamel**
14. Green turtle soup is originated from country **England**

FISH MONGERY

1. Classify fish with suitable examples.
2. What are points to be kept in mind with selecting Fin/Shell fish for cooking.
3. List down proper storage and preservation method of fish.
4. With the help of a neat diagram, explain five classical cuts of fish.
5. List down any 10 names of fish with local names.
6. Fresh fish should be stored in boxes containing **Ice.**
7. Cabinet for a cold storage of fish must have a temp of **-18 to -20degree Celsius.**
8. Smoked fish must always be kept in **refrigerator.**
9. Wrap fillet in plastic to avoid **Ice burns**
10. The other name of fish poaching liquor is **Court Bouillon**

11. A fish cut across and through the bone is called **Darne**

POULTRY

1. Poultry refers to **domesticated bird** that is used for food.
2. Poultry is classifieds into the category of **White** meat.
3. Avg weight of Poussin is **300-400gm.**
4. Draw different cuts of chicken.
5. What are points to be kept in mind while selecting poultry.

RICE, CEREALS AND PLUSES.

1. Explain structure and composition of cereals.
2. Short note on nutritional value of cereals.
3. Explain different types of cereals.
4. Give any 10 names on cereals with local name.
5. Explain the classification of rice.
6. Short grain and medium grain rice good for **rice pudding**
7. **Long grain rice** Suitable for pilaf or rice salad.
8. Jasmine rice – is a long grain white rice and soft delicately aromatic from **Thailand**
9. Whole wheat – also known as **wheat berries.**
10. **Polenta –** is grainy flour made from yellow or white corn.
11. Cornmeal – also known as **maize meal**

MEAT AND MEAT COOKERY

1. How would you define a meat? What are its compositions of meat?
2. Define a term Rigor Mortis. What do you understand by the term rigor mortis?
3. What is myoglobin and how does it affect the characteristics of a meat.
4. What do you understand by the term mutton and lamb?
5. List the cuts of Lamb/beef/Pork.
6. What do you understand by the word marbling?
7. What is Chateaubriand?
8. What is leg of mutton in carcass?
9. What are sweet breads?
10. List the selection criteria of good beef/pork/lamb.
11. Explain the different degree of doneness in a steak.
12. At state of rigor mortis, myosin is converted to **Lactic Acid.**
13. Meat should be hung at **2 to 5** degree Celsius.
14. Collagen which is insoluble in nature but converted to **gelatine** by moist heat.
15. To tender the meat, **raw papaya** can be use as a tenderizers.
16. Ham should be soak for at least **24** hrs
17. **Muscle** & **Adipose** are two connective tissues present in meat

MILK AND MILK PRODUCTS

1. Describe the word pasteurization and Homogenisation.
2. List down various forms of milk available in market.
3. Define the word cream. List down different types of cream available in market.
4. Explain the manufacturing process of butter.
5. List down different types of butter available in market.
6. Explain the term Cheese with manufacturing process.
7. Describe the different types of cheese with 5 examples of each.
8. What are different uses of cheese in cooking?
9. Name the constituents of milk.
10. What are the various types of dairy products used in kitchen and what are the specific uses of each.
11. Name at least 5 types of creams used in cooking.
12. Write short notes on (any two):
    (a)Processing of cream
    (c)Types of butter
    (d)Steps involved in cheese making
13. Butter is a natural dairy product made by **churning** fresh cream.
14. Lactic butter is also called as **continental taste butter**.
15. Butter is refrigerator from **2-5** degree Celsius.
16. The principle protein in milk is **casein**
17. **Rennin or Rennet** is added which causes the milk to curdle.
18. Approximately **10** litres of milk is required to make 1 kg of cheese.
19. To obtain blue vein in cheese, a fungus name **Panicillium Glaucum** is added.
20. The three principle milk proteins are **casein, lacto globulin, and lacto albumin**
21. Milk is good source of Vitamin **A** and Vitamin **B2**
22. In industrial production of cream this process is accelerated by using centrifuges called as **SEPARATORS.**
23. Butter generally melts at **32-35** degree Celsius
24. The blue veined cheese from England is **Stilton**

THICKENING AGENTS USE IN INDIAN GRAVIES

1. Explain the role thickening agent use in Indian Cookery.
2. List at least 5 thickening agents used in Indian cooking

INDIAN COOKERY

1. Name at least 10 aromatic spices used in Indian cooking
2. Write a short note on the role of Indian spices in Indian Cuisine
3. What are different uses of spices.

4. Differentiate between Spices and Condiments.
5. List down varieties of condiments.
6. List down various uses of condiments.
7. List down any 10 spices with Indian equivalent names.
8. **Hoisin sauce** is also known as suckling pig sauce.
9. **Light soy** sauce is a thin, opaque, dark brown sauce.

MENU PLANNING

1. Explain the different types of menus.

2. Differentiate between A la Carte and Table d Hote menu

3. Explain the different types of breakfast menu.

4. Describe the factors affecting while planning menu.

Bakery

Objective questions:
Q-1) Fill in the blanks:-
a) The term "Theobroma" means **Food of The Gods.**
b) The word cocoa has originated from the Aztec word **"Cacahuati**
c) The meaning of Forasteroin spanish is **Foreign**
d) The meaning of Crillo in spanish is **Native**.
e) **Triniterio** is the hybrid of Forastero & Crillo.
f) The term pastry comes from the word **paste**
g) The basic ratio of short crust pastry is _**1:2**_ .
h) Phyllo pastry is **thin pastry** made with flour water & butter.
i) Crème patisserie also known as **pastry cream** .
j) Pastry cream contains **Starch** which stabilizes the eggs.
k) if the chain has empty spaces that could hold more hydrogen, it is called as **Unsaturated** .
l) Saturated fats are **Solid** at room temperature.
m) **Hydrogenation** process turns liquid oils into solid fats.
n) Suet is found mostly kidney of **Beef/lamb** .
o) Lard is **Pork** fat.

Q- 2) True & false:
a) Pastry cream is a thick custard sauce containing egg & gelatine.- **FALSE**
b) Suet is found mostly around the kidney of beef/ lamb.- **TRUE**

c) Short crust pastry contains leavening agent.-FALSE
d) Scotch & Blitz methods are two different methods of making pastry.- **FALSE**
e) Yeasted pastries are a combination of puff pastry & bread.- **TRUE**
f) Lamination is a way of adding the roll -in fat to the dough.- **TRUE**
g) Choux means cauliflower in French.- **TRUE**
h) Saturated fats are liquid in nature.- **FALSE**
i) cocoa powder is unsweetened powder.- **TRUE**
j) Melted chocolate when comes in contact with moisture becomes solid.- **TRUE**

=> Explain the terms in 1-2 sentences:-
1) Winnowing
2) Conching
3) Chocolate liquor
4) Couverture
5) Compound chocolate
6) Saturated fats
7) Unsaturated fats
8) Margarine
9) Choux pastry
10) Phyllo pastry
11) Gianduja chocolate
12) Bloom

=> Short questions:-
1) Explain the 3 basic varieties of chocolate & 2 by-product of chocolate.
2) What is the laminated pastry? Write down different methods of enclosing fat when making puff pastry with diagram.
3) What is the meaning of laminated pastry? Explain it in brief with example.
4) What is pastry cream? Explain it with making procedure.
5) Write the functions of fat in bakery.
6) Write down the difference between saturated & unsaturated fat
7) What are the different shortenings used in bakery & confectionary? Explain any 4.
8) What is the meaning of tempering in chocolate & write down different methods of tempering of chocolate.