Vocational Higher Secondary Education (VHSE)

Second Year

FOOD AND RESTAURANT MANAGEMENT

Reference Book

Government of Kerala
Department of Education

State Council of Educational Research and Training (SCERT),
KERALA
2016

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Foreword

Dear Learners,

This book is intended to serve as a ready reference for learners of vocational higher secondary schools. It offers suggested guidelines for the transaction of the concepts highlighted in the course content. It is expected that the learners achieve significant learning outcomes at the end of the course as envisaged in the curriculum if it is followed properly.

In the context of the Right- based approach, quality education has to be ensured for all learners. The learner community of Vocational Higher Secondary Education in Kerala should be empowered by providing them with the best education that strengthens their competences to become innovative entrepreneurs who contribute to the knowledge society. The change of course names, modular approach adopted for the organisation of course content, work-based pedagogy and the outcome focused assessment approach paved the way for achieving the vision of Vocational Higher Secondary Education in Kerala. The revised curriculum helps to equip the learners with multiple skills matching technological advancements and to produce skilled workforce for meeting the demands of the emerging industries and service sectors with national and global orientation. The revised curriculum attempts to enhance knowledge, skills and attitudes by giving higher priority and space for the learners to make discussions in small groups, and activities requiring hands-on experience.

The SCERT appreciates the hard work and sincere co-operation of the contributors of this book that includes subject experts, industrialists and the teachers of Vocational Higher Secondary Schools. The development of this reference book has been a joint venture of the State Council of Educational Research and Training (SCERT) and the Directorate of Vocational Higher Secondary Education.

The SCERT welcomes constructive criticism and creative suggestions for the improvement of the book.

With regards,

Dr. P. A. Fathima
Director
SCERT, Kerala

CONTENTS

About the course 5

Major skills 7

Syllabus 8

Overview of Module 3

Unit 1 - Fish and Meat Cookery 11

Unit 2 – Cheese, Pasta and Sandwiches 18

Unit 3 – Bakery and Sweets 21

Unit 4 – International and Regional Cuisines 29

Unit 5 – Types of Service and Menu planning 32

Unit 6 - Alcoholic beverages and their service 36

Unit 7 - Function Catering 43

List of Practicals 64

Overview of the Module 4

Unit 1 – Information technology 65

Unit 2 – Computer hardware and Operating system 79

Unit 3 – Office Automation 97

Unit 4 – Linux and Open office 109

Unit 5 – Internet and Malayalam computing 120

List of Practicals 127

List of References 128

PART - A
ABOUT THE COURSE

The goal of vocational higher secondary education is to fulfill the manpower requirements for national development and social security through employment. This course is designed with ample scope for self as well as wage employment. Only vocationally competent man power can increase productivity in all sectors of the economy, create wealth, ensure socio economic stability and bring prosperity to the nation. The course provides an introduction to the basic principles of food preparation including safety and sanitation. The students will learn the fundamentals of cookery, cooking methods, food preparation and enable them to make informed decisions about all aspects of food production. The components of purchasing, receiving, storing and issuing food are analyzed as they relate to menu planning and also provides students with knowledge and experience in food service concentrating on practical skills of providing specialist food service advice. The steps of sales and order taking are examined and students are made familiar with various dishes and accompaniments. The correct procedures with regard to restaurant service and the important characteristics of quality customer service are examined. The course examines the basic technical knowledge, practical and social skills and computer skills required to enable food and beverage student to achieve a proficient standard for a range of cuisines and service types in different international hospitality industries.

Vision

To make available skilled, trained and competent work force in middle level blue collar job which will stimulate the economy and lead to increased productivity and faster development.

Mission

To fulfill the man power requirement for national development and for social security for the citizen through employment.

Objectives

- To introduce attractive courses and schools relevant to the present scenario.
- To modify curriculum to cope up with the changing trends.
- To convert schools into production / service cum training centres.
- To create avenues for OJT for confidence building of students.
- To initiate action for the modification of recruitment rules of other departments so as to incorporate VHS qualifications.

- To explore the possibility of apprenticeship training to all the pass outs.
- To make available the expertise of the specialized teachers and students for the benefit of the local community.
- To conduct awareness campaign for VHS scheme in the feeding schools.
- To conduct seminars by incorporating PTA and students about recent technological advancements.

Vocational education is designed to prepare skilled work force in middle level in one or more group of occupations trade or job after matriculation at 10 + 2 stage of Education. The objective of the course is to enhance individual employability and to provide an alternative for those pursuing higher education without particular interest or purpose. It is a distinct stream intended to prepare students for identified occupations.

Food and Restaurant Management as a career

As the shift from traditional set up to those of modern lifestyles took place, eating, one of the basic daily needs for survival, was commercialized in the form of catering industry paving the way for commercial food production and service. There is a tremendous potential for growth in this sector with spurt in tourism. To meet this growing challenges the hotel industry will have to expand. An important sector in hotel and restaurant is food and beverage production and service. Besides, there are other forms of commercial catering such as hospital catering, industrial catering, commercial catering, institutional catering, etc. The services in each would have to meet the highest standards to compare with the best. To meet this challenge the learners have to attain skill proficiency. In view of the above Food and Restaurant Management has been conceived at vocational higher secondary level to train required manpower for the industry. On completion of the course the learners will be adequately qualified to take up responsible positions in different catering establishments or set up their own catering service. To achieve this objective learning situations are to be provided inside and outside the classroom to develop creativity, experimentation and innovation Food and Restaurant Management provide a high quality education programme in the food production and service industry. We fulfill this mission through a commitment to student achievement life long learning. Utilizing a blend of theory, skill development and practical applications; students will gain the necessary experience to sufficiently enter the food production and service industry.

Scope of Food and Restaurant Management

Food and Restaurant Management is one of the career options within the fast paced world of hospitality. Workers in this profession oversee the daily operation of a variety of establishments in the food service industry like hotels, restaurants, flights, cruise liners, etc. apart from the above mentioned sectors of workplaces including cafes, restaurants, staff restaurants, transport terminals, fast food, catering or tourist establishments, and institutional food service facilities. A waiter/ waitress maintains customer facilities and displays products available for sale as well as presents, sells and serves the customer products and services. They serve individual customers and customer groups. They work in co-operation with other employees toward promoting customer comfort, safety and well-being. They work in accordance with the requirements for sustainability and hygiene, and observe all applicable license regulations and other sector agreements and statutes.

Major Skills

Module 3 – Catering & Restaurant Supervisor

- Cooking skill
- Menu planning skill
- Food & beverage service skill
- Supervisory skill

Sub skill

- Cutting skill
- Presentation skill
- Communication skill
- Interacting skill

Module 4 –Computer Application in Food & Restaurant Management

- Information Communication Technology skill

Sub skill

- Assembling computer skill
- Data processing skill
- Malayalam computing skill
- Communication skill

SYLLABUS

Module III - Catering and Restaurant Supervisor

Unit I - Fish and Meat Cookery — 75 Periods

Classification of fish, Purchase specification of fish, Cuts of fish, Meat cookery, beef – Purchase specification, Cuts of beef, Mutton - Purchase specification, Cuts of mutton

Pork – Purchase specification, Cuts of pork, Poultry – Purchase specification, Cuts of poultry

Unit II - Cheese, Pastas and Sandwiches — 25 Periods

Cheese – Classification of Cheese, Pastas – Introduction to pastas cookery, Types of pastas

Sandwiches – Types of sandwiches

Unit III - Bakery and Sweets — 30 Periods

Bread – Ingredients & Bread making, Cakes, Pastry, Biscuits, Cookies, Sweets

Unit IV - International and Regional Cuisine — 40 Periods

Continental Cuisine, Chinese Cuisine, Indian - South Indian & North Indian Cuisine

Unit V - Types of Service and Menu Planning — 60 Periods

English Service, French Service, American Service, Silver Service, Russian Service, Room Service, Cafeteria Service, Gueridon Service, Menu Planning – Factors to be considered while planning a menu

Unit VI - Alcoholic beverages and their service — 40 Periods

Introduction to Alcoholic beverages, Classification of Alcoholic Beverages, Fermented drinks – (Beer, wine) Distilled Drinks – (whisky, brandy, gin, vodka, rum, tequila), Service of alcoholic beverages, Cocktails and liqueurs

Unit VII - Function Catering — 70 Periods

Types of Functions, Banquets – Staff organization, Banquet booking, Banquet Table layouts, Outdoor Catering

Module IV - Computer Application in Food and Restaurant Management

Unit I - Information Technology 50 Periods

Introduction to Information Technology – Data processing - Data presented inside a computer - Characteristics of computers - History of computers -Evolution of computers - Classification of computers - Hardwared programming and stored programconcept - Computer Organisation – Computer as a data processing machine - Basic computer operations - Functional units - System components - Input/ Output ports (I/O ports) – Microprocessor - The Memory - Memory organisation - Types of memory - Advanced portable storage devices - Memory hierarchy - Input / Output Devices - Computer Software - Software - Classification of software - Malicious Software – Copyright - Software piracy-Licensing - Free software philosophy - Application of information Technology – Communication – Business - Medicine and Health care – Entertainment - E-Governance – Education - Engineering manufacturing – Science - IT policy in Kerala state - E-commerce - M-commerce - Online trading - Net-Banking

Unit II - Computer hardware and operating system 80 Periods

Components of a Personal Computer - Parts of a personal computer – Booting – BIOS – POST - Disk Operating System - Windows 7 OS - Basic file and folder operations - Accessories - Installing and Managing Windows 7 – Steps to install Windows 7 - Hard drive preparation – Formatting - Device Driver - Installing a printer driver - Changing file views in windows7 - Control panel - User creation and rights - Trouble shooting - Creating start-up disk - Sharing files - Internet connection and Firewall -Windows Explorer- Installing MS office- Installing DTP software – Installing Tally - Maintaining Computer Software - Transferring computer data

Unit III - Office Automation 100 Periods

Office Automation basics - Concept of office -Nature of work in office - Need for office automation - MS Word- User interface of MS word - Creating a document - MS Excel - Starting MS Excel - User interface of MS Excel- The work sheet - Formulae - Sorting - Working with chart - MS Power point - Creating presentation in different ways - Inserting a new slide - Adding themes - Saving a presentation- Set up the show - MS Access -Advantages of DBMS - Data Models - Terminologies used in RBDMS - MS Access - Creating a query in the query design option - Creating a form using Form wizard – Reports – Import - MS Outlook

Unit IV - Linux and open office 50 Periods

Introduction to Linux -History of Linux - Advantages of GNU Linux - Linux file system structure - Linux Kernel - Login and logout in Linux - Linux command - Open Office writer - Introduction to Open office - Apache Open Office - System requirement Starting Open Office Writer - Advanced features of Open Office Writer - Character Formatting - Background Colour - Paragraph Formatting - Bullets and Numbering - Indents - Creating an index of a document - Open office calc -Selecting cells - Cell formatting - Inserting Rows/Columns - Built in functions - Charts in Calc - Addressing Cells - Data Range - Work sheet -Auto fill – Filter - Data Sorting - Totals and sub totals - Protection - Open office impress - Important features of impress - Bringing different objects into slides - Adding Text - Different views - Adding New Slides to Your Presentation – Background - Slide Transition -Animating objects in a slide -Watching slide show.

Unit V - Internet and Malayalam computing 60 Periods

Introduction Computer Networks - LAN Topologies – Protocols - Connectivity devices -Windows 7 Firewall Settings - Internet and Email - History of the Internet - Connecting Computer to Internet Connection - World Wide Web (WWW) - Web Browser - Search Engines - Email (Electronic mail) - Creating and using free email account with Gmail - Types of Internet Web page Designing – HTML-Starting with HTML - Attributes of <HTML> tag-Malayalam Computing - Malayalam through Computers - Free Software and Language Computing - Malayalam and Technology - Malayalam digital Technology – Unicode -Malayalam Using Transliteration - Malayalam Word Processing - Downloading and Installing Malayalam Fonts - Installing Fonts in Windows - How to enable Malayalam in Web Browsers - Malayalam in UBUNTU - Malayalam keyboard and Typing - Ethical and Social Issues in Information Systems.

PART - B
OVERVIEW OF MODULE - 3
CATERING AND RESTAURANT SUPERVISOR

This module is designed to equip the students with supervisory skills in catering and restaurant operations. Students continue their knowledge acquiring and skill practices in a more standardized and advanced environment. After completion of the module, he/she may be able to supervise food and beverage production and service activities in the establishments such as hotels, restaurants, industrial catering, welfare catering, transport catering, etc. They will be able to ensure that customers are satisfied with the quality of food and service provided.

Unit - 1
FISH AND MEAT COOKERY

Introduction

This unit deals with the concepts of fish & meat cookery in general which educates the amateur chefs in the Hospitality Industry. Classification of fish & meat, their cuts, purchase specification and cookery are discussed in this unit.

Learning outcomes

The learner :

- Classifies different types of fish
- Recognizes purchase specification of each fish
- Prepares popular fish dishes
- Classifies different types of meat and its cuts
- Recognizes purchase specification of different types of meat
- Prepares popular meat dishes

Concepts

3.1.1 Fish Cookery

3.1.1.1 Classification of fish

Fish is classified into Fin Fish & Shell Fish. Fin Fish is subdivided into White Fish and Oily Fish. Shell Fish is subdivided into Molluscs and Crustaceans. Molluscs are again subdivided into Bivalves & Univalves.

- Fin Fish - They are vertebrates and have skin and scale which cover all over the body, and they move with the help of fins.
- White Fish - They are mainly flat fish with oil only in the liver. E.g.– Pomfret and sole.
- Oily Fish - They are mainly round fish with fat all over the body. E.g.- Mackerel, sardine.
- Shell Fish - Shell fish have shell covering the body. They are invertebrates. They are sub divided into:

Molluscs – They are of two types -

- Bivalves – they have two shells joined by hinge like membrane. E.g.-Mussel, Oyster, Clam.
- Univalves – they have spiral shells. E.g. – winkles, whelks.

Crustaceans – They are shell fish with many shells. E.g. - Crab, Lobster, Prawns.

3.1.1.2 How to select a Fin Fish

- Eyes should be bright and not sunken.
- Gills should be red.
- The flesh should be firm and not flabby.
- The tails should be stiff.
- The scales if any should be plentiful.
- There should be no unpleasant odour.
- To test a cut piece pressed down with finger and if any impression is left on them, the fish is stale.
- Any tendency of raw flesh to come away from the bones is a dangerous sign.

How to select a Shell Fish

- Claws of Crab should be springy and not hanging down.
- Eyes should be bright.
- Tale of Lobster should spring back when stretched out.
- Shrimps and Prawns should be crisp.
- Oyster shell should be tightly closed.

3.1.1.3 Cuts of Fish

- Whole fish.
- Fillet – it is boneless cut of fish. Fillet can be cut in to four.
    1. Chateaubriand (head of a fillet).
    2. Fillet Steak.
    3. Tournedos.
    4. Fillet Mignon (tail of a fillet).
- Supreme – Two fillet joint together.
- Troncon – Vertical cut of flat fish with bone.
- Darne – Vertical cut of round fish with bone.
- Goujon – Fillet of a flat fish cut into long strips.
- Delice – Neatly folded fillet of a small fish
- Rubane – Ribbon size.

3.1.1.4 Fish cookery

Flesh of a fish is very delicate therefore great care must be taken to prevent the flesh from breaking down during cooking. The liquid should be at simmering point when fish is added. Methods of cooking like steaming, grilling, frying, poaching, baking can be applied. The time taken for cooking is very less. The fish is generally boiled in court bouillon. This is salt, water, milk, lemon juice, thyme, peppercorn, parsley, bay leaf, carrot and onion.

3.1.2 Meat cookery

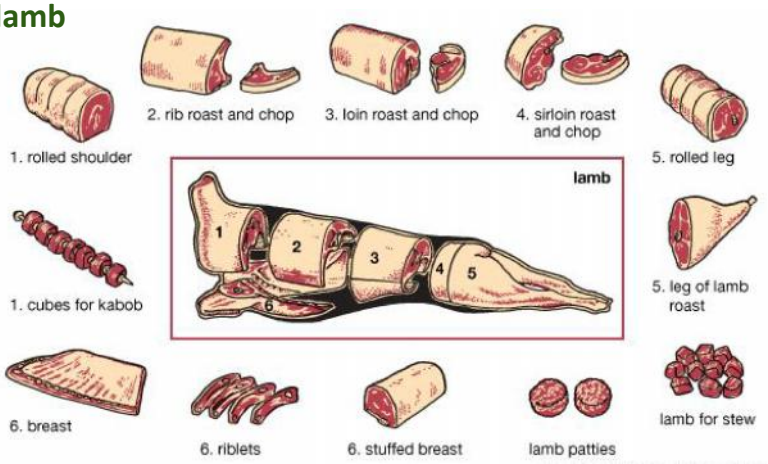
The term meat is generally applied to butcher's meat- mutton, beef, lamb, pork and kid. The tenderness of meat depends on the age feeding of the animal, on the hanging and the preparation after killing. The muscle structure has an effect on the tenderness and the texture of the meat. Meat should not be eaten immediately after killing; it has to be hung till tender. Longer the meat is hung stronger the flavor. Owing to certain chemical changes shortly after death rigormortis sets in and muscle stiffens. Meat must be hung at 1- 3 C. Whenever possible select the meat which is marbled. This is meat where the fat is inter spread between muscle fibers and connective tissues.

3.1.2.1.Mutton /Lamb

It is the meat of sheep or goat. Mutton is taken from older animal and lamb from younger animal.

Cuts of mutton/ lamb

1. Scrag end
2. Middle neck
3. Shoulder
4. Best end neck
5. Loin
6. Chump
7. Leg
8. Breast



3.1.2.1 Signs of good quality mutton/lamb

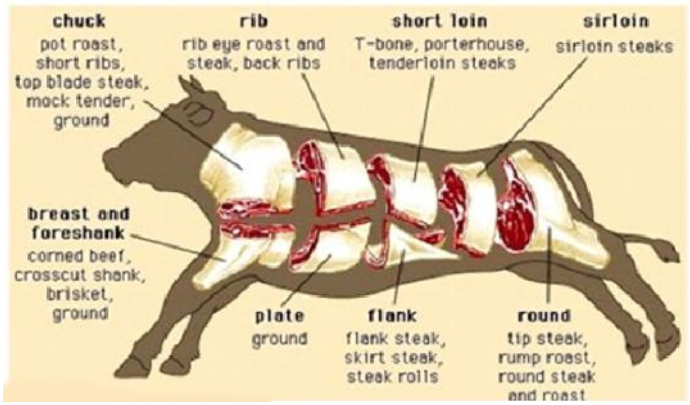
1. Good quality animal should be compact and evenly fleshed.
2. Lean meat should be firm of pleasing dull red colour and of a fine texture.
3. There should be an even distribution of surface fat, which should be hard in texture.
4. The bone is pink and porous for young animal so that when it is cut small amount of blood can be seen.

3.1.2.2 Beef

It is the meat of bull.

3.1.2.3 Cuts of beef

1. Chuck
2. Rib
3. Short loin
4. Sirloin
5. Round
6. Flank
7. Plate
8. Brisket / Breast
9. Fore shank



3.1.2.3 Signs of good quality beef

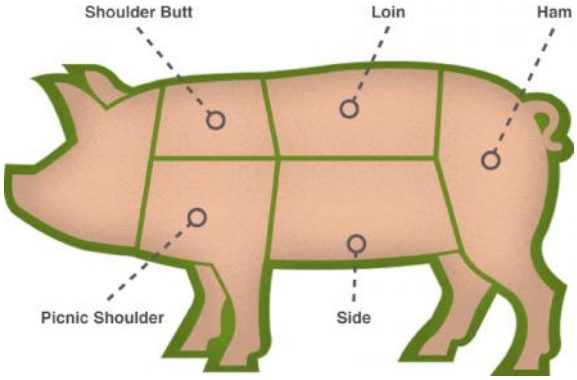
1. Lean meat should have bright red colour, with small flakes (shades}
2. The fat should be firm, brittle, creamy white in colour and odour less.
3. Beef in good condition should have streaks of fat running through the lean section and the flesh should rise again quickly after being pressed with the fingers.

3.1.2.4 Pork

It is the meat of pig.

3.1.2.5 Cuts of pork

1. Spare rib / Shoulder but
2. Loin
3. Leg / Ham
4. Belly / Side
5. Shoulder / Picnic shoulder
6. Trotter



Bacon is made by preserving the meat of carefully dried meat of pork. Preservatives is salt.

Ham comes from the hind leg of a pig. It is cured after cutting, usually the long process of dry salting.

3.1.2.6 Signs of good quality Pork

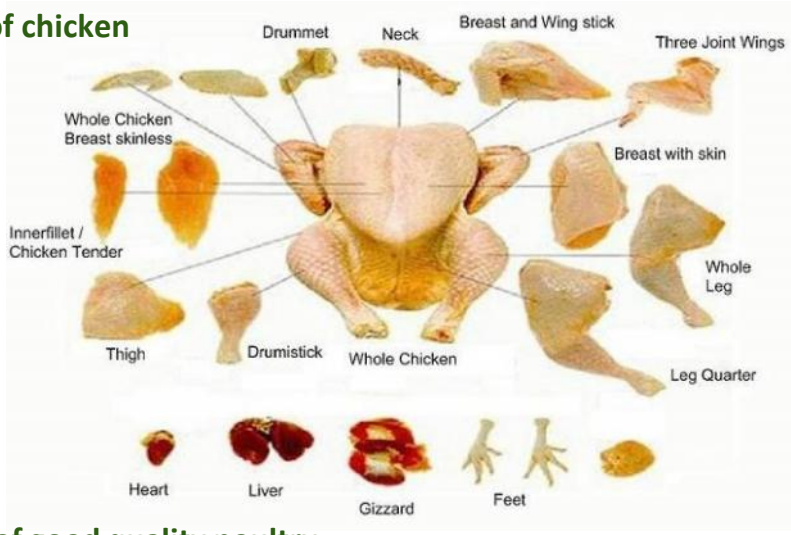
1. Clean flesh should be pale pink, firm and with a fine texture.
2. The fat should be white, firm, smooth and not excessive.
3. Bone should be small, fine and pinkish
4. The skin or rind should be smooth.

3.1.2.7 Poultry

Poultry in general is a term applied to all birds, fed for their meat. They are normally domestic birds specially bred to be eaten. These includes different varieties and sizes of chicken, duck, goose, turkey, guinea – fowl and pigeon.

3.1.2.8 Cuts of chicken

1. Neck
2. Wings
3. Winglets
4. Thigh
5. Breast
6. Drumstick



3.1.2.9 Signs of good quality poultry

1. Feathers, especially the quills on the wings should be easy to pull out.
2. The skin should be clear and smooth. It should be unbroken with no cuts, blood patches or evidence of bruising.
3. The feet should be supple with smooth even over lapping scales.
4. Comb and wattle should be small and not well developed.
5. The legs should be compact and well fleshed.
6. The skin should be of pale white colour for chicken & turkey, a rich cream white for duck & goose, grey white for guinea- fowl & pigeon.

Practical activities

Activity – I

Practicals on fish based dish like karimeen pollichathu, Fish moilee, fish fry, Malabar fish curry, etc.

Students prepare the dishes after studying the recipe and making proper indent. Prior to this demonstration or video presentation can be done

Activity- II

Practicals on Meat based dish like beef fry , roast, chicken khuruma, chettinadu chicken, butter chicken, lamp roast, etc.

Students prepare the dishes after studying the recipe and making proper indent. Prior to this demonstration or video presentation can be done.

Assessment Activities

Activity – I

Conduct field visit to the nearby market to observe different types of meat and fish. Then students are asked to classify the fish and meat based on their characteristics and list out the purchase specification.

TE Questions

1. If you are asked to prepare prawns biriyani, what could be the signs of good quality in prawns you select.
2. Pick the odd one out:-

   1. Supreme 2. Darne 3. goujon 4. loin
3. Prepare the recipe for any one of the dish:

   Chicken kariyali

   Beef pepper fry

   Fish vatichathu
4. Distinguish between bacon and ham?

UNIT - 2
CHEESE, PASTA AND SANDWICHES

Introduction

This unit deals with food categorization such as sandwiches, cheese, pasta and burger. Their classification is done here .The detailed study of the products are discussed hereby. The various dishes prepared with respective ingredients are given with examples.

Learning outcomes

The learner :

- Classifies Cheese, Pastas, Sandwiches
- Prepares Paneer
- Prepares Cheese based dishes
- Prepares Pasta dishes
- Prepares popular sandwiches

Concepts

3.2.1 Cheese

Cheese is a product of fresh milk cream, or milk and cream mixed together. It is made by first pasteurization of good quality milk curdling with the addition of bacteria and rennet. The solid portion, curd is separated from the liquid portion, – whey. The curd is put into moulds to mature and becomes cheese .It is also subjected to pressure which determines the type of cheese. Cream cheeses are subjected to light pressure while hard cheeses are subjected to heavier pressure. The character, texture and flavour are dependent on the land on which the cattle graze.

3.2.1.1 Classification of cheese

Cheese is divided into

1. Hard
2. Semi Hard
3. Soft or Cream
4. Blue

Hard Cheeses –Edam , Paramesan ,Gruviere, Cheddar, Chessire, Derby

Semi Hard Cheese –Caephilly , Pont Eveque , Port Salut

Soft Cheese- Camembert, Brie

Blue – Stilton , Gorgon Zola

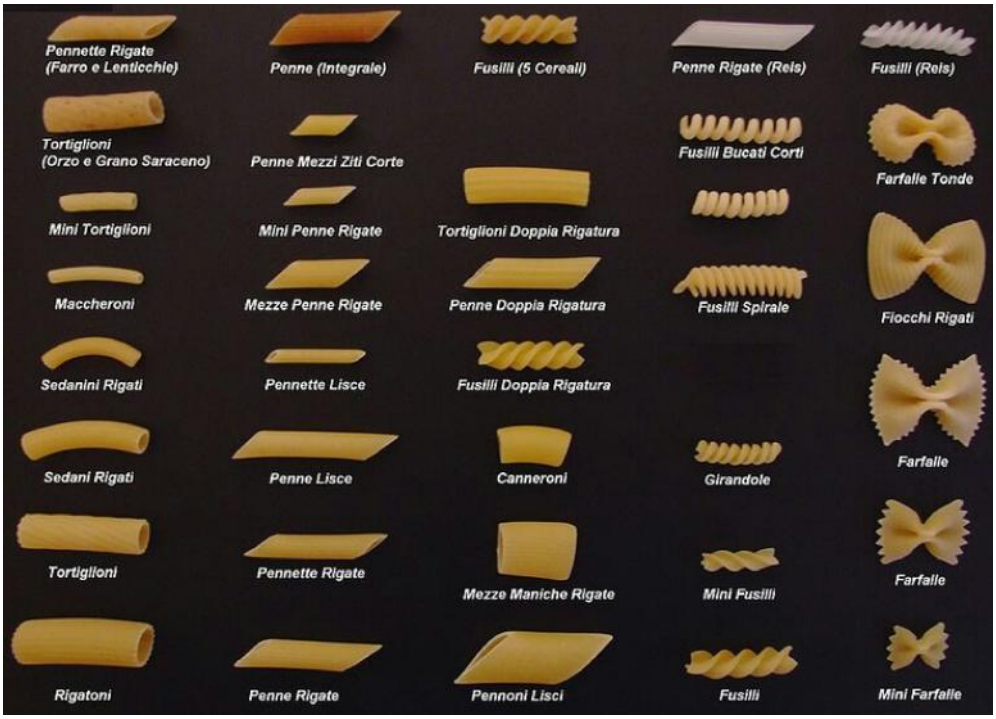
3.2.2 Pasta cookery

Pastas are paste made from wheaten semolina [durum wheat flour]on a variety of shapes and is then dried. Among the best known are Macaroni , Spaghetti , Vermicelli, Ravioli and Cornets. Pastas are cooked in boiling, salted water for 12 to 16 minutes.

Pastas is mainly of two types: 1. Factory made pasta 2. Homemade pasta (fresh pasta

It is made from wheat flour and water.

E.g. : Spaghetti Neapolitan , Spaghetti Bolognaise. Macaroni Cheese Surprise.



3.2.3 Sandwiches

Sandwich is a food item consisting of one or more types of ingredients such as vegetable, sliced cheese, meats, etc. placed on or between slices of bread.

3.2.3.1 Types of sandwiches

A. Open sandwiches – One slice of bread with toppings

B. Closed sandwiches – Two slices of bread with fillings

C. Club sandwiches – 3 or more layers of bread with different fillings.

3.2.3.2 Burger

It is a sandwich consisting of a Bun, Cooked pate and often other ingredients such as cheese leafy vegetables and condiments.eg: hamburger cheese burger beef burger.

Practical Activities

Activity - I

Practicals on cheese based dish like savory tarts, cheesecakes, cheese toast, etc.

Students prepare the dishes after studying the recipe and making proper indent. Prior to this demonstration or video presentation can be done.

Activity - II

Practicals on pasta based dish like tomato pasta, macaroni and cheese, making fresh pasta, etc.

Students prepare the dishes after studying the recipe and making proper indent. Prior to this demonstration or video presentation can be done.

Assessment Activities

Activity –I

After a video presentation the students identify different types of sandwiches and write a report in the activity log.

TE Questions

1. Chesire, cheddar, stilton and brie are examples of cheese. Identify to which type they belong.
2. If you are asked to prepare the Club sandwich what are the ingredients you will select?
3. Match A with B and C

A	B	C
Open sandwich	3 slices of bread	many fillings
Closed sandwich	1 slice of bread	1 filling
Club sandwich	2 slices of bread	1 topping

Unit - 3
BAKERY AND SWEETS

Introduction

When you mix or blend many dry ingredients, liquids and leavening agents together , expose the mixture to heat ; a variety of action combine as one unit. Butter and sugar melts, egg coagulates, liquids make steams, flour and starch swells, baking powder/ baking soda/ yeast form gases. In this unit the learner acquires knowledge and skills in handling bakery equipments, ingredients and baking

Learning outcomes

After the completion of this unit the learner will be able to –

- Recognize the role of each ingredient in Bread
- Prepare Bread
- Identify different barked products (Cakes, Pastry, Biscuits, Cookies etc)
- Prepare different Sweet dishes

Concepts

3.3 Bakery

Baking is one of the most attractive sections in a kitchen. Some of the common the ingredients used in baking are:

1. Fats/oils: butter, margarine, vegetable shortenings.
2. Sugar and sweeteners: Granulated sugar, powdered sugar, brown sugar, maple sugar, invert sugar, molasses, malt, syrups, etc.
3. Leavening/ raising agent: baking soda (sodium bicarbonate), baking powder (baking soda + one acid), yeast.
4. Flour: cake flour, bread flour, pastry flour, all purpose flour and whole wheat flour.

5. Eggs
6. Milk and milk products: pasteurized milk, butter milk, cream, yogurt.
7. Spices : All spices (cinnamon, cloves & nutmeg)
8. Chocolate and cocoa: dark chocolate, milk chocolate, etc.
9. Cheese: Baker's cheese, cream cheese.
10. Fruits and nuts: apple, banana, orange, almonds, walnuts, cashew nut, hazelnuts.
11. Starch : Corn starch, instant starch, waxy starch
12. Salt.

3.3.1 Breads

Bread is composed of various ingredients. They are:

1. Flour: Generally refined flour is used. Bread flour, which contains stronger gluten, makes excellent bread.
2. Sugar: It furnishes food for the yeast and help in browning the loaf.
3. Salt: Improves flavour & texture, it controls yeast action so that the dough does not rise too quickly.
4. Yeast: Tiny yeast feed on sugar. It produce carbon dioxide gas which makes the dough rise.
5. Fat: Fat used in bread making increases tenderness/volume, improve texture, flavour and contributes golden brown colour to the crust.
6. Liquids: Milk or water may be used. Milk in any form increases the food value of the bread and improves its keeping quality. Bread made with water has a nutty flavour and a crisper crust than a bread made with milk.
7. Other ingredients: eggs, fruits & nuts/spices may also be used.

Best temperature for baking bread is 205°C (400°F) for 20 minutes.

3.3.1.1 Bread making

There are different types of dough making for breads. Some with enriching agents and other with no enriching agents. They are called rich dough and lean dough respectively.

The various steps in bread making are:

1. Dough making – For making the dough, the ingredients are mixed in 2 methods.

a. Straight dough method

b. Sponge dough method.

Straight dough method

Small retail & domestic users are following straight dough method. Here the yeast is combined with a portion of water and is kept for proofing. The remaining water, salt, sugar and the flour are mixed together for one minute and added to the proofed yeast. This is again mixed for one minute. Finally the shortening is added to the dough and mixed for 10-15 minutes, till the dough is smooth. Points to remember- Shortening added last otherwise good mixing is not possible, 15 minutes mixing makes gluten more elastic.

Sponge dough method

This method is used in large quantity bread making. Firstly, the yeast is mixed with whole liquid. Part of sugar and flour are also added to this mixture to make a thick batter. It is covered and kept for fermentation. Secondly, the fermented batter after 30-40 minutes becomes double the quantity and is punched to remove the carbon dioxide. Then all the remaining ingredients are added to make smooth dough and keep for 6 hours for fermentation.

2. Raising the dough – The dough is never disturbed during fermentation. The right temperature is 80-85. Fermented dough is tested by lightly pressing with the finger tips. If the dough comes back, it is ready. If the humidity is less, a wet cloth is used to cover the dough to prevent skin or crust formation.

3. Forming the loaves – After the dough is raised it is formed or benched. This is done on baker's table. It involves 3 stages.

   - Scaling – Dividing and weighing the dough into pieces using a scale.
   - Rounding – It is shaping the dough into smooth round balls using palms. After making the balls it is covered with a wet cloth and is kept for 15-20 minutes.
   - Make-up – This is done to give the dough the final shape. E.g. croissants, rolls, stick etc.

4. Proofing – Proofing means final fermentation of the dough. It allows the yeast to develop completely. The time for proofing is 50-75 minutes.

5. Washing – Washing is done using a brush. Water wash is done for hard bread; egg and milk wash for soft and rich bread, honey and sugar syrup wash for sweet breads.

6. Baking – The proofed loaves are very tender and soft. So handling may spoil its shape. To prevent this, proofing is done on trays in which it is going to bake. When baking the oven should be pre- heated and the opening of the oven door should be very minimum. The time and temperature for baking depends on the product to be baked. For large breads longer baking time at lesser temperature is needed whereas for hard breads, high temperature is used for lesser time.

3.3.1.2 Bread faults and their causes

1. Poorly shaped loaf
   - Too much flour or not enough flour
   - Dough too light while baking.
2. Streaks
   - Dough allowed drying on top during raising period.
   - Dry flour folded into loaves during shaping.
3. Soggy or heavy
   - Too much flour
   - Insufficient rising or baking.
4. Off flavour
   - Old yeast
   - Too high temperature during rising.
5. Crumbly
   - Not enough kneading
   - Too much rising before baking.

3.3.2 Cakes

Ingredients used in cake making are:

1. Flour – soft refined flour is used.
2. Liquids – milk is the common liquid used.
3. Sweetener – granulate sugar and brown sugar is commonly used.
4. Shortening – This gives moisture to the mixture and helps in holding air. The best shortening used is butter and hydrogenated oils.

5. Salt – This improves the taste, helps in strengthening gluten and gives structure to the cake.
6. Egg – It acts as a binding agent, thus gives structure.
7. Leavening agent – Chemical leavening agent, steam, mechanically incorporated air acts as raising agents in cake.

The type of cake depends on the type of mixture made. There are 3 types of cake mixtures.

1. Batter cake mixture – In this mixture, there is high percentage of fat.
2. Foam cake mixture – Here the fat content is very less, major leavening agent is mechanically incorporated air.
3. Chiffon cake mixture – Batter cake mixture and foam cake mixture are mixed together slowly. The folding is done just before baking.

3.3.2.1 Cake making

1. Preparing the pan – The pan should be greased with butter and lightly floured. It prevents sticking of cakes to the pan / or it can be lined with grease proof paper.
2. Mixing of the cake mixture – during mixing correct quantity of ingredients, procedure and temperature should be followed.
    - Mixing of batter cakes – Firstly, butter or shortening is creamed. Egg is then added to the creamed butter slowly. Finally, flour and other ingredients are added and mixed thoroughly.
    - Mixing of foam cakes – Firstly, egg yolk is beaten. Then sugar & other flavourings are added to it. The egg white is beaten separately with apart of sugar. Finally beaten egg white and flour are folded alternatively to the egg yolk mixture slowly.
3. Filling the cake pan - Cake pan should not be filled more than 2/3 full. This is for the cake to rise.
4. Baking the cake – baking is always done in a preheated oven. Cake should be tested only before 5-10 minutes before the prescribed time. Testing is done by pressing lightly with the fingers in the centre of the cake. If it leaves finger mark, it is not done.
5. Cooling the cake – The cake should be cooled in a wire net.

6. Storage of cake – It should be wrapped in a foil or plastic paper and then stored in refrigerator. The refrigerated cake should be defrosted at room temperature for 1 – 2 hours.

   Best temperature for baking cake is 205 (400) and for 45 minutes to 1 hour.

3.3.2.2 Faults in cake making

1. Heavy layer on bottom
   - Too much liquid or egg
   - Too hot oven
2. Cracked top
   - Too much flour
   - Not enough milk.
3. Sticking to pans
   - Insufficient greasing of pan
   - Too short baking period.
4. Large holes or tunnels
   - Over heating
   - Too much baking powder
5. Hanging over sides of pan
   - Too much baking powder
   - Too small pan.

3.3.2.3 Cake Decoration

Cake decoration is partially painting and partially sculpture. The first and foremost step in decorating cake is choosing the right frosting. When choosing the frosting, its consistency should be suitable for its desired shape.

- Pastillage – It is powdered sugar dough made from water dissolved gelatine.
- Marzi pan – It is a cream coloured paste, made with almond paste, powdered sugar and corn syrup.
- Meringue – It is beaten egg white and sugar, having a stiff consistency.
- Chocolate – It is a mixture of cocoa powder, sugar and milk.
- Fondant – Cooked sugar syrup prepared into dough.

When decorating cake, there are many points to be remembered:

- The icing should be smooth and crumb free.
- Before decorating a cake, it should be held properly to the table. For this a few icing is applied beneath cake.
- Both the icing and cake should be chilled before decorating.
- Use only government approved colours.
- Use colours sparingly. Too much colour makes unattractive and give off flavour.

3.3.2.4 Pastry

There are many varieties of pastries. They can classify into 4 main groups.

1. Puff pastry – Pastry with 1000 layers. It is made by rolled in fat into the dough.
2. Pie pastry – Similar to puff pastry. Fat is rolled into the dough with fillings.
3. Cookie pastry – Similar to batter cake
4. Sweet pastry – It is a yeast raised dough.

3.3.2.5 Quick Breads

Quick breads have a cake like appearance. They are made with baking powder instead of yeast. Examples are muffins, ginger breads, etc.

3.3.2.6 Sweets

Continental sweets

1. Cold mousses – in a variety of fruit flavours.
2. Fritters
3. Various crèmes including charlottes either hot or cold.
4. Variety of coupes.
5. Custards
6. Omelettes with variety of fillings and flavourings e.g.: jam or apple
7. Pan cakes with a variety of fillings e.eg. Cherry or other fruits.
8. Pudding including bread and butter- various fruit puddings.
9. Soufflés
10. Fruit salad
11. Gateaux
12. Pies, flans and other pastries.

There is no particular accompaniment for sweets. Choice of whether to serve on a plate or bowl depends on the texture of the sweet dish e.g. fruit salad in a bowl and gateaux on a plate.

Indian sweets

1. Balushai
2. Gaujas
3. Chiroti
4. Phirnee
5. Carrot halwas
6. Shahi thukra
7. Gulaab jamoon
8. Rasgulla
9. Rasmalai
10. Coconut burfi
11. Palpayasam.

Practical Activities

Activity –I

Practical on sweet dishes like soufflé, mousse, puddings, kheer, etc.

Students prepare the dishes after studying the recipe and making proper indent. Prior to this demonstration or video presentation can be done

Activity- II

Practical session making baked dishes like bread, quick bread, biscuits, pastries, etc. are conducted.

Students prepare the dishes after studying the recipe and making proper indent. Prior to this demonstration or video presentation can be done.

Assessment Activities

Activity –I

Conduct of field visit to a nearby bakery production unit and make a list of dishes available and categorizes them like cakes, sweets, bread, pastry, etc.

Activity –II

Conduct an experiment to show the growth of yeast (fermentation process). The students record their observation in the activity log.

TE Questions

1. Identify the difference between Baking soda and Baking powder.
2. “Cake decoration is an art”. Substantiate.
3. What is the role of yeast in bread preparation?
4. Salt is an essential ingredient to facilitate the shape of the bread. Comment.
5. Name four continental sweets.
6. Distinguish between sponge dough method and straight dough method of bread.

Unit - 4

INTERNATIONAL AND REGIONAL CUISINES

Introduction

This unit deals with the cooking of the world's different countries. Each country has its own cuisine and each cuisine is an art in itself. Favourite cuisines of the world are Continental cooking or European cooking, Chinese, Italian, Thai, Indian, etc.

Learning Outcomes

After the completion of this unit the learner will be able to –

- Prepare popular International and Regional dishes
- Identify and record recipes of popular regional and international dishes

Concept

3.4.1. International cuisine

Most countries have a well known or famous dish associated with their cuisine.

Each country has its own culinary habits, tied to religion, climate and many other factors. The difference appears in ingredients, taste, and smell and even in the way the food is eaten.

3.4.1.1. Continental cuisine

Continental food on the whole could be considered as an international cuisine, particularly Britain, Australia, Newzealand and America. These places have a distinguished cuisine very similar in some way or the other – ingredients, spices used, flavouring and method of cooking. E.g. : Fish a la Kiev, Grilled meats.

3.4.1.2. Chinese cuisine

It is well-known for its rice, fish and vegetables. The few of the best known regions of Chinese cuisine are Szechwan, Hunan, Peking, Canton and Fukien. The traditional meal consists of several dishes with combination of flavors. E.g.: Peking duck, Wonton soup

3.4.1.3. Indian cuisine

India's north, east, west and south regions boast diverse and unique cooking styles. The common thread in all regional recipes is blend of spices and seasoning. These blends are known as masalas, the essence of Indian cuisine. E.g.: Butter chicken, Tandoori, etc.

3.4.1.4. Italian Cuisine

This is extremely varied. They use fresh and seasonal ingredients. Meals are centered on grains and vegetables. Except pasta they do not overcook any food. So it keeps flavour better.

E.g.: Lasagna, risotto

3.4.2 Regional cuisine of India

Indian cuisine comprises wide variety of regional cuisine. It is influenced by religion, culture, and soil and climate diversity of India. Central Asian and Mughal influence is clearly seen. Cuisine differs across India's diverse region as a result of variation in local culture, geographical location, economy and season.

Regional cuisine of India can be divided into four:

- North Indian Cuisine
- East Indian Cuisine
- West Indian Cuisine
- South Indian Cuisine

3.4.2.1. North Indian Cuisine

It is distinguished by the high usage of Diary products- Milk, butter, panir, ghee and yoghurt. Gravies are typically diary based; other common ingredients include chilly, saffron and nuts. Eg: Mutton roganjosh, Makhni murgh

3.4.2.2. East Indian Cuisine

It is famous for its dessert. Especially sweets such as rasagulla, chumchum, Sandesh, Rasabali and kheer. Many of the sweet dishes now popular in Northern India originated in Bengal and Orissa. Apart from sweets it offers delights of Posta, Use of thickening agents such as cashew, mustard seed or poppy seed paste. Milk based sweets are also very famous.

3.4.2.3. Western Indian Cuisine

Western India has four major food groups – Rajasthani , Gujarathi , Maharastrian and Goan. This cuisine is famous with the use of Rice, coconut and sea fish .Maharastrian cuisine has two sections. – The coastal region & hilly region. Gujarati cuisine is mainly vegetarian and have a blend of sweetness. Eg: Dokhla, Pav bhaji

3.4.2.4. South Indian Cuisine

It is distinguished by greater emphasis of rice as the staple grain, liberal use of coconut and coconut oil and curry leaves. Dosa, idily, vada, bhonda and bhaji are typical

south Indian snacks. Andhra, Chettinad, Hyderbadi , Mangalorean and Kerala cuisine have distinct taste and methods of cooking.

Practical Activities

Activity – I

Practical on various international and regional dishes are done .

Students prepare the dishes after studying the recipe and making proper indent. Prior to this demonstration or video presentation can be done.

Activity - II

A food festival based on regional and international dishes can be conducted in the school.

Assessment Activities

Activity – I

Seminar on the characteristics of international and regional dishes and recent developments.

Activity – II

Prepare the recipe album of different international and regional cuisines.

TE Questions

1. If you are selected as the section cook in the south Indian kitchen what are the basic dishes you will be able to prepare.

   Hint : write minimum ten dishes with any one recipe.

2. If you have an opportunity to attend an international food festival what are the specialties you normally observe.

3. Find the odd one out:-

   - Mughalai chicken
   - Chettinad chicken
   - Malabar chicken
   - Chicken fricassee

Unit - 5

TYPES OF SERVICE AND MENU PLANNING

Introduction

There are some basic principles in food and beverage service that a waiter must know. It is equally important to understand various types of food service methods followed worldwide. Menu planning is another area where restaurant staff has to show his skill in compiling the menu. In this chapter we deal with these skill areas.

Learning Outcomes

After the completion of this unit the learner will be able to –

- Acquire skill in different styles of food and beverage service
- Construct Menu Card

Concepts

3.5.1 Types of service

3.5.1.1 English service

It is also known as host service because the host plays an important role in this service. The waiter brings the food on platters and the host either portions the food into the guest plate directly or portions the food and allows the waiter to serve.

3.5.1.2 French service

It is very personalized service. Food is brought from the kitchen in dishes and are placed directly on the table. Guests helps themselves.

3.5.1.3 Silver service

The table is set for appetizers, soup, main courses and sweet dishes in sterling silver ware. The food is portioned into the silver platters at the kitchen itself. The plates are placed before the guest. The waiter presents the dish to the host for approval. He serves each guest with a service spoon and fork.

3.5.1.4 American service

It is preplated service. The portion is pre determined by the kitchen. This type of service is commonly used in coffee shop where service is required to be fast.

3.5.1.5 Cafeteria service

This type of service is found in industrial, college, hospital canteens and hotel cafeterias. For quick service menu is fixed and displayed on large boards. Food is served against coupons and self-service system is followed.

3.5.1.6 Counter service

Tall stools are placed along a counter, so that guest may eat the food at the counter itself. Menu may be displayed behind the counter for the guest to choose.

3.5.1.7 Grill room service

In this form of service, various meats are grilled in front of the guest. The meats may be displayed behind a glass partition . So that the guests can select his exact cut of meat.

3.5.1.8 Room service

It is the serving of food and beverage in guest rooms of hotels. Small orders are served in trays and the major meals are taken to the room on trolleys. The guest places his order with room service order taker through phone. Cashier prepares the bill and the waiter takes the food to the room along with the bill.

3.5.1.9 Buffet service

This is a sort of self service where food is displayed on tables in chef in dish. The guests help themselves. There are basically, sit-down buffets and standing buffets.

3.5.1.10 Gueridon service

This is a service where a dish comes partially prepared from kitchen to be completed in the restaurant by the waiter. The cooking is done on a gueridon trolley which is a mobile trolley with gas cylinder and burners.

3.5.1.11 Russian service

It is an elaborate silver service similar to French service where the food is portioned and carved by the waiter at the gueridon trolley.

3.5.2 Menu planning

Menu is a list of specific food offered in a food service establishment. Menu is compiled by a team of staff including executive chef, food & beverage manager and supervisors. In a successfully managed restaurant menu planning is the most crucial step. Menu planning influences what foods are purchased, how they are prepared, which dishes are popular, etc.

The factors to be considered while planning a menu are:

1. Type of the establishment- take ways, specialty
2. Availability of ingredients- seasonal & non seasonal
3. Food habits of the customer- vegetarian & non vegetarian

4. Types of customers- student , office goers
5. Environment conditions- summer, winter
6. Occasions- Christmas, birthdays
7. Personnel- skill and number of staff
8. Facilities- Equipments available & area of the kitchen and restaurant
9. Balancing- Flavours and nutritional
10. Variety and forms of food
11. Contrast in colour, taste and appearance
12. Eye appeal and presentation
13. Policy of the establishment.
14. Pricing- spending capacity of customers.

Practical Activities

Activity - I

Conduct practical on different types of service

Activity - II

Setting covers for different five course menus

Assessment activities

Activity - I

Role play of silver service where students are playing the role of waiters and guest.

Activity - II

Preparation of Menu card for the given specification of a restaurant

TE Questions

1. What are the services you can expect for a multi cuisine restaurant?
2. Match the following

• Preplated service	Russian service
• Personalized service	French service
• Host Service	English service
• Trolley service	American Service

3. Being a manager of a restaurant to improve the business of your hotel what are the different types of service you can implement?
4. What type of service would you prefer as a F&B manager to cater a crowd of 200 pax?

Unit - 6

ALCOHOLIC BEVERAGES AND THEIR SERVICE

Introduction

Alcoholic beverage is any potable liquid containing 1 % to 75 % of ethyl alcohol by volume. Fermentation is a process where sugar in fruit or grain is converted into alcohol by the action of yeast. Carbon dioxide is a by- product. Distillation means the fermented mash of fruits or grains is heated. Alcohol which evaporates at a lower temperature is condensed to a liquid by cooling. Pure alcohol has no color, taste or smell. In this unit we learn the different types of alcohol and its service.

Learning Outcomes

The learner :

- Classifies alcoholic beverages
- Distinguish between fermented and distilled drinks
- Acquire skill in serving wine

Concepts

3.6.1 Classification of Alcoholic Beverages

Fermented drinks

- Wines - Table wines (red , white, rose)
  Sparkling wines
  Aromatized wines
  Fortified wines

  E.g. (Chablis, Vermouth)
- Beer - Port
  Ale
  Stout
  Lager

  Distilled drinks (spirits)
- Whisky (scotch ,bourbon, Canadian ,Irish)
- Brandy
- Rum

- Vodka
- Gin
- Tequila
- Liqueur
- Cocktail

Wine is an alcoholic beverage obtained from the fermentation of the juice of freshly gathered grapes. Fermentation transforms the sugar in the grape juice (must) into ethyl alcohol and carbon dioxide.

Spirit is a potable alcoholic beverage obtained from the distillation of an alcohol containing liquid. In distillation, all the alcohol can be separated from the liquid. Anything that is fermented can form the base. Example- Brandy from grapes, whisky from grains, rum from mollasses, gin from grains flavoured with juniper berries, vodka from grains and potato and tequila from sap of mescal plant from Mexico

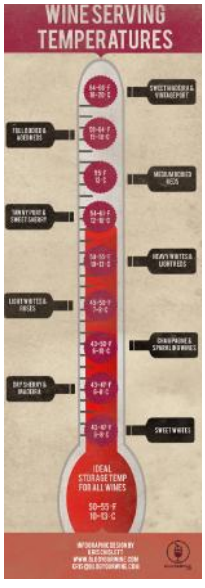
Beer is a potable alcoholic beverage fermented from cereals and malt flavoured with hops. The alcoholic content vary from 3 % to 6 %.

Liqueur is a sweetened and flavoured spirit. It is a digestive drink after meal.

Cocktail is a drink consisting of two or more ingredients stirred or shaken, as a short or long drink as required (with an alcoholic base)

Aperitif is an alcoholic beverage which may be served before a meal, as an appetizer.

3.6.2 Service of alcoholic beverages



The cocktail or dispense bar may be said to be the shop window of an establishment. It is a meeting point of customers and the first impression given here are of prime importance in gaining further sales. The presentation of the bar personnel together with a well stocked, organized and efficiently run bar are essential in order to give a good service. The bar personnel must have good technical skills, knowledge and social skills.

3.6.2.1 Service of Wine

Immediately the food order has been taken, the wine-list should be presented to the host. So that he may order wine for the party to go with the meal, they have ordered. The sommelier should be able to advice and suggest wine from the wine- list. This means that the wine- butler must have a good knowledge of the wines.

When the wine- butler writes out the order, it must be clear and legible. The top copy goes to the bar and the duplicate copy to the cashier. It should be noted that all red wines are served at room temperature. White wines and Rose wines chilled; Sparkling wines well chilled. The following basic procedures take place when a bottle of wine has to be served.

White Wine

1. Obtain the wine from the bar.
2. Take the bottle to the table in an ice bucket.
3. Present the bottle to the host showing the label.
4. Ensure that correct glasses are placed at the table.
5. See that a clean serviette is tied to the handle of the ice bucket.
6. Cut the foil, remove and wipe the top of the cork with the serviette.
7. Remove the cork in the accepted fashion. Smell the cork, in case the wine is corked. This happens when the wine has been affected through a faulty cork and it cannot then be served. Place the cork in the ice bucket.
8. If the wine concerned is a chateau bottled wine, then the cork would generally be placed on the side plate at the head of the host cover.
9. Wipe the inside neck of the bottle with the serviette.
10. Wipe the bottle dry.
11. Hold the bottle in such a fashion that the label may be seen. Use the waiter's cloth to catch any drips.
12. Give a taste to the host pouring from the right side. He/ she should acknowledge that wine is suitable, correct taste, bouquet and temperature.
13. Serve ladies first, then gentlemen and the host last. Always commencing from the host's right.
14. Fill each glass 2/3 full. Replace the remaining wine in the ice bucket and refill the glasses as and when necessary.
15. If a fresh bottle is required then fresh glasses should be placed on the table.
16. On finishing pouring a glass of wine, twist the neck of the bottle and raise it at the same time. This prevents any drips from falling on the table cloth.

Red Wine

The cork should be removed from the bottle of red wine as early as possible. So

that the wine may attain room temperature naturally. Under no circumstances, the wine should be placed on the hot plate to get it to the required temperature quickly. If the red wine to be opened is young the bottle may stand on an under plate on the table. If the wine is aged and is likely to have heavy sediments, then the wine should be decanted. It should be placed in a wine basket and first presented to the customer placing the bottle in a wine basket. Keep the bottle relatively flat and ensure that the sediments are not shaken. It should then be opened in the basket and poured in one operation to a clear decanter. A single point light should be used. Example: A candle should be used to view the wine as it is pouring out of the bottle. When sediments is seen reaching the neck of the bottle, the pouring should stop. The basic procedure for opening the wine is same as white wines.

Sparkling wine

The sparkling wine should be served well chilled. The pressure in Champagne is about 70 to 90 pounds per square inch. Therefore great care must be taken not to shake the bottle. Otherwise, the pressure built up and as soon as the wire cage is removed, the pressure shoots the cork out. After presenting, the bottle to the host, it will be replaced in the wine cooler. The neck of the bottle should be kept pointed to the ceiling during the opening process to avoid any accidents. It is advisable to hold a serviette over the cork with hand, when commencing to open the bottle. Unwire the wire cage and remove carefully holding the cork in the serviette. Twist the bottle slowly to release the cork. Serve into tulip shaped glass or champagne saucer from the right side of the guest.

For white wine or champagne place the bottle in an ice bucket to the right hand side of the host and cover the mouth of the bottle with a clean serviette. In the case of red wine, place it on the table with a serviette around or in a red wine basket. Refill the glasses as and when they become empty.

3.6.2.2 Service of beer

Beer is served in a 12 oz glass (beer goblet/ mug/ tankard) placed just below and to the right of the water glass. Beer should be served at a temperature of 13C to 15 C (55 F to 58 F). Barman should ensure that he serves the correct quantity of beer with a small head. A good condition beer is, if the head or froth clings to the inside of the glass. When pouring bottle beer, it should be poured down the inside of the glass which is held at a slight angle. It should be poured slowly. Use spotlessly clean glass. Dirty glass will cause beer to go flat. If there is any beer left in the bottle after pouring the first mug full, leave the bottle on the table on a coaster.

3.6.2.3 Service of Spirits

The waiter should collect the proper glass with required peg from the bar. He arranges the glass, ice bucket with ice/tongs and necessary accompaniments or mixture such as soda water, tonic water, cola or lemonade on a cloth covered around the tray or salver and bring the same to the table. He places the glass on a coaster just below and right of the water glass. He adds the required ice cubes. He then pours the mixtures in glass until the guest tells him to stop.

3.6.2.4 Service of Aperitifs

The term aperitifs cover a wide range of drinks which may be served before a meal. The wine butler or sommelier should present the wine list to the host for an aperitif's order, immediately before the butter is placed on the table. Rolls and Melba toasts are offered to the entire guest. This then gives the wine butler time to serve the aperitif's order and the guest, time to consume the drink before the first course is served.

3.6.2.5 Service of Liqueur

Liqueurs may be offered from the liqueur trolley. The waiter must ensure that any liqueur required will be on the table by the time coffee is served. Hence present the trolley immediately the sweet course is finished. Normally all liqueurs are served in liqueur glass. Often there is a mark on the glass to indicate proper quantity. If a person asks for a liqueur to be served as a "frappe", then it is served on crushed ice. Fill a large glass 2/3 full crushed ice and pour over the measured quantity of liqueur. Under no circumstances, cream and liqueur are mixed together. If a liqueur is requested with cream, then cream is slowly poured over the back of a teaspoon to settle on top of the selected liqueur.

3.6.3 Cocktails

Cocktail is a drink consisting of two or more ingredients stirred or shaken as a short or long drink as required. Points to be noted while making a cocktail or while mixing a drink:

1. If possible pour cocktail into chilled glass, chill the glass either in the refrigerator or by putting some ice in the glass.
2. When cutting lemon or orange peel never include the white of the rind.
3. Do not fill the shaker so full that there is no room for shaking.
4. Always handle glass by the stem or base.

5. Cherry or peel is always added to the cocktail after it has been shaken, stirred or mixed.
6. Always add the garnish after the cocktail has been made.
7. Never use the same ice twice. Ice should always be clear and clean.
8. Where a twist of orange or lemon peel is stated, the oil of the peel should be squeezed on the top of the cocktail and the peel is dropped in the drink unless otherwise requested.
9. Cocktail should be drunk as soon as possible after serving.
10. Whenever possible use fresh lemon or orange juice in a drink.

3.6.3.1 Service of Cocktail

Cocktail should always be served well chilled in an appropriate sized glass with the correct garnishes. Most cocktails are served in the traditional V shaped cocktail glass. But if to be consumed as a long drink, then a larger glass may be used. The key consideration here should be the total presentation of the cocktail visually by the guest.

3.6.3.2 Types of cocktails

Whisky based cocktails:

1. Rusty Nail
2. Manhattans (dry)
3. Manhattans (sweet)

Brandy based cocktails:

1. Brandy Alexander
2. Egg nogg

Gin based cocktails:

1. Martini (dry)
2. Martini (sweet)
3. Gimlet

Rum based cocktails:

1. Pina colada
2. Cuba libre

Vodka based cocktails:

1. Screw driver
2. Bloody Mary

Tequila based cocktail:

1. Tequila sunrise
2. Margarita

Beer based cocktail:

1. Red eye
2. Shanty

Practical Activities

Activity - I

Mock service of wine (white, Red, champagne) & Beer.

Mock Service of spirits, liqueurs and cocktails.

Assessment Activity

Activity - I

Conduct of seminar on –Bad effects of alcohol.

Activity - II

Prepare a sample Bar Menu card.

TE Questions

1. Differentiate between fermentation and distillation.
2. List the service procedures of white wines.
3. If you are working as a Sommelier in a star hotel, how will you plan the service procedure of a Red wine.
4. Distinguish the various types of spirits.

Unit - 7
FUNCTION CATERING

Introduction

Banquets or Function Catering are special functions organized for professional, social or state occasions. Banqueting is the service for these functions and is different from the usual service offered in restaurants. Normally such functions are organized when the number of people involved is 15 or more.

Banquet functions are organized by the Banquet Department with the help of other coordinating departments.

Learning Outcomes:

The learner :

- Identifies different types of Functions
- Identifies the job role of each employee in Banquet staff organizations
- Acquires skill in taking a Banquet booking using function Prospectus
- Sets an environment for outdoor catering

Concepts

3.7.1 Types of Functions

Professional

- Luncheons – Company, Clubs
- Conferences – National or International Seminars, Training Courses
- Meetings – Board meetings, Press, Professional Associates, Dealers.
- Exhibitions – Paintings, Sculpture, Fabrics, books, Sales etc.

Social

- Dinners – Old Boys Associations, Company Annual Days.
- Wedding Receptions
- Cocktail Parties
- Fashion Shows
- Recitals
- Coffee Parties
- Balls

State

- Dinners – Intra-Government and Inter Government parties for Heads of States
- National Days

3.7.2 Banquets – Staff organization

Banquet manager

He/she is overall in charge of administration, dealing with guests and co-coordinating all arrangements.

Banquet Supervisor

He/she coordinates the implementation of function arrangements and controls staff job allocations.

Banquets Waiters

Waiters and assistant waiters make the actual arrangements and do the service.

Casual Staff

The Banquet department normally has a skeleton staff and employs casual staff for large functions.

Banquet Sales Representatives

The Banquet Representatives prepare a sales kit of Brochures, Fact Sheets, lay outs etc and visit potential clients to solicit business.

Banquet Secretary

He/she handles all correspondences and filing and often takes booking on phones.

3.7.3 Taking a Banquet Booking

A booking is taken on a Special Information Sheet called a Function Sheet or Function Prospectus. The type of information recorded is:

- Name of booking party
- Name of the person to whom the Bill is to be send
- Nature and type of function
- Date of function
- Time of function
- Number of people expected and number guaranteed
- Menu for the function

- Type of Table Layout and service
- Special arrangements such as – live Band, Ramps, Flower arrangements, Ice Sculptures, Micro Phones, etc.
- Seating plans and Name of Guests for State Banquets.
- Price to be charged per person.
- Price for hall and special arrangements.

FUNCTION PROSPECTUS FORM			
F.P. no	Function contract	Floating date	
Day	From date		From Time
Function	To date		To Time
Venue			
Hosted by		Booked by	
addres		Adress	
Contact no.		Contact no.	
Guaranteed number	Receipt no.	rate/person	Hall charges
Advance	Receipt no.	Date	Payment mode
Menu		Style of service: buffet	
		amenities required	charges
		flower arrangement	
		accomodation	
		changing room	
		place cards	
		special lighting	
		toast master	
dietary needs		list of toasts	
		LCD	
		computers	
		screen	
		collar mike	
		podium	
		tostrum	
wines		lectern	
		photographer	
		videographer	
		secretarial services	
		sogn posting	
		press release	
		security facilities	
		internet facilities	
cigars and cigarettes		special lighting	
		copier	
		printer	
		stationary	
food pick up at		car parking	
service time		music and dance floor	
		cabaret	
copy to		other services	
FBM			
FOM			
EHK		total amount	
chief			
controller			
engineer, security			
signature of banquet manager		signature of the host	

3.7.4 Banquet Table layouts

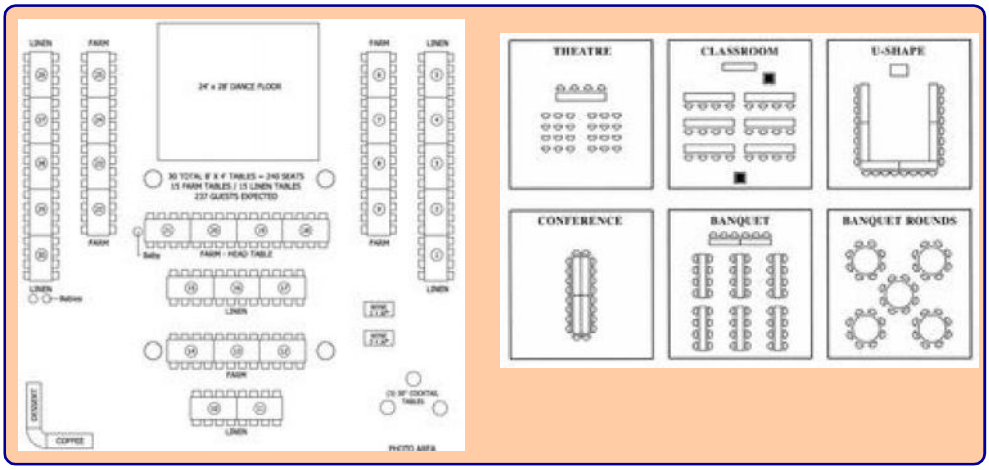
The type of layout is dependent upon

- Number of covers required.
- Size of hall allocated
- The desire of the guest
- The type of service to be provided .

Some examples of layout :-

Professional Functions –'U' shape, 'T' shape, Square shape, 'V' shape etc.

State Functions – Comb shape, or any other types of desired table lay outs.



3.7.5 Outdoor Catering (ODC) or Off-Premises Catering

Outdoor catering means providing food and beverages away from the home base and suppliers. This has been developed through need to provide services at special events like wedding receptions, inaugurations, birthday parties, etc. Before organizing an ODC, it must be planned to the last detail and an initial survey should be exact. Any item forgotten or not packed on the transport may result in loss of repeated business at a later date. Following points should be included in the initial survey.

1. Type of function
2. Date
3. Site and distance from the department
4. Local transport
5. Staff recruitment

6. Lay out of site
7. Number of people expected to attend
8. Availability of water, gas, electricity, drainage and refrigeration
9. Time allowance for setting up catering units
10. Changing rooms and toilets
11. First aid
12. Cost of over heads on a particular site
13. Type of service
14. Washing up facilities
15. Containers supplied for litter and disposable items.

From the basic list shown above, the organization can make out their needs before hand and rectify some of the problems that may arise at the outset or during an operation.

The person in charge needs qualities like quick thinking, able to command, adaptable to varying situations and circumstances and above all need to have respect of the staff working under him. The majority of staff employed at outdoor catering function is taken on a casual basis.

Assessment Activities

Activity - I

Students are directed to conduct survey of banquet facility in star hotels with the aid of marketing tools such as

- Questionnaires
- Sampling tools

Activity –II

Conduct a brain storming session to prepare Function Prospects and to draw table layout

TE Questions

1. If you are working as a Banquet secretary, what the information do you collect in filing banquet prospectus?
2. Draw a Banquet Organization chart.
3. Draw a Banquet table layout for a Board Meeting of 20 persons.
4. Mention the information to be collected before conducting an Outdoor Catering Functions?

SAMPLE RECIPES OF UNIT 1

Fish a l'anglaise – Crumb fried fish

Ingredients-

Pomfret	1no.
Egg white	1 no.
Refined flour	1 gms
Bread crumbs	2 gms
Lemon juice	5 ml
Salt	5gms
Pepper	a pinch
Mustard powder	5 gms

Method of preparation

- Cut out fillets of the fish.
- Marinate the fish in lemon juice , mix with salt , pepper and mustard powder [30 mts].
- Take the fish and dust it with refined flour.
- Coat it with egg white and top layer of bread crumbs.
- Deep fry in a kadai.
- Serve hot with Tartar sauce.

Chilly Fish Manchurian

Ingredients

Fish fillet	25 gms
Corn flour	$1^{1/2}$ Tbsp
Plain Flour	$1^{1/2}$ Tbsp
Garlic minced	3 cloves
Spring onion	2 Tbsp
Soya sauce	1 tsp
Vinegar	1 tsp
Red chilly sauce	2 tsp
Sugar	½ tsp

For marinating

Soya sauce	¾ tsp
Pepper powder	1/8 tsp
Ginger garlic paste	1½ tsp
Salt	to taste

Method of preparation

- Wash the fish and cut to cube sized pieces.
- Marinate with the ingredients for 30 mts.
- Heat a pan with oil and shallow fry.
- Add corn flour, plain flour and salt. Stir well.
- Add the sauces and stir well.
- When it bubbles, add fish.
- Garnish with chopped spring onion.

Goan Fish Curry

Ingredients

Fish	2 medium sized fishes
Salt	a pinch

For the masala

Cumin seeds	½ tsp
Turmeric powder	½ tsp
Garlic flakes	4 cloves
Kashmiri red chilly	8 nos.
Coriander seeds	1 Tbsp
Grated coconut	1 no.
Tamarind	1 inch
Water	½ cup
Onion sliced	1 no.
Green chilly sliced	2 no.

Method of preparation

- Marinate the fish in salt and lime juice for 10 minutes.
- Grind all masala together.
- Add the onion and green chilly to the masala and place the pan over the flame.
- Cook the masala for 10 mts.
- Add the marinated fish and cook.
- Serve hot with rice.

Mughlai Fish Curry

Ingredients

Fish	1no.
Poppy seeds	¾ cup
Onion	2 no.
Tomato	1no.
Green chilly	2no.
Ginger garlic paste	2 tsp
Garam masala powder	¾ tsp
Chilly powder	1tsp
Turmeric powder	½ tsp
Curd	½ cup
Cumin seeds	¾ tsp
Cashew nuts	5 nos.
Coriander leaves	a handful
Cooking oil	as required
Salt	as required

Method of preparation

- Marinate the cleaned and cut fish with salt and turmeric powder for about 10 mts.
- Grind the mixture of poppy seeds, cashews and curd.
- Fry the marinated fish in oil.

- Heat the oil in another pan.
- Splutter mustard seeds; add finely chopped onions and sauté.
- Add ginger garlic paste, cumin powder and fry for 2 mts.
- Add the ground mixture of poppy seeds, curd and cashews.
- Add sliced tomato and green chillies, heat it for some time.
- Add water followed by coriander powder, chilli powder , turmeric powder & salt.
- Add the fried fish and cook for 10 mts.
- Add required amount of water and boil.
- Garnish with chopped coriander leaves and serve.

Mutton Rogan Josh

Ingredients

Mutton cut into 1½ inch pieces	800 grams
Oil	4 tablespoons
Asafoetida	11/4 teaspoon
Cinnamon	2 one-inch
Cloves	6-8
Ratanjot	4-6 inch pieces
Black peppercorns	5-6
Black cardamoms	4
Kashmiri red chilli powder	1 tablespoon
Fennel seed (saunf) powder	2 teaspoons
Dry ginger powder (soonth)	1 tablespoon
Coriander powder	1 tablespoon
Salt to taste	
Yogurt,whisked	1 cup

Method of preparation

1. Heat oil in a thick-bottomed pan. Add asafoetida, cinnamon, cloves, black peppercorns and black cardamoms. Sauté till fragrant.
2. Add lamb pieces and cook on medium heat, stirring constantly till lamb pieces turn a nice reddish brown colour. This may take twelve to fifteen minutes.
3. Sprinkle a little water and continue cooking for twelve to fifteen minutes more on low heat. Make sure to stir constantly and scrape all the sediments from the

bottom of the pan. Add Kashmiri red chilly powder, fennel powder, dry ginger powder, coriander powder and salt.

4. Add yogurt and two cups of water. Cook, covered, till lamb is tender, stirring occasionally. Serve hot.

Beef Stroganoff

Ingredients

Butter	5 Tbsp
Sirloin or tenderloin	cut thin into 1-inch wide by 2 1/2-inch strips
Shallots / onions	1/3 cup chopped
Cremini mushrooms	sliced ½ kg
Salt	to taste
Pepper	to taste
Nutmeg	1/8 teaspoon
Dry tarragon	1/2 teaspoon
Sour cream	1 cup

Method of preparation

1. Brown the strips of beef in butter: Melt 3 tbsp of butter in a large skillet on medium heat. Increase the heat to high/med-high and add the strips of beef. You want to cook the beef quickly, browning on each side, so the temp needs to be high enough to brown the beef, but not so high as to burn the butter. You may need to work in batches.
2. While cooking the beef, sprinkle generously with salt and pepper. When both sides are browned, remove the beef to a bowl and set aside.
3. Sauté the shallots: In the same pan, reduce the heat to medium and add the shallots. Cook the shallots for a minute or two, allowing them to soak up any meat drippings. Remove the shallots to the same bowl as the meat and set aside.
4. Sauté the mushrooms: In the same pan, melt another 2 Tbsp of butter. Increase heat to medium high and add the mushrooms. Cook, stirring occasionally for about 4 minutes. While cooking, sprinkle the nutmeg and the tarragon on the mushrooms.

5. Add sour cream, beef, and shallots: Reduce the heat to low and add the sour cream to the mushrooms. You may want to add a tablespoon or two of water or stock to thin the sauce (or not).
6. Mix in the sour cream thoroughly. Do not let it come to a simmer or boil or the sour cream may curdle. Stir in the beef and shallots.
7. Add salt and pepper to taste. Note that you will likely need more salt than you expect. Taste, and if it needs salt, add 1/2 teaspoon or more.
8. Serve immediately over egg noodles, fettuccine, mashed potatoes, or rice. (Potatoes, rice, and gluten-free pasta are gluten-free options.)

Pork Vindaloo

Ingredients

Pork shoulder, trimmed and cut into bite-sized cubes	1kg
Vegetable oil	3 tbsp
Onions, finely chopped	2 large
Mild chilly powder	1 tbsp
Chicken stock	250ml
Coriander leaves	handful

For the marinate

Green cardamom pods	6 no.
Black peppercorns	½ tsp
Red wine vinegar	125ml
Finely grated ginger	1 heaped tbsp
Garlic cloves, finely grated	4 large
Golden caster sugar	1 tsp
Dried chillies	8 small
Ground cloves	a pinch
Ground coriander	2 tsp
Ground cumin	1 tsp
Turmeric	¼ tsp

Method of preparation -

1. To make the marinade, remove the seeds from the cardamom pods and grind with the peppercorns using a pestle and mortar. Mix with the rest of the marinade ingredients, and then pour over the pork. Mix everything together well, then cover and leave to marinate overnight or for at least 8 hrs.
2. Heat the oil in a large pan over a medium heat and cook the onions for about 5 mts until starting to soften. Add the chilly powder to the pan and cook for 1 min. Using a slotted spoon, remove the pork from the marinade and add to the pan. Turn up the heat a little and cook for about 5 mts, stirring all the time. Add the leftover marinade to the pan with the stock. Bring to the boil, then turn down to a simmer and cook for 40-45 mts until the pork is soft and the sauce thickened – it should be thick rather than saucy. Pick out the dried chilies, if you like, season, scatter with the coriander leaves, and serve with steamed rice and naan.

Butter Chicken

Ingredients

Boneless chicken cut into 1½ inch pieces	400 grams
Lemon juice	1 tablespoon
Kashmiri red chilly powder	1 teaspoon
Salt	to taste
Butter	2 tablespoons

For marinate

Yogurt	1/2 cup
Ginger paste	2 teaspoons
Garlic paste	2 teaspoons
Kashmiri red chilly powder	1/2 teaspoon
Garam masala powder	1/2 teaspoon
Salt	to taste
Mustard oil	2 teaspoons

For Makhni Gravy-

Butter	2 tablespoons
Green cardamom	2 no.
Clove	2 no.

Black peppercorns	2-3 no.
Cinnamon	1 inch piece
Ginger paste	1 teaspoon
Garlic paste	1 teaspoon
Tomato puree	1/2 cup
Red chilly powder	1/2 teaspoon
Salt	to taste
Sugar	2 tablespoons
Kasoori methi	1/2 teaspoon
Fresh cream	1/2 cup

Method of preparation

1. Apply a mixture of red chilly powder, lemon juice and salt to the chicken pieces and set aside for half an hour in the refrigerator.
2. Hang the yogurt in a muslin cloth for fifteen to twenty minutes to remove extra water. Add the ginger and garlic pastes, red chilly and garam masala powders, salt and mustard oil.
3. Apply this marinade to the chicken pieces and place them in the refrigerator for three to four hours.
4. Preheat the oven to 200°C/400°F/Gas Mark 6. String the chicken pieces onto skewers and cook in the preheated oven or a moderately hot tandoor for ten to twelve minutes or until almost done.
5. Baste with the butter and cook for another two minutes. Remove and set aside.
6. To make the makhni gravy, heat the butter in a non-stick pan. Add the green cardamoms, cloves, peppercorns and cinnamon.
7. Sauté for two minutes, add the ginger and garlic pastes and sauté for two minutes. Add the tomato puree, red chilly powder, salt and half cup of water.
8. Bring the mixture to a boil. Reduce the heat and simmer for ten minutes. Add the sugar or honey and powdered kasoori methi.
9. Add the cooked tandoori chicken pieces. Simmer for five minutes and add the fresh cream. Serve hot with naan or parantha.

Students may take part on the Job training on different function catering outlets.

SAMPLE RECIPES OF UNIT 2

Basic Cheese Pizza

Ingredients

dry yeast	$^{1}D_{4}$ ounce
water, lukewarm	1cup
sugar	1 teaspoon
bread flour	3cups
salt	$^{1}D_{2}$ teaspoon
olive oil	1tablespoon
tomato puree	$^{1}D_{2}$ cup
tomato paste	2tablespoons
garlic clove	1
fresh basil	1tablespoon
mozzerella cheese	4ounces

Methods of preparation

1. In a glass or plastic bowl, combine yeast, water, and sugar (the water can just be water from the tap, make sure it's below 100°F).
2. Stir to dissolve the yeast and let the yeast "bloom" for 15 minutes.
3. Stir in 1 cup flour, add salt, and then stir in another cup of flour (the remaining cup of flour will be your "bench" flour and added flour).
4. Dump mixture onto kneading board and work in last cup of flour, kneading until dough is soft and elastic, but not sticky. Form dough into a ball.
5. In another bowl, pour in the 1 tbsp olive oil and spread around.
6. Coat ball of dough with oil and cover bowl with a damp towel and let dough rise for 40 minutes.
7. Punch down dough and knead on board about 2 minutes. Dough is now ready to spread in the pan.
8. To avoid sticking of crust, lightly spray pizza pan with olive oil or vegetable oil spray and then work dough to pan (or use free form pan) - this dough is enough for 1 14-in pizza with a thin bottom crust and enough dough around the edge to munch.

Sauce

1. Combine pureed tomatoes, tomato paste, minced garlic, and basil.
2. Spread onto prepared pizza dough.
3. Top with sliced mozzarella cheese and bake at 500°F for 11-13 minutes.

Spagetti Marinara

Ingredients

Olive oil	1/4 cup [60ml]
Garlic cloves, finely chopped	4 no.
Anchovy fillets	6 no.
Chopped tomatoes	800g
Dry white wine	200ml
Spaghetti	500g
Mussels, scrubbed, debearded	300g
Good-quality marinara	800g
Peeled green prawns	200g
Torn flat-leaf parsley leaves	to serve

Methods of preparation

1. Heat 2 tablespoons oil in a large frypan over medium-low heat and add garlic and anchovies. Cook, stirring, for 1-2 minutes until anchovies have melted. Add tomatoes and wine and bring to a simmer, then reduce the heat to low and cook for 20 minutes until slightly reduced.

1. Meanwhile, cook the pasta in a large pan of boiling salted water according to packet instructions. Drain, then return to the pan and toss in a little olive oil.

2. Add the mussels to the pan of sauce, cover and cook for 1 minute, shaking the pan occasionally. Add the remaining seafood and cook for a further 2-3 minutes until the marinara mix and prawns are cooked through and the mussels have opened (discard any that haven't opened after this time). Season to taste with sea salt and freshly ground black pepper. Add the drained pasta, toss to combine, then divide among bowls and serve garnished with parsley leaves.

Basic Club Sandwich

Ingredients

Whole wheat bread, toasted	6 slices
mint and onion chutney	2 tbsp

For the Filling

lettuce leaves	2 no.
slices of unpeeled cucumber	8 no.
slices of tomatoes	8 no.
chilas	2 no.

For the Chilas

whole wheat flour (gehun ka atta)	2 tbsp
besan (bengal gram flour)	1 1/2 tbsp
jowar (white millet) flour	1 1/2 tbsp
chopped onions	3 tbsp
chopped tomatoes	1/4 cup
chopped coriander (dhania)	2 tbsp
green chilli , finely chopped	1 no.
salt	to taste
oil for cooking	1 tsp

Method of preparation

For the chilas

1. Mix together all the ingredients in a bowl and add enough water to make a smooth batter and divide into 2 equal portions.
2. Heat a non-stick pan and grease it lightly with oil.
3. Spread one portion of the batter on it to form a thick round chila of 100 mm (4") diameter.
4. Cook on both sides till golden brown, using a little oil.
5. Repeat with the remaining batter to make 1 more chila. Keep aside.

How to proceed?

1. Apply little chutney on all the toasted bread slices and keep aside.
2. Place a toasted bread slice on a flat dry surface, put one chila on it. Cover with another toasted bread slice with the chutney side facing up.
3. Place a lettuce leaf, 4 slices cucumber and 4 slices of tomatoes on it and cover with the third toasted bread slice.
4. Repeat with the remaining ingredients to make 1 more sandwich.
5. Cut each sandwich into 4 equal portions and serve immediately.

SAMPLE RECIPES OF UNIT 3

Plain Sponge Cake

Ingredients

Self-raising flour	4oz/100g
Sugar	4oz/100g
Butter	4oz/100g
Eggs	2 no.
Or	
Plain flour	4oz/100g
Baking powder	1 teaspoon
Sugar	4oz/100g
Butter	4oz/100g
Eggs	2 no.

Method of Preparation

1. Whisk the butter and sugar.
2. Add the eggs then flour.
3. Mix to get a creamy batter.
4. Put it in a cake tin with baking paper.
5. Put it in the oven for 18-20 minutes on 200'c or more.

Basic Chocolate Cake

Ingredients

Butter, softened	$^{2/3}$ cup
Sugar	1 $^{2/3}$ cups
Eggs	3 no.
All-purpose flour	2 cups
Baking cocoa	$^{2/3}$ cup
Baking soda	1 $^{1/4}$ Teaspoons
Salt	1 teaspoon
Milk	1 $^{1/3}$ cups

Method of preparation

1. In a bowl, cream butter and sugar until fluffy. Add eggs, one at a time, beating well after each addition. Combine flour, cocoa, baking soda and salt; add to creamed mixture alternately with milk, beating until smooth after each addition. Pour batter into a greased and floured 13-in. x 9-in. pan.
2. Bake at 350° for 35-40 minutes or until cake tests done. Cool on a wire rack. When cake is cool, dust with confectioners, sugar or frost with your favourite frosting.

Basic Biscuit

Ingredients

All-purpose flour	2 cups
Baking powder	1 tablespoon
Salt	1/2 teaspoon
Shortening	1/2 cup
Milk	3/4 cup

Add all ingredients to list

Method of preparation

1. Preheat oven to 450 degrees F (230 degrees C).
2. In a large mixing bowl sift together flour, baking powder and salt. Cut in shortening with fork or pastry blender until mixture resembles coarse crumbs.
3. Pour milk into flour mixture while stirring with a fork. Mix in milk until dough is soft, moist and pulls away from the side of the bowl.
4. Turn dough out onto a lightly floured surface and toss with flour until no longer sticky. Roll dough out into a 1/2 inch thick sheet and cut with a floured biscuit or cookie cutter. Press together unused dough and repeat rolling and cutting procedure.
5. Place biscuits on ungreased baking sheets and bake in preheated oven until golden brown, about 10 minutes

Caramel Custard

Ingredients

milk	2 $^{1/4}$ cups
sugar	12 tsp

large eggs	3 no.
vanilla essence	1 tsp

Method of preparation

1. Mix the milk with 9 teaspoons of sugar and boil for 5 minutes. Cool.
2. Beat the eggs very well and add to the cold milk.
3. Add the vanilla essence. Mix well.
4. Mix 3 teaspoons of sugar and 1 teaspoon of water in a vessel. Melt on a slow flame. When the liquid becomes dark in colour, spread it evenly over the base of a vessel.
5. Wait for a few minutes. The sugar will become dry.
6. Pour the eggs - milk mixture over it.
7. Cover the vessel with a lid or tie a piece of brown paper on top.
8. Put the vessel in a pressure cooker and cook. Alternatively, steam the pudding but this requires about 1 hour.
9. Cool the pudding and chill in the freezer compartment of a refrigerator.
10. When you want to serve, turn it on a plate. It drops easily.
11. Serve cold.

Gulab Jamoon

Ingredients

Milk powder	1 cup
All-purpose flour / maida	¼ cup
Unsalted butter or ghee	1 ½ tbsp
Baking soda	1 pinch
Milk	60 ml
Ghee / oil for deep frying	
For sugar syrup -	
Sugar	1 ¼ cups
Water	1 cup
Cardamom powder	¼ tsp
Few drops of rose essence	(optional)
Few strands of saffron	(optional)

Method of preparation

1. Sieve milk powder, flour and baking powder twice for uniform mixing.
2. Transfer the mix to a bowl, add butter or ghee and mix well. Add few tbsps. of milk at one time and knead. Continue adding milk little by little to make a uniform, smooth and firm dough. Use only as needed.
3. Add sugar and water in a wide utensil and bring it a boil.
4. Add cardamom powder and then reduce the heat to low and continue to boil until it thickens slightly. It should not reach a string consistency else the Jamuns will not absorb the syrup. Set aside.
5. Divide the dough into 12 to 13 equal parts. Roll them to smooth balls. They should be free from any cracks and lines else they do not look good and sometimes even they disintegrate while frying. If you feel they have cracks and cannot smoothen them, just sprinkle very little milk and roll the dough once more.
6. Heat oil or ghee in a deep fry pan. Reduce the flame to medium; fry these balls few at a time evenly till they turn golden. To get them evenly browned, avoid crowding the balls in the fry pan. I usually take a long stain less steel chop stick place it in the center of the fry pan and stir it around the pan without touching the jamun. I do this few times for each batch. This way I feel they are beautifully fried evenly.
7. Drop these fried balls in the sugar syrup, let them soak for at least 3 to 6 hrs. Garnish gulab jamun with chopped pistachios if desired.

Extentended Activities

List of Continental dishes

1. Deviled eggs
2. Chicken ceaser salad
3. Yorkshire Lamb patties
4. Batter fried fish
5. Paneer steak
6. Sausage and potato casserole
7. Grilled chicken breast with lemon grass and chilly
8. Paprika roast chicken
9. Sticky toffee pudding
10. Cream of asparagus

Chinese Dishes

1. Vegetable Manchow soup
2. Chicken Manchurian
3. Chilly fish
4. Oriental dragon fruit salad
5. Duck spring rolls
6. Stir fried chilly chicken
7. Chicken chopsuey
8. Vegetable Chowmein
9. Chicken fried Noodles
10. Egg fried rice

Italian dishes

1. Spaghetti in pesto sauce
2. Lasagna
3. Pasta with mint sauce
4. Chicken Italiano
5. Spaghetti bolognaise
6. Macaroni cheese surprise
7. Cannelloni
8. Pizza
9. Ravioli
10. Meat balls

Indian regional dishes

1. Kashmiri mutton kofta
2. Fish Amritsari
3. Chicken chettinad
4. Paneer butter masala
5. Neelgiri khorma
6. Hydrabadi biryani
7. Sheek kebab
8. Vegetable Jalfresi
9. Palak mutton
10. Rasgulla

LIST OF PRACTICALS

- Fish Cookery – Cuts, selection and preparations of Fish dish
- Meat Cookery – Cuts,selection,preparations of Beef,Mutton,Pork and Poultry dishes
- Preparation of Paneer
- Preparation of Cheese based dishes
- Preparation of Pastas
- Making different types of sandwiches
- Bread making
- Cake making and its decorations
- Preparing different types of Sweet dishes
- Preparing popular Chinese, Continental and Indian dishes [South & North Indian]
- Compile different types of Menu
- Mock services [Different types of service]
- Mock Wine service and Techniques
- Filling a function prospects

OVERVIEW OF MODULE - 4
COMPUTER APPLICATION IN FOOD AND RESTAURANT MANAGEMENT

The purpose of introducing this module is to determine the extent to which computers are being utilized as a tool in catering and restaurant management concepts in an effective way. Concepts most often taught with computer-assistance were budgeting, accounting, menu and recipe analysis, and inventory control. Hospitality educators reported a need for increased utilization of the computer in the curriculum of catering and restaurant management concepts and provide additional training in the use of the computer to the learners.

Unit - 1
INFORMATION TECHNOLOGY

Introduction

During the last several decades, the computer has become undoubtedly the most important invention of humankind. When and where did this most important invention actually happen? Who are the pioneers of the world of computers? This chapter deals with definitions of basic terms in information technology, briefly explain the history and generations of computers, and classification of computers.

Learning Outcomes

The learner :

- Familiarises with the basic terms and characteristics of a computer.
- Identifies the components of computers.
- Describes memory organisation structure of a computer
- Identifies various storage devices.
- Describes the roles of IT in various areas of our lives

Concepts

4.1.1 Information Technology

4.1.1.1. Computer

The word “computer” comes from “compute”, which means “to calculate”. Hence, some people considered computer as a calculating device like a calculator that can perform mathematical operations at high speed. Now computer is a device of data processing as it operates on data. So now we can define Computer as an electronic,

programmable data processing machine. It can store, process and retrieve data as and when desired.

4.1.1.2. Data Processing

It is the process of manipulating (converting) data into more useful and arranged form. That arranged form of data is called information. Data processing consists of four sub activities

1. Receive data as input
2. Manipulate data as per the instructions
3. Provide the result (information) as output
4. Keep the data and the information for future in storage locations

4.1.1.3. The data represented inside a computer

The storage capacity of a memory unit is expressed by its capability to store these bits.1 bit 0 or 1 nibble any combination of 4 bits. 24 =16 combinations are possible, they are 0000, 0001, 0010, 0011, 0100, 0101, 0110, 0111, 1000, 1001, 1010, 1011, 1100, 1101, 1110 and 1111 1 byte.

1 Kilo Byte (KB) 1024 bytes.

1 Mega Byte (MB) 1024 KB

1 Giga Byte (GB) 1024 MB

1 Terra Byte (TB) 1024 GB

4.1.1.4. Characteristics of computers

Computers carry out all the data processing activities with greater accuracy and speed than that of manual data processing. Hence now a days all the data processing activities are carried out by computers. This is due to the following characteristics of the computers.

- Speed
- Accuracy (precision)
- Versatility
- Diligence
- Storage capacity (power of remembering
- No intelligence
- No feeling/no emotion

4.1.1.5. History of computers

Charles Babbage, mathematics Professor at Cambridge University is considered to be the father of digital computers. During his period, mathematical and statistical tables were prepared manually and it took a lot of man power. Babbage designed a "Difference Engine" in the year 1822 which could produce reliable mathematical and statistical tables.

In 1842, Babbage came out with his new idea of "Analytical Engine", that was intended to be completely automatic. It was designed to perform basic arithmetic functions for simple mathematical problems. Unfortunately, he was unable to implement its working model.

Mark 1 Computer – also known as Automatic sequence controlled Calculator, the first fully automatic calculating machine, developed in IBM (International Business Machines) Corporation in the year1937. It was very complex in design and huge in size but reliable. It used over 3000 electrical switches and was approximately 50 feet long and 8 feet height. It was basically an Electro-mechanical device. Both mechanical and electronic components were used in its design.

The Atanasoff Berry computer (ABC) - This electronic computer was developed by Dr. JohnAttanasoff and Glifford Berry to solve certain mathematical equations. It used 45 vacuum tubes for internal logic circuit and capacitors for storage.

4.1.1.6. Evolution of computers

In the beginning, when the computing task as counting or adding, people used their fingers as assisting tool. Then along with the growth of civilization, the mathematical problems became complicated and some modified devices were introduced. The Abacus was one of the earliest devices of this kind. From abacus, the calculating devices were developed through mechanical, electro mechanical, electrical and electronic era to highly sophisticated supercomputers.

4.1.1.7. Classification of computers

Computers can be classified by their size, speed, storage capacity and application domain. They are:

1. Micro computers - Micro computers are the smallest and low cost general purpose processing systems.

    a) Desktop computers

    The desktop computers, also known as PCs, are the most common type of micro computers intended for personal and office use of an individual.

Typically it consists of a system unit (CPU cabinet), a display monitor, keyboard, mouse, internal hard disk storage, communication and peripheral devices like modem, printer, speakers, etc.

b) Laptops

A laptop is a portable micro computer that a user can carry around. A rechargeable battery backup is part of the system. So no need of external power supply for its operation when battery backup is available

c) Palm tops

The Palm top Computers are essentially small portable computers and its weight and size are suitable to handle it on our palm. They are also known as hand held Computers. Examples are Personal Digital Assistant (PDA) and Tablets. Hand held computers usually have no disk drive; rather they use memory cards to store program and data. Touch screen and stylus(a stick to select screen icons) are used instead of keyboard and mouse.

2. Mini computers - A mini computer is a medium sized computer that is more powerful and costly than a micro computer.
3. Main frame computers – Computers with large storage capacities and very high speed of processing are known as mainframe computers.
4. Super computers - These have extremely large storage capacities and computing speed which are at least 10 times faster than other types of computers.

4.1.1.8. Hardwared programming and stored programme concept

The programming method of the early automatic calculating machines was that, their programmes were designed through physical switching circuits; they can produce appropriate signals to trigger mathematical operations. So this method is called “hardwired programming”. At that time there were no programming language instructions, and no reliable storage elements to store such instructions. The main drawback of such method is that it was difficult to reprogram a computer for another data processing operation.

In 1940s, Dr. John Von Neumann introduced the “Stored program” concept, the basic idea behind is that a sequence of software instructions and data can be stored in memory of computer. They automatically direct the flow of operations. Here the reprogramming of a computer is very simple, by deleting existing program from memory and load a new instruction series to the memory expensive.

4.1.2. Computer organization

4.1.2.1. Computer as a data processing machine

A computer can process any type of data. It can solve highly complicated problems quickly and accurately. Computer performs basically five major operations in order to process data. They are, accepts data and instructions, through input devices stores data and instructions process data as instructed by the user controls all operations inside a computer gives results through output devices

4.1.2.2. Basic computer operations

- Inputting
- Storing
- Processing
- Outputting
- Controlling

4.1.2.3. Functional units

Computer uses its functional units to carry out the basic operations that we have discussed The major functional units are:

- Input unit
- Output unit
- Memory unit
- Central Processing Unit (CPU)
- Arithmetic and Logic Unit(ALU)
- Control Unit (CU)

4.1.2.4. System components

A computer system component is basically the hardware that enables the computer to perform its function. Basic components are:

- Motherboard
- Chipset
- Buses
- Expansion slots

4.1.2.5. Input/output ports (i/o ports)

All peripheral devices such as keyboard, mouse, printer, pen drive, etc. are connected to the motherboard through a socket which is known as port. Various ports in a motherboard are serial port, parallel port, USB port, PS/2, etc.

4.1.2.6. Microprocessor

Microprocessor is the most important component in a computer. It is an electronic chip that performs all the arithmetic and logic operations.

4.1.3 Memory

4.1.3.1. Memory organization

To optimize performance and cost of this unit, we have an efficient organization of these storage devices called memory organization. The memory capacity is usually referred with the number of bytes that a computer can store.

4.1.3.2. Types of memory

The storage components of a computer system can be placed in four groups. They are :

- CPU Registers
- Cache memory
- Primary memory
- Secondary memory

The primary memory is basically divided into two categories - RAM and ROM

RAM (Random Access Memory) -The memory element is called Random Access Memory because it is possible to randomly access any location of this memory directly. The time taken to access any memory location is same regardless of its position. It is also referred to as Read/Write memory because the information can be read from a RAM chip and can also be written into it. The RAM is volatile, that is when the power supply is switched off, and the information stored is lost.

ROM (Read Only Memory)

It is a semiconductor memory chip used to store data or instruction, which is permanent in nature (Nonvolatile). As the name implies the information stored can only be read and it is not possible to write fresh information into it. ROMs are much cheaper as compared to RAMs. Normally the basic instructions to the computer are stored in ROM chips. These instructions are called micro programs. The ROM

chips with micro programs are called Firmware. An example of Firmware is BIOS chip.

Secondary memory (Auxiliary memory)

The secondary storage devices are basically classified into Sequential (Eg- Magnetic tape, Hard disk) access and Direct [Magnetic disk, optical disk like CD DVD Blu ray] access devices.

4.1.3.3. Advanced portable storage devices

- Zip Drive
- Pen drive (USB flash drive)
- Super Disk

4.1.3.4. Memory hierarchy

The secondary memory elements are the cheapest but slow. The Architects of a computer are always trying to reduce the cost and increase the speed. Also each memory element has its own advantages and limitations. For example, the CPU can access directly only semiconductor memory elements but most of them are volatile. Secondary memory elements are permanent storage but very slow. To overcome all these situations, the memory elements are optimized using a hierarchical architecture of these elements

4.1.3. Input devices / output devices

4.1.3.1. Input device

A wide variety of input devices are now available. They are classified into general purpose and special purpose. Keyboard and mouse are general purpose devices. Optical Mark Reader, Bar code Reader, Track ball, etc. are special purpose input devices.

Input devices used for various types of applications can be classified as follows

1. Character input devices
    - Keyboard
2. Graphic Input devices
    - Mouse
    - Joystick
    - Trackball

- Track pad
- Track point
- Light pen
- Touch screen, etc...

3. Data scanning devices
   a) Optical scanners
      - Optical Mark Reader(OMR)
      - Optical Character Reader(OCR)
      - Bar code Reader
   b) Magnetic Character Recognition Devices
      - Magnetic Ink Character Reader(MICR)
4. Electronic cards based device
   - Smart card reader
5. Voice input device
   - Microphone
6. Vision based devices
   - Digital Camera
   - Web cam

4.1.3.2. Output device

Main purpose of output devices is to receive information from the computer and supply them to users. The computer sends information to the output devices in binary forms. The output devices convert them into a form that can be understood by users. Nowadays several output devices are available. We classify them as follows:

- Monitors
- Printers
- Plotters
- Screen image Projector
- Voice output system

4.1.4. Computer software

4.1.4.1. Software

Computers are machines. They have no intelligence and common sense. Computers are designed to follow instructions blindly. They can perform the tasks only if its logical steps are specified by the programmer. So the computer must be instructed clearly and specifically each and every step to perform a job. We are so familiar with Windows or Linux installed in computers, office automation environment like Ms Office, Open office etc. Each of them is a bundle of programmes. Such an integrated programme package is called software. Some examples are Tally (accounting software), Ms word (Word processing software).

4.1.4.2. Classification of software

Softwares are classified into two broad categories. One is system software and the other is Application software.

Relationship between Software and Hardware

Software refers to the computer programmes that are loaded into a computer system. Hardware refers to all visible physical devices which are assembled together to build a computer. Without software (programmes) a computer (hardware) can do nothing, and without hardware, the software is meaningless.

4.1.4.3. Malicious software (malware)

It is the software used to disrupt computer operation, gather sensitive information, or gain access to private computer systems. Malware includes computer viruses, worms, Trojan horses, spyware, cookies and other malicious programs.

Computer viruses

A computer virus is a programme or piece of code that is loaded onto your computer without your knowledge and damage routine and normal working of your computer system. A virus can replicate itself and finally spread over the computer files and the computer become malfunctioning. All computer viruses are man-made. Even a simple virus is dangerous because it will quickly use all available memory and bring the system to a halt. An even more dangerous type of virus is the one capable of transmitting itself across networks and bypassing security systems. An antivirus programme scans computer for viruses and remove them, if found. A number of antivirus programmes are available like Norton, AVG, Avira, Avast, etc.

4.1.4.4. Copyright

Copyright is the property right that arises automatically on the creation of various categories of works such as Literacy, Music, Film, Published items, Software etc. It protects the rights and interests of the creator of the work. Copyright does not have to be registered. By the copyright, owners have the exclusive right to copy, publish, perform and broadcast their work.

4.1.4.5. Software piracy

When you are copying a software product without the legal permission of its creator, this act is known as software piracy. The Piracy is against the Copyright Act. In international law, piracy is a crime. The people who engage in acts of piracy are called Pirates.

4.1.4.6. Licensing

While purchasing a software product, user gets a license to use the application, but it cannot be copied on other machines. The software license is a type of proprietary license which will make a contract between the producer and user.

4.1.4.7. Free software philosophy

"Free software" means software that respects users' freedom on software. It means that the users have the freedom to use, copy, distribute, study, change and improve the software. Thus, "free software" is a matter of liberty, not price.

4.1.5. Application of Information Technology

4.1.5.1. Communication

In the field of communication, the growth of computer is very fast. The technology is changing day by day. Computers and network devices are extensively used in sending and receiving information over long distances.

Internet

Different facilities of internet like chatting, sms, mms, e-mail, and video conferencing, and news groups are used for communication purpose. They are easy to use, have less cost, high speed. Using internet we can send any type of data (text, audio, video) to every nook and corner of the world within seconds.

Mobile Communication

Now-a-days the application of mobile phone is very wide. Any type of data can be send through mobile phone

4.1.5.2. Business

IT plays an important role in business environment as every organization adopts it in some form or the other to perform tasks in an effective manner. In business IT contributes business transaction effectively by integrating business processes, transferring payments, and delivering services electronically. Electronic commerce or e-commerce refers to the electronic means to conduct commerce between business communication and transactions over the internet. It includes buying and selling over the internet, electronic fund transfers, smart cards, digital cash and all other ways of doing business over digital networks

4.1.5.3. Medicine and healthcare

The main application areas of IT in medical field are medical diagnosis, telemedicine and medical imaging.

- In medical diagnosis, doctors can examine the patient's disease with the help of computerized system. For example by using ECG to determine both normal and abnormal condition of heart.
- Tele-medicine is used to examine patients in remote location. Telemedicine is implemented with the help of telephone line and a computer network. For example a doctor sitting in England can consult a patient sitting in Kerala.
- Medical Imaging is used to view anatomical (internal) structure of a human body. Various techniques are MRI scan (Magnetic Resonance Imaging) and CT scan.(X-ray Computed Tomography), etc.

4.1.5.4. Entertainment

Computers are widely used in entertainment areas like animation, computer games, video editing, morphing, etc.

- Animation is the process of recording, manipulating and displaying motion pictures. For example, Micky & Mouse is an animation cartoon. For cartoon creation, first draw the picture and provide motion capability with the help of computer.
- Computer games are created with the help of animated graphics. Other than enjoyment, most of the computer games help us to increase the IQ power, concentration power and hand-eye co-ordination

4.1.5.5. E-governance

E-governance is the delivery of government services and information to the public using electronic devices. According to national e-governance plan "Make all

Government services accessible to the common man in his locality, through common service delivery outlets, and ensure efficiency, transparency, and reliability" of such services at affordable costs to realize the basic needs of the common man". For example, www. kerala.gov.in site act as a e-governance website. Akshya centers are promoting e-Governance.

4.1.5.6. Education

Computer plays a vital role in the area of education. Now-a-days conventional classrooms of schools are totally changed by modern smart classrooms. A new category of teaching tools are emerged by using computers for learning CAVI (Computer Aided Video Instruction), Multimedia, CD ROMs, Computer Aided Instructions (CAI), Presentation aids, Productivity tools, simulations, internet, distance education and online education are some methods used by computers in education.

E-Learning

E-Learning or learning through computer technology helps the students to provide good and standardized education. Students can interact with the e-learning software, enjoy exiting colourful presentation, play games and answer quiz questions while learning a great deal through personal involvement. E-Learning includes computer based training (CBT) and web based training (WBT).

Virtual classrooms

A virtual classroom is an online learning environment. It helps the students to get online education from remote places. Just like in a real-world classroom, a student in a virtual classroom participates in synchronous instruction, which means that the teacher and students are logged into the virtual learning environment at the same time.

4.1.5.7. Engineering manufacturing

In industry, production can be planned, co-ordinated and controlled with the help of computers. In gas exploration, the machine of drilling and oil refining is directly operated with the help of computers. In power station, information technology enabled services, back office processing, call centers, data entry job, electronic firms, and digital catalogues and in human resource service, computers are widely used. Engineering manufacturing is concerned with the application of mechanical, electronic, and computer based systems to operate and control production. Here designing, developing, assembling, checking, etc are done by using computers. CAD (Computer Aided Designing) and CAM (Computer Aided Manufacturing) are used here. Computer controlled equipment, flexible manufacturing system and robots are used

in manufacturing field. For example, car manufacturing companies are assembling cars with the help of computer assistance.

4.1.5.8. Science

Computer plays a vital role in the area of science. Major application areas are genetics, research laboratories, meteorology (weather prediction) and space technology. Scientists have been using computers to develop theories, to analyze and to test the data. The speed and accuracy of a computer allow different scientific analysis to be carried out. They can be used to predict natural calamities like earthquake and tsunami. Satellite based application would not have been possible without the use of computer. Computer is widely used to acquire knowledge about solar system and cosmos.

4.1.5.9. IT policy in Kerala state

The state of Kerala has always been a fore runner among the states of India in the adoption and application of ICT be it the service/ support to its citizens or enabling smoother functioning of the business community. The vision of the state IT policy is to plan and develop, market the state as the most preferred IT/ITES investment/ business destination in India. An effective E- governance frame work through Akshaya centers made the state of Kerala a 100 % E- literate and digital.

4.1.5.10. E-commerce

Commerce is the selling and purchasing of goods and services. E-Commerce stands for Electronic Commerce. It is the purchasing, selling, and exchanging of goods and services over Internet through which transactions are performed electronically.

4.1.5.11. M-commerce

M-Commerce is known as mobile commerce, it is the buying and selling of goods and services through wireless hand held devices such as cellular phone and personal digital assistants (PDA). M-Commerce has evolved as a new and simpler concept to operate financial transaction through mobile phones and it includes services such as banking, payment, and ticketing. M-commerce users may view and interact with information that appears through SMS (short message service),WAP(wireless application protocol) or a standard HTML browser on a PDA, etc.

4.1.5.11. Online trading

Online trading is the buying and selling of stocks and shares through computer. Stock exchanges and stock broking firms are using computers for getting various information like foreign securities, share index, etc.

4.1.5.12. Net-banking

The performance of all banking activities through Internet is called Net banking. It is also known as online banking or Web banking or E-banking.

Assessment Activities

Activity - 1

Power point presentation on input output devices computer memory, hardware and software.

With the help of PPT, the teacher elicites responses from students on input/ output devices, memory, hardware and software. Teacher asks students to categorize and list out some components as input and output devices.

Activity - 2

Seminar on Hardware and Software and its classification Learners are grouped into five consisting of 5 students and each group is assigned with different topics, they are required to collect details and present it in an open seminar. The teacher should provide sufficient materials and support the students to actively participate in seminar. A moderator is selected amongst the group for controlling the proceedings. During the seminar the teacher may observe the performance of each group. Finally consolidate the main ideas of each topic. Individuals are required to submit the seminar report.

TE Questions

1. Why are Computers commonly accepted? Substantiate with reasons.
2. Find the odd one out with reasons

   Mouse, Scanner, VDU
3. Classify the given items as application and system software

   MS-Dos Page Maker

   MS –Excel Tally

   Windows Linux
4. Arjun, a FRM student decided to buy a book through internet

   A. Name the type of business mentioned here

   B. List out and explain any two such types of business.
5. Information Technology is applied in all walks of human life. Illustrate any 5 such application areas

Unit - 2

COMPUTER HARDWARE AND OPERATING SYSTEM

Introduction

In this unit, we will learn about the components present inside the CPU cabinet. You have already learnt about various functional units of Computer such as input unit, output unit, Central processing etc.

Learning Outcomes

The learner :

- Analyses the hardware components present inside CPU cabinet
- Identifies activities in the booting process
- Creates and manage files and folders
- Install various application software
- Transfer data from one computer to another

Concepts

4.2.1. Components of a personal computer

4.2.1.1. Parts of a personal computer

We can explore each component one by one.

Switched Mode Power Supply (SMPS) - SMPS helps to convert input power supply to controlled voltage suitable for computer. It converts AC (Alternating Current) power supply to DC (Direct Current) power supply because computer works on DC power supply.

Mother Board- Mother Board is a Printed Circuit Board (PCB) which is used to connect all components (such as processor, RAM, Hard disk, etc) together inside the CPU cabinet. It is also called System Board or Main board. System Board contains circuit board with thousands of electrical circuits. It holds the processor chip, memory chips, chips that handle input/output and the expansion slots for connecting peripherals such as printer, modem etc. Some chips are soldered onto the motherboard (permanent), and some are removable. Intel, Asus, GIGA Bytes, MSI, Mercury are some important companies manufacturing Mother Boards.

Central Processing Unit (CPU) -All calculations and operations are performed inside CPU. It is also called Processor. Some famous Companies, which are manufacturing

processors, are Intel, AMD, IBM, Motorola, Cyrix. Speed of the processor is measured in Hertz such as KHz, MHz, and GHz. The speed of the processor is measured in Giga Hertz (GHz).

Random Access Memory (RAM) - RAM stores data and instructions (programmes) to be executed by CPU. RAM is volatile memory- i.e., contents of RAM will be lost when power is switched off. 2 GB RAM modules are commonly used. We can insert more than one RAM module in mother board slot to expand RAM size.

Hard disk - Hard disk stores programs (software) and data permanently. 512 GB, 1 TB Hard disks are available in the market. Various companies like Seagate, Samsung, LG, etc. are manufacturing Hard disks.

Sound Card - The voice data between CPU and sound devices are sent using Sound Card. Separate sound cards are not normally used but on board sound chips are used.

Network Interface Card (NIC) - When we want to connect our computer with a network, our computer must have NIC. Usually when we want to connect with internet, an external modem is connected to NIC using a wire similar to telephone wire. Now NIC is integrated with Mother Board.

BIOS Chips - The routine instructions which are needed at the time of booting of computer and other basic system details are stored in BIOS Chips. Such instructions are called fare ware.

Complementary Metal Oxide Semiconductor Memory (CMOS Memory) -

We can set current date and time in a computer using an Operating system. When we shut down the computer and later when we switch on the computer, this date and time will be up-to-date. How is it possible? Where this data is stored? Here is the use of CMOS Memory. CMOS memory is a small battery backed memory which is used to store semi permanent data such as system date, system time, etc. CMOS battery is used to provide power supply to CMOS Memory.

Expansion Slots - We can expand the functionality of motherboard by inserting various expansion cards in this expansion slots. Various expansion cards such as Graphic Card, Network Card, etc. can be inserted in this slot. Industry Standard Architecture (ISA)- Slowest type of bus. Personal Computer Interface (PCI) - Faster than ISA; supports plug and play. Accelerated Graphics Port (AGP) - Designed for video adapters

CD/DVD Drive - We can insert our CD/DVD in this drive. This can be internal or external drive.

Data transfer cable (data bus) - It is a cable that transfers data between devices inside CPU cabinet.

Ports - They are present in the back side or front side of the CPU cabinet to connect external devices such as printer, keyboard, monitor, etc. with CPU. It is called hardware ports. There are different types of ports.

- Serial port- Data flows in a series of pulses, one after another- one bit at a time; slow data transfer rate.
- Parallel port- Data flows through eight wires allowing the transfer of eight bits of data simultaneously; faster than serial port.
- Universal Serial Bus (USB)- Allows up to 127 devices to be connected at a time. Now a days almost all devices are connected using USB.(eg: printer, scanner, modem, mobile phone, flash drive, etc are connected using USB port).
- VGA connector- A 15 pin connector used for monitors, Telephone, Network, PC card, and Sound connectors.

4.2.1.2. Booting

When we switch on the computer a series of activities take place and the operating system is loaded into memory (RAM). This process is called booting. At the time of booting an operating system such as Linux, Windows or Unix is loaded to RAM from Secondary Memory like Hard disk, pen drive, DVD, etc and the system is ready to use.

4.2.1.3. Bios

The routine instructions present in ROM which are executed at the initial stage of booting, are generally called BIOS (Basic Input Output System).

4.2.1.4. Post

BIOS contains a part of instructions that checks the peripheral devices (such as keyboard, monitor, etc) and other components in CPU whether they are working correctly or not. This process is called POST (Power on Self Test).

4.2.2. Microsoft disk operating system (MS- DOS)

MS-DOS (Microsoft Disk Operating System) is an operating system for x86-based personal computers. It is a single user operating system which supports character user interface (CUI). It was the most commonly used member of the DOS family of operating systems, and was the main operating system for IBM PC compatible personal computers during the 1980s to the mid-1990s. It was gradually superseded

by operating systems offering a Graphical User Interface (GUI), in particular by various generations of the Microsoft Windows operating systems.

4.2.2.1. Meaning of disk operating system

All versions of MS Windows support MS-DOS like command line interface (CLI). This could run DOS from Windows. We can have a look at Dos commands. We can execute Dos commands in windows using cmd.exe

a) Click on start menu.

b) Type cmd.exe on search programs and files.

c) Press enter key

Dos commands - You can type any DOS command at the blinking cursor. Let us discuss the usage of commonly used Dos commands.

1. Date-To see or change the system date, type the command Date
2. Time-To see or change the system time, type the command Time
3. CLS-To clear the screen, type command CLS.

File related commands

4. COPY CON- can be used to create a file. ^Z Can be used to save the file and exit.
5. TYPE-To view the contents of a file
6. COPY-Copy command is used to Copy one or more files to another location
7. RENAME/REN-It is used to change the name of a file or folder
8. DEL/ERASE-To remove a file from storage we use DEL/ERASE command.

Directory related commands

11. MKDIR/MD-It can be used to create a directory.
12. CHDIR/CD-Display the name and path of current directory or change the directory

    CD.- Change the directory to its parent directory

    CD \-Change the current directory to root.
13. RMDIR/RD-Removes or delete a directory.
14. TREE-Graphically displays the folder structure of a path or drive
15. DIR-This command is used to display the list of files and subdirectories in a directory. You can use switches with this command such as /p, /w, /s etc.

DIR/P Pauses after a screen full of information

DIR/W Uses wide list format

DIR/S displays files in a directory and its sub directories

Wild card characters (* and?)- A wild card character is a special symbol that stands for one or more characters. Many operating systems and applications support wild card.

4.2.2.2. Windows 7 operating system

Windows OS was introduced by Microsoft with the objective of giving a graphical interface to computer users. It is proprietary Software. The graphical interface changed the perception of computers. Several versions of windows OS are launched. Now commonly used version is Windows 7. It provides ease, simplicity, robustness, security and reliability to your computer and the data stored on it. Let us discuss the components of Windows 7.

The desktop - The desktop is the main screen area that you see after you turn on your computer and log on to Windows. Like the top of an actual desk, it serves as a surface for your work. When you open programmes or folders, they appear on the desktop. You can also put things on the desktop, such as files and folders, and arrange them however you want.

The taskbar - The taskbar is the long horizontal bar at the bottom of your screen. The taskbar is almost always visible. It has three main sections.

a) The Start button, which opens the Start menu.

b) The middle section, which shows you which programs and files you have opened and allows you to quickly switch between them.

c) The notification area, which includes a clock and icons (small pictures) that communicate the status of certain programs and computer settings.

The Start menu - The Start menu is the main gateway to your computer programmes, folders, and settings. It is called a menu because it provides a list of choices, just as a restaurant menu does. And as ”start” implies, it is often the place that you will go to start or open things.

My Computer - My computer is the source of all resources of the computer including drives, control panels and data.

Recycle Bin - When you delete a file or folder, it doesn’t actually get deleted right away. It goes to the Recycle Bin. That is a good thing, because if you ever change

your mind and decide you need a deleted file, you can get it back by using restore option. If you want to delete a file permanently, you have to remove that file from recycle bin.

Now we can discuss some frequently used built in applications (Accessories).

Windows Explorer - It is used to manage files, folders and programs on your computer. It uses a graphical user interface. You can browse each folder to view its content. You can easily navigate to different locations or open files folders and programs with a mouse click.

4.2.2.3. Basic file and folder operations

Files are the most basic entities to store any type of information. There are different types of files such as text files, audio files, image files, video files, system files, application files, etc. Folders are used to group various files. A folder is a container for files. Folders group and organize files on your computer. If you have various files on your computer and you want to find a particular file, it is not easy to find it. So it is necessary to create folders and subfolders and store the files in the folder and subfolder. You can create a folder in another folder which is known as a sub folder. A folder can contain any number of subfolders.

Creating files and folders - In windows 7 you can create new files and folders using windows explorer. You can perform the following steps to create a folder.

a) Start windows Explorer.

b) Select a drive using Computer navigation pane to create a folder. Select office (D:) Drive.

c) Right-click anywhere on the blank area of the file list area to open context menu.

d) Click new option on the context menu ¨ Folder option, a folder with name New Folder, is created.

e) Rename the folder with a name of your choice. Here I choose DCA.

f) Press enter key from keyboard.

You can create files in this folder. Perform the following steps to create a file in DCA folder.

a) right-click anywhere on the blank area of the file list to open the context menu.

b) Place the mouse pointer on the new option from the context menu, a sub menu appears.

c) Select the type of file that you want to create from context menu. For example select Microsoft word document, a new Microsoft office file is created with a default name

d) Rename the file. Press enter key.

Renaming files and folders - Rename feature is used to change the name of existing file or folder.

a) Open windows explore and navigate to the location where the file or folder that you want to rename is saved.

b) Right-click the desired folder that you want to rename. Select DCA.

c) Select the rename option from the context menu. The name of the folder appears in edit mode.

d) Type the new name for the folder to rename it. For example DCA1. Press enter key. The folder now appears with new name.

Copying and Moving Files and Folders - Copying and moving files and folders are some of the basic operations that are performed frequently on a computer. Perform the following steps to copy a file.

a) Right-click the file that you want to copy. For example select Microsoft word document in DCA folder. A context menu appears.

b) Select copy option from context menu

c) Navigate to the drive or folder where you want to store a copy of the copied file or folder. For example D: drive.

d) Right-click anywhere on the blank area in the content pane. A context menu appears.

e) Select paste option from the context menu.

A copy of the file now appears in the new location.

Deleting a file or folder- You can delete a file or folder from one location. Perform the following steps.

a) Right-click the file or folder that you want to delete. For example select new text document. A context menu appears

b) Select delete option from the context menu. The delete file message box appears prompting to confirm deletion.

c) Click yes button in the delete file message box to delete the selected file.

4.2.2.4. Accessories

Calculator - You can use Calculator to perform simple calculations such as addition, subtraction, multiplication, and division. Calculator also offers the advanced capabilities of a programming, scientific, and statistical calculator.

Notepad - Notepad is a basic text-editing program (Text Editor) that you can use to create text files.

Paint - Paint is a feature in Windows that you can use to create drawings or edit digital pictures. You can also use Paint to save picture files using different file formats.

Opening paint program

a) Click the start button.

b) Place the mouse pointer on all programs.

c) Click accessories.

d) Click the paint program.

WordPad - WordPad is a text-editing program you can use to create and edit documents. Unlike Notepad, WordPad documents can include rich formatting and graphics, and you can link to or embed objects, such as pictures or other documents. Perform the following steps to open the WordPad program.

a) Click the start button.

b) Click the accessories from the list of programs.

c) Click the WordPad program.

4.2.3. Installing and managing windows 7

4.2.3.1. Installing windows 7

Before installing Windows 7, please check whether your computer has minimum hardware configuration: CPU (processor) 1 GHz. Memory (RAM) 512 MB. Hard disk 16 GB of available disk space. The hard disk must be divided into one or more regions before installing OS. This is called disk partitioning. While installing windows 7, it helps us to perform disk partitioning. Following section describes the installation steps in detail.

4.2.3.2. Steps to install windows 7

Step 1 : Switch on your computer and insert the bootable Windows 7 DVD or bootable USB Pen Drive .

Step 2 : Press any key. A window will appear. The message shown when we insert Windows CD/DVD

Step 3 : Click ”install now”. A window will appear.

Step 4 : Click “Next” button. A window will appear.

Step 5 : When tick the ”I accept the license check box” and click ”next” button, A window will appear

Step 6 : Click ”custom advanced”. A window will appear

Step 7 : Click ”drive option advanced” When clicking it, A window will appear

Step 8 : Click ”new”. Here we are creating a new partition. After clicking, A window will appear

Step 9 : Give size of the first partition (E.g. 80000 MB) and click ”apply”.

Step 10 : Click ”OK”. At that instance, A window will appear.

(Note: If we want, we can create more partitions).

Step 11 : Click ”next”. A window will appear (Note: By selecting gun allocated space and clicking ”new”, we can create additional partitions. But it is optional.)

Step 12 : Wait until installation is completed. It may take several minutes. After that it may ask for product key

Step 13 : Give the product key obtained from licensed vendor or tick ”automatically Activate” and click next. Following it, window will appear

Step 14 : Give password. Click ”next”. Following window will appear

Step 15 : Give date and time correctly. Click ”next”. Installation will be completed.

Now we are ready to use window 7. Then the window will appear

4.2.3.3. Hard drive preparation (partitioning hard disk)

Now a days hard disks having storage capacity 512 GB or 1 TB are commonly available. These disks have to be divided into one or more regions so that disk can be managed and used efficiently. The process of dividing a hard disk (or any other physical disk) into one or more region is called partitioning. A partition is a portion of a physical disk that functions as a separate physical disk called drive.eg:- C: drive, D: drive, etc. in Windows) There are two types of partitions – primary partition and extended partition. A primary partition cannot be further subdivided. An extended partition can be further divided into one or more logical drives, each of which can be formatted separately and assigned its own drive letter.

Various Partitioning tools are:-

1. FDISK. Used in DOS and older version of windows. With FDISK, you can change an existing partition without deleting it first.
2. Disk Administrator. Used in Windows NT
3. Disk Management. Used in Windows 2K, XP, Vista, Windows 7, 8
4. Third-party tools (eg: Partition Magic, GParted etc) allow changes to existing partitions.

Nowadays, when we install an operating system like windows7 or Linux, we can partition the hard disk along with the OS installation. Therefore separate partition tools are rarely used.

We can also select Disk Management, by clicking ”Administrative tools” from Control panel. One of the partitioning tool is disk management utility. It can be opened using the command. Diskmgmt.msc after clicking start button. All the partitions available on the hard disk will be shown. We can edit, delete and create partitions.

4.2.3.4. Formatting

We have created partitions. Now we want to store files and folders in it. Before storing files and folders, the partition must be formatted. The process of arranging a partition to store files and folders is called formatting. It creates a file system like FAT16, FAT32, NTFS, ext3, ext4, etc. FORMAT command can be used to format a disk.

4.2.3.5. Device driver

Device driver is a software that helps the operating system to control and manage a device connected to a computer (such as printer, scanner, voice input devices etc). This program is written by programmers who have an idea about the peripheral hardware characteristics. When a new peripheral device is added to your computer such as printer, its driver must be installed in order to use it. In Windows 7, most of the device driver (such as NIC driver, Sound Card Driver, Display Adapter Driver, etc) will be installed automatically when the OS is installed. There is no need to install driver separately.

4.2.3.6. Installing a printer driver

Steps to be followed for installing a HP DeskJet 3900 printer in our system.

Step1 : First insert the Driver CD which is provided when we purchase a Printer.

Step2 : Click ”Run setup.exe”.

Step 3 : Click install.

Step 4 : Click ”next”

Step 5 : Switch on the printer, wait for some time, the printer will be installed.

4.2.3.7. Changing file views in windows 7

When we select ”My Computer”, and an appropriate drive (Eg. C drive), we can see the files and folders in it. These file views (the way in which file names are displayed) can be changed in windows 7 Click ”my computer” icon, then right click the mouse, select ”view”, select any of the following option

1. Extra large Icons- Files and folder will be displayed with extra large size icon.
2. Large Icons - Files and folder will be displayed with large sized icon
3. Medium Icons- Files and folder will be displayed with medium sized icon.
4. Small Icons- Files and folder will be displayed with small sized icon.
5. List- File and Folder will be displayed like a simple list
6. Details-File and Folder will be displayed with details such as date of last modification, file size, type of the file, etc
7. Tiles- Files and Folders will be displayed in column wise format.
8. Contents- Files and Folders will be displayed with details such as date and time of modifications.

4.2.3.8. Control panel

It is a set of utilities which is used to configure windows settings. Control Panel includes many icons that can help us to optimize, maintain, and personalize the operating system. See figure 4.32 Various Icons available in Control Panel are:

1. System and Security- It is used to configure the security of the OS, to backup the OS and to trouble shoot the system.
2. User Accounts and Family Safety- It is used to manage user and access rights.
3. Network and Internet- It used to setup internet and file sharing options.
4. Appearance and Personalization- it is used to manage the appearance of the system such as theme, font, screen resolution, etc.
5. Hardware and Sound- It is used to manage devices such as printer, sound device, etc.
6. Clock, Language and Region. it is used to manage language setting, time, date, etc.

7. Programs- it is used to repair or uninstall programs
8. Ease of Access- It is used to manage OS such that it will become easier to see and use

4.2.3.9. User creation and rights

Your Computer can be used by your brother, sister and other persons. For each user, we can create a separate login area. The main user (Administrator) can create different users and their access rights can be limited. Following steps are used to create a user in window7.

Step 1 : Select "Control Panel".

Step 2 : click "User Accounts and Family Safety"

Step 3 : If we want to create a new account, select "Create a new account".

Step 4 : We can create a Standard user or Administrator user as you need. Give the name of user (eg: dca1) and click "Create Account". A user (Here edca1 f) will be created. If we want, we can change the setting of the user by clicking the icon of the user. We can create or change password, change the icon picture, change the account type, etc.

4.2.3.10. Trouble shooting

The process of identifying and correcting common computer problem is called trouble shooting. Windows provide a utility to troubleshoot any problem. When you run a trouble shooter, it might ask you some questions to fix the problem. If the trouble shooter fixes the problem, you can close the trouble shooter. If it couldn't fix the problem, you can view several options that will take you online to try and find an answer. In either case, you can always view a complete list of changes made. To select Trouble shooting in windows, do following steps:

Step 1 : click "Control Panel"

Step 2 : Click "trouble shooting".

4.2.3.11. Creating start-up disk

Suppose the windows file on your hard disk is damaged. Your computer will not be able to boot. What is the solution for it? The solution is to use a start-up disk. A start-up disk (sometimes called A boot disk) is a type of removable media, such as a floppy disk, CD, or DVD, that contains Windows start-up files that your computer can use to start Windows if the Windows system files on the hard disk became

damaged or unusable. A start-up disk is normally used to repair our windows. In windows 7 we can create a system repair disc that contains the System Recovery Options menu. This menu contains special recovery tools that can help you to get Windows running again.

Steps to create a Start up disk

Step 1 : Select ”control panel”.

Step 2 : Select “Backup and restore”.

Step 3 : Click ”create a system repair disc”

Step 4 : Insert a blank DVD and click “Create disc”. Your Start up disk will be created.

4.2.3.12. Sharing files

Windows7 provides a facility to share files and devices in a network. Steps used for sharing files are given below.

Step 1 : Right click the required file, click ”Share with”. Following window will appear.

Step 2 : We can give “read” permission or “read and write” permission depending on the requirement. We can share a file with a specific user also.

4.2.3.13. Internet connection and firewall

We can connect to the Internet, using following options:

1. Wireless- We can choose this connection if our computer has a wireless adapter.
2. Broadband -Choose this if our computer is connected directly to a broadband modem (also called a Digital Subscriber Line (DSL) or cable modem), and you have an Internet account. With this type of account, we need to provide a user name and password to connect.
3. Dial-up-Choose this if we have a modem but it’s not a DSL or cable modem, or if you want to use Integrated Services Digital Network (ISDN) to connect your computer to the Internet. This type of connection is rarely used now.
4. Data Card - Choose this if we have a data card purchased from an Internet Service Provider (ISP) like BSNL, Idea, Vodafone, etc. now a days broadband connection is normally used.

Firewall - A firewall is software or hardware that checks information coming from the Internet or a network, and then either blocks it or allows it to pass through to our computer, depending on our firewall settings. A firewall can help prevent hackers or malicious software (such as worms) from gaining access to our computer through a network or the Internet. A firewall can also help stop your computer from sending malicious software to other computers.

The following illustration shows how a firewall works.

Using Start-up menu and Internet Explorer the Start menu is the main gateway to our computer's programs, folders, and settings. It's called a menu because it provides a list of choices, just as a restaurant menu does. And as "start" implies, it's often the place that we will go to start or open things.

Use the Start menu to do these common activities:

- Start programs
- Open commonly used folders
- Search for files, folders, and programs
- Adjust computer settings
- Get help with the Windows operating system
- Turn off the computer
- Log off from Windows or switch to a different user account

4.2.3.14. Windows Explorer

It helps us to manage files and folders, copy files, move file, delete files etc. When we open "My Computer", it automatically opens in windows explorer. We can also open using following method

Click "start button"- select "All programs". click "Accessories". click "Windows Explorer".

4.2.3.15. Installing MS Office

Step1 : Insert MS Office CD purchased from licensed vendor. Following window appears.

Step2 : click "Setup.exe".

Step 3 : Wait for some time,

Step 4 : Give the Product key supplied from licensed vendor. Click "Continue"

Step 5 : Click "install now".

Step 6 : Wait for some time.

Step 7 : click ”close”. MS Office is successfully installed.

4.2.3.16. Installing DTP software

DTP (Desk Top Publishing) software helps us to create documents, poster, banner, etc. Page maker, Photoshop, Corel Draw, etc. are DTP Software. Here we are going to install Page maker 7.0

Step 1 : Insert the CD or copy the backup file of page maker. Open the folder.

Step 2 : Click “setup”.

Step 3 : Click “next”.

Step 4 : Select” US English” and click ”Next”.

Step 5 : Click ”Accept”

Step 6 : Click the type of set up you prefer (typical)

Step 7 : Click ”next”

Step 8 : Give Serial number obtained from authorized vendor and click ”Next”.

Step 9 : Wait for some time for appearing a window

Click ”Next”.

Step11 : Click ”Next” .

Step 13 : Wait for some time. Page Maker will be installed.

4.2.3.17. Installing Tally

Tally is software used for managing financial accounting in an organization. Following steps are used to install Tally 9.

Step 1 : Double click ”setup file”

Wait for some time. A window will be opened

Step 2 : Click “next” .

Step 3 : Click ”next”

step 4 : Click ”install”

Step 5 : Wait for some time,

Step 6 : Click ”Finish”. Tally 9 is successfully installed.

4.2.3.18. Maintaining computer software

Many of us use our personal computers for keeping day to day accounts, storing personal files such as photos, video, music, etc. Obviously you have to protect your data but computers that become overloaded or vulnerable to viruses could suddenly freeze or crash, leading to loss of information. Moreover there exists the threat of computer hackers who like nothing more than corrupting your operating system. Some guidelines on the basic computer maintenance are given below.

1. Antivirus installation
2. Cookies- cleaning out cookies
3. Cleaning out temporary internet files, Recycle bin
4. System information
5. System tools-Disc clean up, disc defragmentation
6. Back up of user data

4.2.3.19. Transferring computer data

Computer data can be transferred using flash drives CD, DVD, etc.

- Flash Drives - A flash drive is a small storage device that is used to transport files from one computer to another.
- Compact Disc /Digital Versatile Disc (CD/DVD) - Optical Disc Drive Optical disc drives retrieve and/or store data on optical discs like CDs, DVDs, and BDs (Blu-ray discs). Most optical drives can play and/or record onto a large number of different disc formats. Popular optical drive formats include CD-R, CD-RW, DVD, DVD-R, DVD+R, DVD-RW, DVD+RW etc.
- DVD - DVD stands for “Digital Versatile Disc”. A DVD is a high capacity optical disc that looks like a CD, but can store much more information.
- DVD+R - DVD+R stand for “Digital Versatile Disc Recordable.”DVD+R discs look the same as regular DVDs, but can be used to record data. Single-sided, single-layer DVD+R discs can store 4.7GB of data, while double-layer discs can store 8.5GB and double-sided DVD-Rs can store 9.4GB.
- BLU-Ray Disc (BD)- Blu-ray is the name of a new optical disc format jointly developed by the Blu-ray Disc Association (BDA) can hold up to 25GB on a single-layer disc and 50GB on a dual-layer disc.

Practical Activities

Activity - I

To set up a broad band connection, following steps are used.

Step 1 : Select "Control Panel" A window will be opened

Step 2 : Click "Network and sharing Centre".

Step 3 : Click "Setup new connection or network".

Step 4 : Click "Connect to internet" and click "next".

Step 5 : Click "Broad Band".

Step 6 : Type username and password provided by ISP (Internet Service Provider like BSNL) and click next. Now internet will be connected

Activity - II

To turn on windows firewall, following steps can be done

Step 1 : Select "Control panel". Then, A window appears,

Step 2 : Click "Windows Firewall".

Step 3 : Click "Turn windows firewall on or off".

Step 4 : Click "Turn on Windows firewall" and press ok.

Activity - III

Installing AVG Antivirus

1. Double click on AVG setup file.
2. Wait for some time.
3. Click " Accept". A window will come up
4. Click "next".
5. Tick "Standard Installation" and click "Next".
6. Click Accept again.
7. Click next .
8. Click "next".
9. Click Finish. Wait for some time,
10. Click " Next".
11. Click "OK". Your Installation is completed.

12. Click “Next “.
13. Click “Next”.
14. Installation is completed

Assessment Activities

Conduct a seminar on different parts of a computer

Identify the components of a damaged computer by disconnecting

TE Questions

1. Expand USB

   Choose the correct answer from the bracket.
2. MS DOS is a..... Operating System. (Single user, Multiuser).
3. Interface of MS DOS is..... (Graphical User Interface, Character User Interface).
4. Raj wants to share a file with his friend in a networked lab. How is it possible?
5. List and explain any three guidelines for computer maintenance.

Unit - 3
OFFICE AUTOMATION

Introduction

Microsoft office suite is an essential collection of desktop applications that include word for document preparation, excel for spreadsheet, power point for presentations, access for databases and much more. Different versions of Microsoft office are available.

Learning Outcomes

The learner:

- Launch MS Office
- Identifies components of MS word
- Start MS Excel
- Explain the meaning and uses of PPT
- To start MS Access, Create, Edit and Manipulate data in a data base

Concepts

4.3.1. Office automation basics

Computer machineries and software are used to digitally create, collect, store, manipulate, and relay office information needed for accomplishing basic tasks. Raw data storage, electronic transfer, and the management of electronic business information comprise the basic activities of an office automation system. Office automation helps in optimizing or automating existing office procedures.

4.3.1.1. Concept of office

You may have visited many offices. You are familiar with offices like school office, village office and many other offices. An office is a place where several people like clerks, secretaries, managers, typists, etc. work. They perform the administrative functions of an organization. It can be a place where a particular kind of business/ service is transacted.

4.3.1.2. Nature of work in office

If you want an income certificate from a village office, you give a request to the Village Officer. It must contain relevant documents and proofs. They accept your request and give you a receipt. They verify your documents with the relevant documents in their files. If it is satisfactory, the Village Officer gives you a certificate showing your income. From the above example it is clear that an office performs the following tasks.

A) Receiving information (receiving application)

B) Recording information (recording instructions from the application)

C) Organizing and structuring information (organizing and structuring information with the relevant records in the office)

D) Processing information (preparing income certificate)

E) Communicating information (informing the applicant)

F) Providing access to information (giving income certificate)

4.3.1.3. Need for office automation

Office automation is the application of computer and communication technology for information processing activities in an office. It is used to improve the efficiency and productivity of the office workers. It achieves the goal of a "paperless office". It reduces office costs. Office automation is the application of tools and methods to process office activities by the aid of information technology. Office automation provides tools to simplify, improve, and automate the activities of an organization or a group of people.

Office system requirements - two critical components of an office automation system are:

A) Document preparation

B) Communication system

A) Document preparation - document preparation and presentation are very important functions of an office. We can use office suite tools for document preparation and presentation. Different office suite software is available.

Office suite tools - the term "office suite" refers to all software programs which make it possible to meet office needs. In particular, an office suite therefore includes the following software programs**:**

A) Word processor

B) Spread sheet program

C) Document management system

D) Database management system (DBMS)

E) Presentation software

The popular office suites are: open office (free software), Appleworks, Corel word perfect, IBM/Lotus smart suite, Microsoft office, Sun star office

B) Communication methods - facilities for communication are very important elements in office automation. Modern science and technology have given us a

wide range of means for communication. Today, information transfer can be done in a fraction of a second. Modern communication uses fax machines, electronic mails, video conferencing, etc.

4.3.2 Microsoft word

MS Word is aword processor software developed by Microsoft. A word processor is a computer application that helps in creating and manipulating a document. You can use a word processor to cater your needs of creating and managing documents for day - to - day businesses

4.3.2.1. User interface of MS Word

1. Title bar**:** it is located at the top of the screen and displays the name of the application and the active document.
2. Minimize, maximize and close buttons: they help in controlling the MS Word window. The minimize button is used to minimize the MS Word window over the task bar where as the maximize button helps to restore or maximize the MS Word window.
3. Office button: it contains several options such as new, open, save, save as, print, prepare, send, publish and close.
4. Ribbon**:** it appears just below the title bar in the MS Word window. It displays commands, features and tools available in the MS Word window. The commands are logically grouped under different tabs on that ribbon. Each tab on the ribbon corresponds to a particular task.
5. Dialog box launcher: it refers to as a button that is presented in some groups on the ribbon. This dialog box contains additional options that are not displayed as commands or options of the group on the ribbon.
6. Status bar: it contains information related to the document like number of pages, words in the document and status of the track changes. It is located at the bottom of the window.
7. Zoom control: it allows you to increase or decrease the viewing size of the document.

4.3.2.2. Creating a document

- Setting page margins
- Text formatting features -

  A) Cut

  B) Copy

  C) Paste

D) Numbering

E) Bulleting

- Adding text in a document
- Editing text
- Changing font and font size of text
- Changing the colour of the text
- Applying bold, italic and underline
- Applying strikethrough, subscript and superscript
- Change case
- Paragraph formatting
- Changing intend for a paragraph
- Aligning paragraph
- Line spacing
- Bullets and numbering
- Applying border and shading
- Insert header and footer
- Inserting objects
- Inserting clip art

4.3.3. MS Excel

Microsoft Excel is a powerful application that allows you to store, analyze, manipulate and visualize data in different ways. This application is specially designed to organize data in tables and to analyze tabulated data. You can visualize data by various graphical elements provided by excel. Excel provides a wide variety of formulae and functions that you can use to perform complex calculations.

4.3.3.1. Starting MS Excel

Start Ms excel by clicking start '!all programs '! Microsoft office '! Microsoft excel

4.3.3.2. User interface of MS Excel

It contains title bar, ribbon, status bar, etc which is similar to MS Word.

4.3.3.3. The worksheet

The worksheet can be defined as the place where you enter data or records and perform various operations. The worksheet consists of rows, columns and cells.

The sheet tab - the sheet tab is located besides the horizontal scroll bar and displays various worksheets in a workbook. Workbooks can have any number of worksheets, and each worksheet has its name displayed in a sheet tab.

4.3.3.4. Formulae

Formulae are integral part of Microsoft excel. A formula is a set of symbols and values that perform calculations and returns the result. The symbols used in a formula is known as operators. In Microsoft excel, a formula always start with an equal sign (=) followed by an equation or expression. Formulae are used to perform basic calculations, such as addition, subtraction or finding average as well as complex calculations.

4.3.3.5. Sorting

Sorting data is an integral part of data analysis. You might want to put a list of names in alphabetical order, compile a list of product inventory levels from highest to lowest, or order rows by colors or icons. Sorting data helps you quickly visualize and understand your data better, organize and find the data that you want, and ultimately make more effective decisions.

4.3.3.6. Working with chart

Chart is a visual representation of numeric data. Visual data makes it easy for users to digest the information. Charts help to compare data or relationship between given quantities. Microsoft excel provides various types of charts such as column chart, pie chart, xy (scatter) chart, line chart, etc.

4.3.4. MS PowerPoint

A presentation is a sequential collection of slides, where each slide displays some information in the form of text or graphics. Microsoft PowerPoint is the commonly used presentation software. A Microsoft PowerPoint presentation can be used to explain some ideas or concepts to a group of people. Microsoft PowerPoint provides some built in features such as special effects, animation, compressing media and drawing tools.

4.3.4.1. Creating presentation in different ways

When you start Microsoft PowerPoint, it opens a new blank presentation by default. This is based on the blank template of Microsoft PowerPoint. You can either work with a default blank presentation or create a new presentation based on a custom template.

Creating presentation using blank template –

If you want to create a presentation of your own, then you can use the blank template. It opens a blank presentation. It offers only the basic visual elements of a presentation such as a place holder to add a title in the slide. Blank template gives flexibility, and liberty to create, edit and design the Microsoft PowerPoint presentation

Creating presentation using an installed template –

You can use the templates that are already installed in Microsoft PowerPoint to create a presentation without burden of creating it from scratch. These templates provide an easy start with layout for your presentation. They offer various layouts, visual elements and other design related elements to create presentation.

4.3.4.2. Inserting a new slide

It is necessary to add slides to a presentation. You can insert a slide in the presentation by clicking new slide icon present in slides group of the home tab.

4.3.4.3. Adding themes

Themes refer to the background style of a Microsoft PowerPoint presentation. You can provide a consistent look to the presentation. You can apply a theme to all slides or a single slide. As a best practice, you should apply a single theme to the entire presentation to ensure a uniform look.

4.3.4.4. Saving a presentation

After creating a presentation and modifying it, you can save the presentation to make changes permanent. You have to save your presentation as frequently as possible.

4.3.4.5. Setup the show

It is used to set advanced options for a slide show such as kiosk mode.

You can start a slide show by clicking on from the beginning button of start slide show group of slide show tab. You can start a slide show by pressing f5 button.

4.3.5. MS Access

Ms Access is an example of DBMS. A database is an organized collection of data. It allows you to store, access, manage, and update data easily. In a database, data is stored in the form of rows and columns in tables. A database allows you to manipulate data in a large collection of interrelated data. Before the advent of computers with DBMS, manual or conventional system was followed for record keeping activities in all organizations. A database management system consists of a collection of interrelated data and a set of programs to access those data. The collection of data is referred to as the database and it contains information about one particular enterprise. The primary goal of a DBMS is to provide an environment that is both convenient and efficient to use in retrieving and storing database information.

4.3.5.1. Advantages of DBMS

- Reduce data redundancy (or duplication of data).
- Avoid inconsistency (or problems due to duplication of data).
- Data can be shared.
- Standards can be enforced.
- Integrity can be maintained.
- Security restrictions can be applied

4.3.5.2. Data models

Design and implementation of any DBMS is done based upon data models. It provides a set of tools for describing data, data relationship and solves consistency problems. There are three data models.

1. Hierarchical data model
2. Network model
3. Relational model

4.3.5.3. Terminologies used in RDBMS

- Relation
- Domain
- Tuples
- Attributes
- Cardinality
- Degree
- Views
- Keys

4.3.5.4. Creating a query in the query design option

You can create a query using the query design option in the create tab on the ribbon. You can easily design query according to your requirements.

Running a query -

After creating a query using the query design option, you can run a query by selecting run option from results group in the design tab on the ribbon.

Query wizard -

4.3.5.5. Creating a form using form wizard

A form is a database object that represents data in effective manner. Using forms you can easily view tables in a database. You can create forms to make your data

attractive and easy to understand. Ms Access provides various options using which you can create forms quickly. You can create a form using form wizard. Using this wizard you can add fields of your choice from one or more tables or queries in the form. You can group and sort the fields that you have added in the form.

4.3.5.6. Reports

Report is a predefined or user-defined format to display specific data stored in a database. Report is used to format, summarize, and present data in attractive format. Report helps you to view reports in a printable format.

4.3.5.7. Import

You can bring the data from a Microsoft Office Excel 2007 workbook into Microsoft office Access 2007 in many ways. You can copy data from an open Worksheet and paste it into an access datasheet, import a worksheet into a new or existing table, or link to a worksheet from an access database.

MS Outlook

Microsoft outlook is a personal information manager from Microsoft, available as a part of Microsoft office suite. Although often used mainly as an email application, it also includes a calendar, task manager, contact manager, note taking, and journal and web browser.

Practical Activity

MS Word

Creating a new document:

To create a new document, click the Microsoft office button and click new. You will notice that when you click on the Microsoft office button and click new, you have many choices about the types of documents you can create. If you wish to start from a blank document, click blank. If you wish to start from a template, you can browse through your choices on the left, see the choices on centre screen, and preview the selection on the right screen.

Adding text in a document:

A) Start a new document

B) Press appropriate keys to add text at the current location of the blinking Cursor.

Editing text:

A) Select the text you want to copy

B) Click the copy button under the clipboard group of the home tab

C) Place the mouse cursor at the location where you want to paste the copied text

D) Click the paste button under the clipboard group of the home tab.

Saving a document:

To save your file and close word, follow the instructions below:

1. Click on the office button.
2. Click on save or save as.
3. Specify the correct folder in the save in box (at the top of the window). Choose desktop to save in.
4. Name your file by typing your name in the file name box.
5. Click on save. The save window will close. If this is a file that you have already saved and wish to save in another location or by another name, choose saveas.

MS Excel

Entering data in a worksheet

You can enter data in a worksheet in two ways, manually and automatically. In manual entry, a user enters data by typing it manually from the keyboard, while in automatic entry; the required data is imported from access or the internet. Perform the following steps to enter data manually in a worksheet.

Open a workbook

Click the cell in which you want to enter text. Selected a1. Type the required text in the selected cell. Type rolls no. Click the cell b1 and type name. Repeat the process to enter data in required cells. Now let us enter numeric data in the worksheet. Perform the following steps to enter numeric data worksheet.

A) Select the cell in which you want to enter numeric data. Selected a2

B) Type the numeric data you want in the selected cell. Type 1 in a2

Similarly you can type all numeric data.

Creating a chart

Open a workbook whose data you want to represent in a chart. For example use sales data. Select the data for which you want to create a chart. Select an appropriate chart type under charts group in the insert tab. A drop down list appears. Select a chart from the drop down list. The selected chart is created on the worksheet.

MS Power point

Adding text to presentation

In a presentation, text may serve the purpose of title, subtitle or content of a slide. After adding text you can format the text to make it more readable and attractive. You can add text by using a placeholder as well as text box.

Adding videos to a presentation

A) Select the slide in which you want to insert a video clip.

B) Click the video button under the media clips group in the insert tab. A drop down list appears.

C) Select the video from file option in the drop-down list. The insert video dialog box appears.

D) Browse the location where the video is saved on your computer. Select the video from the location.

E) Click the ok button. The desired video is inserted in the current slide

Moving a slide -

Sometimes you might want to change the sequence of the slides. If you want to re-order the slides or change slide positions, you can do so by moving the slides to desired positions. Perform the following steps to move a slide.

A) Select a slide that you want to move from the slide pane.

B) Drag the slide to the desired location.

Deleting a slide -

You can delete unwanted slides from a presentation. Perform the following steps to delete a slide.

A) Select the slide that you want to delete from slide pane.

B) Press the delete key. The selected slide will be deleted.

Saving a presentation

A) Click on office button.

B) Click on save option. Save as dialog box appears. Navigate to the location where you want to save the presentation. Give a name to the file and click on save button.

Setup a slide show

A) Click on setup slideshow button on setup group of slide show tab. Set

Up show dialog box appears.

B) You can choose show type; show options etc from this dialog box.

C) Click ok to save the set up.

MS Access

Creating a query in the query design option

A) Select the query design option under the 'other' group of create tab. A new query named as query1 appears, in the query design window and displays the show table dialog box

B) Select the table of your choice from 'show table' dialog box. We selected marks table.

C) Click the add button.

D) Click the close button to close the show table dialog box. Selected tables appear in the upper section of the query design window.

E) Drag the desired field from table and drop it in query design grid of the query design window. In the example we dragged roll no and marks. We enter criteria in roll no as '=1'

Creating a form using form wizard

A) Select the form wizard option under the forms group in the create tab. Form wizard appears showing the selected table by default. You can also select any table of your choice from the table/queries list box.

B) Click the down-arrow button under the table/queries list box. A drop down list appears.

C) Select the table using which you want to create form.

D) Select the desired fields from available field's list box.

E) Add them to selected fields using the buttons provided. Selected fields will be added to selected fields.

F) Click the next button. A page appears in the form wizard prompting you to select the layout of the form.

G) Select the radio button to select the layout for the form.

H) Click the next button.

I) a page appears in form wizard asking you to enter the style of the form. For example select office. Click next button.

J) A page appears in form wizard asking you to enter the title of the form. In addition using this page you can select the options to view or enter the information in the form, or modify the form design respectively.

K) Type the desired title under what title do you want for your form? Text box.

L) Click finish button. A form is created in the selected layout.

M) Click next button to view the next record.

Assessment Activities

1. Conduct a seminar on the use of MS Office software in catering restaurant operations.
2. Type a report on various vegetables and meats used in cooking with the help of bullets and numbering options and other paragraph formatting options.

3. Type a recipe of a popular dish and the method of preparation in Ms Word.
4. Create an MS Word document about the facilities of a restaurant you know, that contains character and paragraph formatting and bullets and numbering
5. Write a leave application letter in MS Word to the manager of a restaurant
6. Create a ms word document, about a memo to a staff of a restaurant about the importance of punctuality
7. Prepare a resume of the student in MS Word to apply for a restaurant vacancy.
8. Create a BOT in MS Word document.
9. Create a bill format in an MS Excel.
10. Enter the sales of dishes in a restaurant of the month, calculate total sales and prepare a list of name of dishes that sells most in that restaurant in MS Excel format.
11. Prepare an attractive chart on percentage of dishes sold in the restaurant in last 3 years in MS Excel format.
12. Prepare an MS Excel sheet on the raw materials purchased, consumed and stock in hand for a particular period.
13. Create a function prospectus in MS Word or MS Excel format to take banquet booking.
14. Prepare an MS PowerPoint slide show in an attractive manner about the five star hotel chains operating in India
15. Create an MS PowerPoint slide show on banquet menu for different occasions.
16. Prepare an MS PowerPoint slide show about the job opportunities in catering and restaurant industry and higher study options.

TE questions

1. Distinguish between DBMS and conventional system of data management
2. Office automation has changed the style of office functions. Do you agree? List out any 4 advantages.

Unit - 4
LINUX AND OPEN OFFICE

Introduction

In this chapter we are going to discuss GNU LINUX operating system – free software. The free software foundation, a nonprofit organization, was started in 1985 by the computer programmer Richard M Stallman. This organization comprises of talented software engineers and programmers voluntarily committed to the idea of writing and sharing of software with each other for the welfare of humanity. Today any one can be part of it and benefit from this community.

Learning Outcomes

The learner :

- Distinguishes between free and property software.
- Lists the salient features of Linux
- Understands the features of Open office writer.
- Understands the various features of Calc
- Identifies important features of impress

Concepts

4.4.1 History of Linux

History of Linux began in 1991 with the commencement of a personal project by a Finnish student, Linus Torvalds, to create the kernel of a new free operating system. It is developed using C programming language. There are 16 million lines of source code under GNU public license that was released in 2013. The operating system developed based on this kernel is called GNU Linux or simply Linux.

4.4.1.2 Advantages of GNU Linux

- It is a free software
- Highly secure – less prone to errors and virus attacks
- User friendly-GUI provides easy interaction
- Offers multi user environment
- Portable – a live CD or a Pen drive is necessary to work on
- Highly reliable-rarely hangs or crashes

4.4.1.3 Linux file system structure

File is an important concept in an OS. It refers to the information that are stored permanently in the secondary memory (e.g. hard disc) of the computer. Files that are related (system files, personal files, etc.) are kept in separate directories or folders. Here a directory/folder is a collection of files. A folder/directory can also have sub folders/sub directories within them.

Linux provides a standard file structure in which system files/user files are arranged in a hierarchical manner called hierarchical file system.

There is no drive C: or D: etc in Linux. All directories are under a parent directory "/", which is the root directory.

4.4.1.4 Linux kernel

Kernel is the heart of the Linux operating system that provides basic services for all other parts of the operating system. The kernel is the central module of the operating system. The Linux kernel was initially conceived and created in 1991 by Finnish computer science student Linux Torvalds. It is a computer programme that manages input/output requests from software. The Linux kernel has received contributions from thousands of programmes, which helped in development of Linux has a complete OS.

4.4.1.5 Login and logout in Linux

When we sit down at a Linux computer we will see a login screen with user names and there will be a space for entering password. Select user name, enter your password, and press enter key. In Linux every user needs a user name and password to work with the system.

A user has to logout when his work is over. It is not recommended to switch of the system without login out from the system. Doing so, much damage to the OS or the files that were in use.

There is a logout command in the system menu at the top of the screen. After selecting the command, you might have to click a button to confirm the action.

4.4.1.6 Linux commands

Learning Linux commands is one of the main concerns for any Linux beginner. Although, the improvement in GUI has made it possible to accomplish almost everything with a graphical interface similar to windows OS.

Some of the important Linux commands are given below:

/s : this command lists files and directories in the current folder

Cat: this command can be used to create a new file and display the contents of a file

cd : (change directory) this command is used to change the current directory. It is similiar to the CD and CHDIR commands in MS –DOS

chmod : this command will let you set permissions who can read /write/execute on a file.

In the Linux world users are technically known as

- 1. Owner 2. Group 3. World (other).
- The permissions allowed are
- 1. read 2.write 3. Execute.

cp : this command is used to copy files and directories

mkdir and rmdir : the mkdir is the command used for creating directories that is similar to md or mkdir command MS-DOS.

The rmdir command deletes an empty directory

wc : (word count) this command is used to find number of lines, number of words and number of bytes in a file.

who :this command can list the names of users currently logged in, their terminal, the time they have been logged in , and the name of the host from which they have logged in .

grep : this command is used to search for the occurrence of a given string in a file. By default, grep displays the matching lines. Use grep to search for lines of text that match one or many regular expressions, and outputs only the matching lines

write : this command allows you to communicate with other users, by copying lines from your terminal to theirs.

mv : this command is used to move files around or to rename them

more : this command is used to view (but not modify)the contents of a text file one screen at a time(terminal pager).

date : this command is used to display the current date and time or set the system date/time.

find : this command is used to locate files on a Linux system. You can search for files by name, owner, group, type, permission, date, and other criteria.

vi (text editor): it is the visual based text editor that comes with Linux distribution

General commands

vi file name: to open a file for editing

ZZ or :wq : to exit vi and save changes

q! : to exit vi without saving changes

[esc]: to enter vi command mode

Editing commands

x: delete the character that is currently under cursor

dd : delete the lines that is currently under cursor.

dxd : deletes x lines starting with the one currently under the cursor

nx : deletes n characters starting with the one currently under the cursor

x>>: indents x lines to the right starting with the one currently under the cursor

x<<: indents x lines to the left starting with the one currently under the cursor

4.4.2 Open office writer

4.4.2.1 Introduction to Open Office

Open office.org (Ooo), commonly known as open office, is an open-source office suite. It was an open sourced version of the earlier star office, which sun micros system acquired in 1999 for internal use. Sun open-sourced the software in July 2000 as a competitor to MS office.

4.4.2.2 Apache open office

Apache open office is the leading open source office software suite for word processing, spread sheets, presentations, graphics, databases and more. It is available in many languages and works on all common computers. It stores all your data in an international open standard format and can also read and write files from other common office software packages. It can be downloaded and used completely free of charge for personal and commercial purpose.

4.4.2.3 System requirement

Open office requires minimal hardware. Size of installation package is less than 140MB. Resources required for installation are 256MB of RAM, 650MB of hard disc space and a monitor with 1024x758 or higher resolution with at least 256 colours. It will work on all windows and Linux version

4.4.2.4 Starting open office writer

In the latest UBUNTU distributions it is accessible from applications menu on the panel. From this select Office and get all Open Office utilities such as Writer, Calc, Impress, etc.

The following tasks can be performed by using Open Office

- Entering text
- Editing text
- Formatting a writer document
- Text selection using key board
- Text selection using mouse
- Moving and copying text
- Find and replace text
- Inserting and deleting page breaks
- Manually running spell checker
- Thesaurus
- Page setup
- Print preview
- Print command
- Creating tables
- Adjusting column width and row height
- Sorting table data
- Headers and footers
- Page numbering
- Insert footnotes
- Editing images
- Resizing the image
- Positioning graphics within the text
- Exporting files to other formats
- Importing data and other documents
- Templates
- Mail merge

4.4.3 Advanced features of open office writer

4.4.3.1 Character Formatting

The character command in the format menu brings the font /character dialogue window. It has five tabs namely font, font effects, position, hyperlink and background.

Most of the formatting related to phone can be set through this dialogue window.

4.4.3.2 Background colour

This tab brings the colour palette from which we can select a suitable colour for text background

4.4.3.3 Paragraph formatting

Clicking paragraph command in the format menu brings the paragraph dialogue. The paragraph dialogue window has seven tabs such as indent and spacing, alignment, text flow, etc.

4.4.3.4 Bullets and numbering

Presenting your data in lists makes your document simple and elegant. For this Open Office writer has a utility called bullets and numbering? This command is available in the format menu. Clicking this command brings the bullet and numbering dialogue.

4.4.3.5 Indents

Indentation determines the distance of the paragraph from either the left or the right margin. Within the margins, you can increase or decrease the indentation of a paragraph or group of paragraphs. You can also create a negative indent (also known as an out dent), which pulls the paragraph out toward the left margin. You can also create a hanging indent, in which the first line of the paragraph is not indented, but subsequent lines are indented.

4.4.3.6 Creating an index of a document

Index of document facilitates quick reference of contents in a document. Creating index of document is a facility, in Linux, used to create table of contents related to a document. It also helps readers to refer headings and sub headings quickly. In most of the software and text books, index is created using this facility.

4.4.4 Open office calc

4.4.4.1 Open Office Calc

It is an electronic spread sheet application that you can use to calculate, analyze, and manage your data. It comes with a very user friendly interface that enables you to learn and use it easily. Let us examine the basic features of calc:

Calculations, what if calculations, database functions, arranging data, dynamic charts, opening and saving Microsoft file formats, calc file format

4.4.4.2 Selecting cells

Text, numbers, formulae and references to other cells can be entered in cells. Prior entering or editing information, the cell or a cell range must be specified spread sheets;

- To select a cell to enter information, left click on it.
- To select the entire column , click on the column header; to select the entire row, click on the row header

4.4.4.3 Cell formatting

The content of a cell, appearance of it borders and number format depend on format applied to a cell.

Formatting can be applied to;

- A number , the result of a formula
- Font applied to the content of a cell
- Alignment for cell contents
- Cell borders and cell background

Cell formatting can be applied best in the dialogue box format cells commands most frequently used are specified on formatting tool bar.

4.4.4.4 Inserting rows/columns

To insert new row

Step 1 : select a cell in the row above which a new row is needed

Step 2 : execute the menu command insert – to insert new column

Step 1 : select a cell in the column above which a new column is needed

Step 2 : execute the command insert – column

4.4.4.5 Built in functions

Spread sheet application typically have built- in standard functions for mathematical, logical, statistical, date and time, financial and other calculations and functions argument or several arguments specified in brackets such as cell addresses, numbers, text, constants and other values or functions.

Example : Functions with a single argument- this example adds all values of cells C1 to C22

4.4.4.7 Charts in calc

A chart is a graphical presentation of numerical data. When the corresponding data in cell are changed, the chart also changed.

After a chart is inserted or selected in a spread sheet with a double left click the tool and menu bar of open office. Org calc changes to show chart buttons and commands

4.4.4.8 Addressing cells

Every cell in a calc work book has a unique address. Two kinds of addresses are available for cells- relative and absolute

Example:

Cell in column B and row 5 is addressed as B5. This is called relative referencing. The address SBS5 is an absolute reference

The range of cells in blue colour is relative referencing is B2:B5. In absolute referencing the address is SBS2:SBS5

4.4.4.9 Data range

A data range is a group or block of cells in a work sheet that have been selected or highlighted. When cells have been selected they are surrounded by an outline or border

4.4.4.10 Work sheets

By default in a calc work book, there are three work sheets. We can add sheets and can delete existing sheets.

4.4.4.11 Auto fill

Auto fill automatically generates a data series based on a defined pattern

4.4.4.12 Filter

Filters and advanced filters allow you to work on certain filtered rows (records) of a data range.

Example: Let us take the case of score sheet of students in your class prepared in calc. Suppose we wish to find all students or number of students who scored

A + grade for a particular subject. In such situation we can use filter.

4.4.4.13 Data sorting

It is easy to sort data in ascending or descending alphabetical order. Interrelated data are entries in columns on a single row. When data are sorted in a column, the entry row moves, but the interrelation is preserved.

Successive sorting in several columns is also possible. E.g. first sorting alphabetically by the first column and then sorting the obtained result again by the second column. Open office.org calc allows successive sorting by three columns.

4.4.4.14 Totals and sub totals

You can use calc to find subtotals or totals for portions of your work sheet data. For example, in a work sheet with sales data for three different products categories, you can first sort the products by category, and then select all the cells that contain data and open subtotal dialogue box (data menu, subtotal command).

4.4.4.15 Protection

In calc you can protect sheets and the documents as a whole. You can choose whether the cells are protected against accidental changes , whether the formulas can be viewed from within calc, whether the cells are visible or whether the cells can be printed

4.4.5 Open office impress

4.4.5.1 Important features of impress

- Easy-to-use drawing and diagramming tools –a complete range to spice up your presentation.
- Park your most commonly used drawing tools around your screen ready for single –click access.
- Slide show animation and effects bringing your presentation to life
- Font works provides stunning 2D and 3D images for text. Create life like 3D images with astounding speed and response
- ODP standard- save your presentations in open document format presentation, the new international standard for office documents
- You can access your presentations from any open document compliant software.
- PPT and PPTX support- of course, you are free to import your Microsoft power point presentations, or save your work in PowerPoint format for sending to people who are still using micro soft products.
- Flash (SWF) support : Built-in ability to create flash versions of your presentations

4.4.5.2 Bringing different objects into slides

In impress objects can insert in slides and perform various object related tasks such as:

- Selecting objects
- Copying objects
- Deleting objects
- Flip objects
- Rotating objects
- Convert objects
- Arrange objects
- Grouping objects
- Aligning objects

4.4.5.3 Adding text

The text box tool in the drawing tool bar allows users to insert text in slides. To add custom text in your slides, do the following:

Step 1 : Click on the text tool on the drawing tool bar

Step 2 : Click on the slide and drag to draw a box and release the mouse when finished

Step 3 : the cursor appears in the text book started blinking

Step 4 : Type the text and when finished click outside the text box to deselect it.

4.4.5.4 Different views

Impress supports five different views such as:

- Normal view
- Outline view
- Notes pages view
- Handouts view
- Slide sorter view

4.4.5.5 Adding new slides to your presentation

When creating a presentation you need to add new slides one by one as and when required. To add a new slide after a particular slide do the following:

Step 1 : click to select slide after which you add a new slide

Step 2 : choose insert – slide or click slide button on the presentation tool bar

4.4.5.6 Background

To access the background color options you must access page setup. Right click on a blank area of the slide and choose slide – page setup.

Alternatively, you may choose format – page to access page setup.

4.4.5.7 Slide transition

Once you created all slides it is necessary to give transition effects and animations for their attractive rendering on screen to catch viewer's attention.

4.4.5.8. Animating objects in a slide

You can apply preset animation effects to objects on your slide

4.4.5.9 Watching slide show

Once you finish developing the entire slides in the presentation or completed a particular slide, it is necessary to check how nicely it plays on the screen.

Assessment Activities

1. Conduct a seminar on the use of Linux and Open office software in catering restaurant operations
2. Type a report on various vegetables and meats used in cooking using bullets and numbering options and other paragraph formatting options.
3. Type a recipe of a popular dish and the method of preparation in Open Office Format.
4. Create an open office writer document about a restaurant you know, that contains character and paragraph formatting and bullets and numbering
5. Write a leave application letter in open office writer to the manager of a restaurant
6. Create a writer document about a memo to staff of a restaurant about the importance of punctuality
7. Prepare a bio data of the student in open office writer to apply for a restaurant job
8. Create a KOT in writer document.
9. Create a bill format in a calc sheet.
10. Enter the sales of dishes in a restaurant of the month, calculate total sales and prepare a list of name of dishes that sells most in that restaurant in calc format
11. Prepare an attractive chart on percentage dishes sold in the restaurant in last 3 years in calc format
12. Prepare a calc sheet on the raw materials purchased, consumed and stock in hand for a particular period
13. Create a function prospectus in calc or writer format to take banquet booking
14. Prepare an Impress slide show in an attractive manner about the five star hotel chains operating in India
15. Create an Impress slide show on banquet menu for different occasions.
16. Prepare an impress slide show about the job opportunities in catering and restaurant industry and higher study options.

TE Questions

1. Free software foundation is formed by :
   a. Charles Babbage c. Richard M Stalman
   b. Linus Torvalds d. Mark Zukkerberg
2. Free software concept has changed the attitude of users on propriety softwares. Compare between the free software and propriety software

Unit - 5

INTERNET AND MALAYALAM COMPUTING

Introduction

A computer networking is a group of interconnected computers. In other words a computer network is a set of different computers connected together using networking devices such as switches and hubs. The computer may be linked through cables, telephone lines, radio waves, satellites or infrared light beams. In this chapter we discuss internet connectivity, worldwide web and Malayalam computing etc.

Learning Outcomes

The learner :

- Identifies the need of network
- 4.5.2. Identify different connectivity devices
- Explain the concept of web page and website
- Describe the benefits of e mail
- Identify basic HTML tags
- Familiarize with Malayalam computing concepts
- Comprehend the ethical and social issues related to information systems

Concepts

4.5.1.1. Introduction to computer networks

Computer network is a set of different computers connected together using networking devices such as switches and hubs. The computer may be linked through cables, telephone lines, radio waves, satellites or infrared light beams Network can be classified as local area network (LAN), metropolitan network (MAN), wide area network (WAN)

4.5.1.2. Lan Topologies

The physical arrangements of computers in a network are called Topology.

There are following topologies.

1. Bus topology- In this topology, there will be a backbone cable. All computers are connected to this cable.
2. Star topology- In star topology, all the computers are connected to central device. All the data which are sending across the network will be passing through the central device.

3. Tree topology – The shape of tree topology network is similar to an inverted tree with the central root branching and sub branching to the extremities of the network.
4. Ring topology- A ring topology is a computer network in which devices are connected in a circular shape.

4.5.1.3. Protocols

Protocols are rules and procedures which make communication among various computers on any network. So protocol is like language used to make two computers talk to each other.

Examples are:

- TCP/IP (transmission control protocol/ internet protocol)
- UDP- regarded as connection less and unreliable transport protocol.
- Application Level Protocols
- Hyper Text Transfer Protocol (HTTP) – Basic protocol used in world wide web (www)
- File Transfer Protocol (FTP)
- Simple Mail Transfer Protocol (SMTP)
- Network News Transfer Protocol (NNTP)
- Simple Network Management Protocol (SNMP)
- Dynamic Host Configuration Protocol (DHCP)
- Domain Name System (DNS)

4.5.1.4. Connectivity devices

Connectivity devices are devices used to make physical network connections. Various connectivity devices are the following:

- Repeater
- Switch
- Router
- Firewall
- Hub
- Bridge
- Gateway

4.5.1.5. Windows 7 Firewall Settings

A Firewall can help prevent hackers or malicious software [such as worms] from gaining access to your computer through a network or the internet. A firewall also helps stop your computer from sending malicious software to other computer. You can customize settings windows firewall.

4.5.2. Internet and e-mail

4.5.2.1. History of internet

The internet started as a small network through a project by the department of defense, USA in 1970s.This network is called ARPANET[Advanced Research Project Agency Network]. In 1984, Military network is separated from ARPANET to form MILNET which is used by American military only. ARPANET was thereafter used for scientific research and information sharing. Later several other networks merged with ARPANET form a large network which is now called internet.

4.5.2.2. Connecting computer to internet

When we want to connect our computer with internet we need certain hardware and software requirements. They are given below.

- A computer with a network internet card [NIC] and an operating system that supports networking
- A modem
- A telephone connection wired or wireless.
- An internet account provided by an internet service provider [ISP]
- Application software like, browser to access the resources in the internet
-

4.5.2.3. Types of internet connections

1. Dialup connection
2. Wired broadband connection
3. Wireless broadband connection

4.5.2.4. World Wide Web [www]

www is a system of interlinked web pages accessed via internet to get information. It is the huge online storage of information in the form of web pages. A web page is a file that consists of data and some Hyper Text Makeup Language [HTML] tags which is used to present the data using browser software. These web pages are accessed using browser software by giving request to a web server. A web site is a collection of web pages created to a particular organization in public web server. The first page displayed when we access a web site is called its Home Page.

4.5.2.5. Web browser

A web server is a software application which is used for retrieving, presenting, and traversing information resources on the World Wide Web. It is represented by an address. This unique address is called Uniform Resource Locator [URL]. The major web browsers are Mozilla Firefox, Google Chrome, Internet Explorer, Opera and Safari. Traversing through the web pages of World Wide Web is called Web Browser.

4.5.2.6. Search engines

A web search engine is a software system that is designed to help people to search for information on the World Wide Web. Some of the search engines are Google, Bing, Yahoo, etc.

4.5.2.7. E MAIL [Electronic Mail]

It is a method of sending messages over the internet instantly. Email can carry files with them, like documents, photos, music files, video files etc as attachments. The web site that provides free email account is www.gmail.com, www.yahoo.com, www.rediffmail.com,www.hotmail.com, etc.

4.5.2.8. Creating and using free email account with Gmail

Students can create free Gmail account by using Google websites.

4.5.3. Web page designing HTML

4.5.3.1. Starting with HTML

A HTML page can be created using a simple text editor. We can use simple editors like Text pad, Note pad etc. After opening a new file type html code and save it with the extension .html or .htm. The saved file can be opened using any browser. A HTML document is created using tags and their attributes.

4.5.3.2. Attributes of <html >tag

Dir - specifies direction of the text with values ltr [left- to-right] or rtl [right to left]

Lang – specifies the language used.

The following tags are used in HTML:

<HEAD>

<TITLE>

<BODY>

Attributes of body tag: Background, bgcolor, text

Specified colour

Heading tags

<HR> tag

<FONT>tag

Representing reserved characters in HTML

Inserting comments

Lists

Type

Start

Inserting images

Creating links

Creating tables

Frame set

Form

Form controls

Attributes of input tag

4.5.4. Malayalam computing

4.5.4.1. Malayalam through computers

Malayalam computing aims at strengthening Malayalam language, making use of ICT. It tries to create a Malayalam web portal for every panchayat in Kerala; which would include details such as local, natural, human resources, local economy, local industry and services.

4.5.4.2. Free software and language computing

There are many new profit organizations working to achieve the goals behind Malayalam computing. The Malayalam font "karthika" is developed by Microsoft. Some organizations developed free software products which are superior to software giants. If the language software is not free, it will not be possible to update and modify it and we have to buy new versions of the same.

4.5.4.3. Malayalam and technology

Computer recognizes binary numbers 1 to 0. So each character input is represented by using 8 bit number. So the characters will be limited for languages such as Chinese and Malayalam, as they represent 900 to 1000 characters. So it is important to use Unicode, i.e., assign unique codes to all alphabets in Malayalam.

4.5.4.4. Malayalam digital technology

Nowadays, Malayalam usage in computer world is increasing and there are lot of typing software such as varamozhi, swanalekha, anjali, meera, rajana, etc .Malayalam web sites are also getting popular. Malayalam graphical user interface are being developed in GNU/LINUX.

4.5.4.5. Unicode

Unicode is the universal character encoding standard used for representation of text for computer processing. It is destined to replace single and multi- byte characters sets which are limited in size and are multilingual environments. Unicode consists of a set of more than 109000 characters.

4.5.4.6. Malayalam using transliteration

Google transliteration IME is an input method which allows users to enter text using a Roman keyboard. This will convert the word into its native Malayalam scripts.

4.5.4.7. Malayalam word processing

C-DAC has developed mainly two multi lingual word processers.

1. ISM 2000 office
2. Leap Office

4.5.4.8. Downloading and installing Malayalam fonts

There are a number of Malayalam fonts available in internet. They are classified as .otf, .ttf,.fon, etc

4.5.4.9. Installing fonts in windows

4.5.4.10. How to enable Malayalam in web browsers

It is possible to enable Malayalam in web browsers like Internet explorer and Firefox.

4.5.4.11. Malayalam in ubuntu

It is able to inscript keyboard layout of Malayalam in Ubuntu.

4.5.4.12. Malayalam keyboard and typing

Open a new open office writer and Malayalam text can be typed using the inscripted keyboard listed.

4.5.5. Ethical and social issues in information systems.

Information systems give opportunities for invading your privacy and reckless use of that information in a wrong way. Cyber crimes and abuse, spam mailing, etc create complicated issues in information system.

Assessment Activities

Activity - 1

Power point presentation

Teacher demonstrate a PPT to stimulate the concept of students on networks. Responses are elicited to arrive at the concept and its classification. Based on the responses teacher consolidated the proceedings

- Networks
- Types of networks (LAN , WAN, MAN, Internet)

Activity - 2

Seminar

Conduct a seminar on the internet applications, its advantages and limitations. For this learners are grouped into five. Support the group with enough materials and group performance are observed and evaluated. Groups are required to submit a seminar report.

Activity - 3

Case Study

Students are given with handout containing a case.

Case

India affected by "BIOAZIH"- Trojan -…..

Press trust of India on 14-05-2015

Indian cyber space has been threatened by malicious software that attacks and alters cyber user's personal data. The computer emergency response team of India has identified the malware and named as BIOAZIH.

On completion of reading the teacher put forth the given discussion points.

- Name the matter discussed.
- How it affects the computer
- How can we protect the system from this threat?
- List down examples.

Eliciting the responses to arrive at the concept of virus and antivirus.

Sl. No	Attribute	Yes/No
1	Participation	
2	Idea Sharing	
3	Clarity	
4	Writing on activity log	
5	Require Assistance	

TE Questions

1 List out and explain any three types of computer networks

2. Is internet usage a boon or a curse? substantiate

3. Internet is the network of network – comment

4. List out some anti VIRUS.

5. Manager of your organization asks you to pass a message together with a video. You decides to send an email. List any four advantages of email

5. Meera wants to connect her computer with internet. List out the hardware and software needed.

6. Lampard Pvt Ltd , a Food processing co. introduces a new product in the market and wishes to inform this to its hundred loyal customers through letters. Can you suggest the best mailing process for this using MS Word? Explain the steps involved in this process.

List of practicals

- Identification of different parts of a computer using a damaged system
- Connecting port and devices and uses and functions of various devices
- Net banking and online booking
- Open bank account with net banking facility
- Practice online booking of train ticket bus ticket, air tickets, etc.
- Practise fund transfer between accounts
- Browse internet for detailed application of it
- Identification of different components inside the CPU used for booting
- Install and uninstall window 7
- Installation of DTP software
- Installation MS office
- Practice data transfer between computers and devices
- Developing typing skill through typing tutorials
- Open edit, save and close a text file
- Formatting text font, paragraph, bullet, columns, tabs, drop case, text direction, change case, background, insert box , insert picture and print the created text file
- Practice mail merge
- Use find and replace
- Formatting tables
- Open edit ,save and close an excel file
- Formatting cells, formatting text, insert rows and columns
- Functions- logical ,average, sum and round
- Creating chart and diagrams- bar diagram, histogram and pie diagram
- Data filtering , sorting ad creating new work sheet from filtered data
- Page set up and printing an excel file
- Create ,edit , save , add effects and animation to power point presentation
- Create MS access file by using query wizard
- Application areas open office writer- practice letters, statements, display government orders, etc.
- Open, edit, save and close a Calc file
- Functions – logical ,average, sum, and round
- Formatting cells, formatting texts, insert rows and columns
- Creating chart and diagrams
- Page set up and printing open office Calc file
- Create edit, save, add effects and animation to open office impress
- Malayalam typing practice
- Open an email account and use it for communication

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