**Q. What are the application areas/uses of computer?**

**Ans.** The application areas of computer are:- fghftutfguy7

**1. Bank –** Almost every bank uses computers to keep the records money transactions and financial documents.

**2. Communication –** Communication has become very easy and simple through internet and email. Through email we can send message in a split of seconds to anybody in any part of the world.

**3.** **Business –** Today, computers can be found in every store, supermarkets, offices etc. One can buy and sell things online and bills & taxes can be paid online. Business transaction takes place easily, accurately and records can be stored.

**4.** **Medical Science and Health care-** Diseases can be diagnosed and cured with the help of computers.

**5.** **Education –** Computers are used in classrooms by teachers to teach and maintain records. Online learning and assessments are increasing day by day.

**6.** **Media –** Almost every type of editing and audio-visual composition, special effects for action and science fiction movies are created on computers.

**7.** **Travel and Ticketing** **-**  With the advent of computers, ticketing and reservation have become an easy task. We can check seat availability, PNR status and can also book hotels online.

**8.** **Weather Predictions –** Weather forecasting now relies on computers that take atmospheric factors into account.

**9.** **Sports -**  In cricket, third umpire decision, in which computer recording is seen, is reached to accurate and fair decision with the help of computers. Computers also help sportsman to practice and improve his skills.

**11.** **Social Media -**  The spreading of an idea or of news occurring somewhere in the world is now possible through social sites on the internet. Sites such as Facebook, Twitter, Youtube and LinkedIn allow people to share ideas on news, products and services.

**12. Scientific Research-** Scientist uses computers to view images from space and to publish information on their recent research.

**13. Government-** Computers are also used for providing services to citizens by the government.

**14. Publishing-** Computers are also used to design any type of publication such as magazines, books, newspapers, e-books etc.

**15. Daily Life-** We operate washing machines, microwave oven etc. using software. We can store our information, important work, contacts, appointments on the computer.

**Q.4 Describe CPU?**

**A.CPU** is Central Processing Unit. It is the most important processing device. It is the brain of the computer. It processes the input to perform calculations and produce output.

**Q.5 Describe motherboard?**

**A.** Motherboard is a large circuit board that connects input, output and processing devices. It provides pathways that allow data to pass through these various components. It also contains a chip that determine how, when and where data can flow through the computer. The devices like expansion cards, video cards, chip etc. are plugged into the motherboard.

**Q.6** **Describe Operating System ?**

**A.** Operating System is a software that controls and manages all the parts of computer system that are connected to it. It acts as interface that helps you to interact with the computer. Examples Windows, Linux, Android.A etc.

**Q. 7 Describe Programs and Data ?**

**A. Programs**, also called applications, are used to perform various tasks such as writing letters, doing calculations or sending e-mail messages. Examples Microsoft Office Word, Presentation are programs.

 **Data –** Data is the text, graphics, audio or video that is provided as input to the computer.

**Q. 8 Describe** **Network and its terminologies?**

**A.** Interconnection of two or more computers is called a network. Network is used to share information or different resources like files, software, printer etc. A typical network has the following three components:-

 **Workstation –** A computer on the network that requests for information or resources is called a workstation or client.

 **Server –** A computer on the network that provides services to other computers is called a server.

 **Communication Channel –** Cables or wireless connections that are used to connect computers is called communication channel.

**Q. 9 Describe Internet?**

**A.** Internet is a collection of different networks that are linked to each other for information exchange. Internet is used to send information, files, search on any topic, buy and sell products, watch movies, send e-mail messages etc.

**Q. 10. Decribe Intranet?**

**A.** Intranet is a special type of network to communicate and share information within the organization. An intranet is similar to internet but is accessible only to authorized users of the organization.

**Session 2: Parts of a Computer System**

**Q. 11 Explain Different Parts of Computer System?**

A. The computer has various parts and each part performs a specific function. Following are the different parts of a computer system :-

**1. Input Devices:-** Input devices are used to provide information to a computer. Examples of input devices are- Mouse, Keyboard, Scanner, etc.

**2. Output devices:-** Output devices are used to get output or result from a computer after it performs a specific task. Examples of output devices are- Monitor, Printer, Speaker etc.

**3. Central Processing Unit and Memory:-** CPU is a device that interprets and runs the commands that we give to a computer. It is the control unit of a computer. It is also referred to as the processor. Memory is where information is stored and retrieved by the CPU.The three main types of memory are RAM, ROM and Flash Memory.

**Q. Explain different Input devices?**

**Ans. Mouse –** A standard mouse has left and right button. Left button is used to select items and right button is used to display commonly used menu items on the screen.

 **Keyboard –** A set of keys that resembles a keyboard on a typewriter. Keyboard is used to type text such as letters or numbers into the computer.

 **Microphone –** Microphone is used to record sound into a computer.

 **Scanner –** Scanner is used to transfer an exact copy of a photograph or document into a computer.

 **Webcam -** Webcam captures and send live pictures to other users.

 **Stylus -** Stylus is, similar to a pen, used to make selections and enter information by tapping on a touch sensitive surface. For example, stylus is used in PDA or tablet.

 **Trackball -** Trackball is a pointing device, like a mouse, consists of a ball that is rotated to move the pointer on a computer screen.

**Q. Explain different Output devices ?**

**Ans. Monitor-** It is used to display information in visual form, using text and graphics. It is like a Television.

 **Printer-** It is used to create a paper copy (hard copy) of whatever you see on your monitor.

 **Speaker / Headphone –** It is used to hear sounds. Speakers may either be external or built into the computer.

**Q. Explain different types of memory ?**

**A. RAM –** RAM is Random Access Memory. It is the main memory and allows you to temporarily store commands and data. The CPU reads the data and commands from RAM to perform tasks. It is volatile, which means it is available only while the computer is turned on.

 **ROM –** ROM is Read only Memory. It retains its contents even after the computer is turned off. It is non-volatile, or permanent memory that is commonly used to store commands, that checks whether everything is working properly or not.

 **Flash Memory –** It is a non-volatile memory that retains data even after a computer is turned off. Unlike in ROM, you can erase or modify stored information.

**Q. What are expansion cards. Explain its types?**

**Ans.** An expansion card is a circuit board that can be attached to the motherboard to add features such as video display and audio capability to the computer. It improves the performance of the computer and enhances its features. Types of Expansion Cards are:-

1. Video Card – It is connected to the computer monitor and is used to display information on the monitor.

2. Network Interface Card (NIC) – It allows a computer to be connected with other computers in order to exchange information.

3. Sound Card – It converts audio signals from a microphone to digital signals which can be stored as a computer’s audio file and vice-versa.

**Q. What are Storage Devices? Explain some common storage devices?**

**Ans.** Storage devices are used to store computer information. They can be divided into two types – internal storage devices and external storage devices.

**Some common storage devices:-**

**1. Hard disk –** It is a magnetic disk which is the main storage device in the computer. It can be external or an internal device.

**2. Floppy Disk –** A portable device that allows to store a small amount of data. A main disadvantage of using floppy disk is that it can be easily damaged by heat and dust.

**3. CD-ROM –** It is a portable storage medium that allows you to store 400 times more data than a floppy disk. It is less prone to damage. CD-ROM is Compact Disk – Read Only Memory.

**4. DVD-ROM –** It is also a portable storage device that can store huge amount of data. It is commonly used to store movies and videos.

**Q. What are Ports. Explain its types?**

**Ans.**A port is a channel through which data is transferred between input/output devices and processor.

Types of ports:-

1. USB port (Universal Serial Bus) – It is used to connect peripheral devices such as Mouse, Keyboard, Printer, Pendrive.

2FireWire port – It is used to connect devices such as Digital Camera. It is faster than USB.

3. Network Port – It is used to connect a computer to other computers to exchange information between the computers.

4. Parallel port and Serial Port - These ports are used to connect printers and other devices to a personal computer.

5. Display adapter – You connect a monitor to a display adapter on your computer. The display adapter generates the video signal received from a computer and sends it to a monitor through a cable.

6. Power – A motherboard and other components inside a computer use direct current (DC). A power supply takes alternating current (AC) from a wall outlet and converts into DC Power.

**SESSION 3: COMPUTER FUNDAMENTALS**

**Q. What is a computer system?**

**A.** A computer system is a programmable machine designed to perform arithmetic and logical operations to produce meaningful results in desired format.

**Q. Explain three main units of computer system?**

**A. A computer system is broadly divided into three units:-**

**1. Input Unit:-** Input unit helps the user to enter raw data and instructions into the computer system.

**2. Central Processing Unit:-** CPU performs the required operations as per given instructions.

**3. Output Unit:-** Output unit produces meaningful results in the desired format for the user.

**Q. Explain three parts of CPU?**

**A.** The CPU is divided into three parts:-

**1. Control Unit (CU) :-** It receives each and every instruction from user and coordinates between different parts to perform various operations.

**2. Arithmetic and Logic Unit (ALU) :-** It performs all the mathematical and logical calculations.

**3. Memory Unit:-** It is a temporary storage where small amount of data is stored while other operations are being performed.

**Q. Explain different parts of Memory Unit?**

**A.** The memory unit is further divided into two main components:-

**1. RAM**

**2. ROM**

**Q. What is BIOS?**

**A.** The essential instructions written and stored by the manufacturer to load operating system and take care of basic input/output operations is referred as BIOS or Basic Input Output System.

**Q. Explain data storage in computer system?**

**A.** In computer system, the data is stored in the form of Bits and Bytes. Bit or Binary Digit represented by 0 or 1 is the smallest storage unit. 08 bits combined together to form a single byte, which represent a single character. For example, “KVDL” need 4 bytes in the computer memory.

**Q. Represent units of computer memory in a table?**

**A.**

|  |  |  |
| --- | --- | --- |
| **Memory Unit** | **Relationship with Earlier Memory Unit** | **In Equivalent Bytes** |
| **Kilo Byte (KB)** | 1 KB = 1024 Bytes | 1024 |
| **Mega Byte (MB)** | 1 MB = 1024 KB | 1024 X 1024 |
| **Giga Byte (GB)** | 1 GB = 1024 MB | 1024 X 1024 X 1024 |
| **Tera Byte (TB)** | 1 TB = 1024 GB | 1024 X 1024 X 1024 X 1024 |

**Q. Write the capacity of following storage devices:-**

**1. Compact Disk (CD) =** 750 MB

**2. Digital Versatile Disk (DVD) =** around 4.5 GB

**3. Blue-ray Disk =** around 25 GB / 50 GB

**4. Pen Drives =** 512 MB to 32 GB

**5. Memory Stick =** 512 MB to 32 GB

**6. Hard Disk =** maximum 12 TB (developed till 2017)

**Q. Name the ports or sockets and the devices which can be connected with these ports and sockets?**

**1. Power Socket: -** for connecting power cable.

**2. Personal System 2 (PS2) Ports: -** for connecting Mouse and Keyboard.

**3. Universal Serial Bus (USB) Ports: -** for connecting USB devices like pen drives, mouse etc.

**4. Video Graphic Adapter (VGA) Ports: -** for connecting Monitor / Screen.

**Q. How can you set-up and start-up a computer system?**

**A.** Connect Monitor with VGA cable, mouse & keyboard with PS2 / USB cable and power on the CPU after connecting Power Cable.

The computer should display some messages from the manufacturer and then it should start the Operating System (OS) which is referred to as Booting Process. Once, the booting process is over, we can see the desktop- the first screen in the beginning, to allow us to choose and start the application of our choice.

**SESSION 4: TYPES OF COMPUTERS**

**Q. Explain different types of Computer.**

**Ans. 1. Desktop Computer -**  Desktop Computers are made up of individual components such as a monitor, a keyboard, a system unit and a printer. They are not portable and are generally placed on the surface of a desk or a table.

**2. Laptop Computers -** Laptop Computers are lightweight personal computers. Laptop Computers are smaller in size as compared to a desktop computer and designed for travel. They are also called notebooks. They are small and portable. They run on electricity or on batteries that can be recharged. They consume more power than desktop computers with a similar hardware setup.

**3. Handheld Computers –** They are used for specific everyday tasks such as managing personal data. These are smaller than laptops and provide fewer features compared to desktop or laptop computers. Cellular phones or digital cameras are based on handheld computers model.

 **4. Tablet Computers –** Tablet computers are fully functional computers that allow you to write directly on the screen by using a tablet pen. Tablet pen can also be used to perform mouse functions. So, they do not need a keyboard and a mouse.

**Q. Explain different factors that affect the overall performance of the computer.**

**Ans.** The factors that affect the performance of the computer are:-

1) **CPU speed –** The CPU speed is the rate at which the CPU can perform a task, such as moving data to and from RAM, or performing a numerical calculation. A computer with the faster CPU completes a task more quickly.

**2) Harddisk factors –** Speed and size of the harddisk play an important role when a program needs to process large volumes of data. Harddisks differ in storage capacities, speed of data storage and retrieval. If the speed of data retrieval is fast, the computer takes less time to start and to load programs.

**3) RAM -**  The computer uses RAM (Random Access Memory) to store the information that is currently in use. If the amount of RAM is large enough to hold all of the information in use, this can result in faster computer performance.

**Q. Explain different types of Productivity Programs and their uses?**

**A.** The different types of productivity programs and their uses are:-

**1. Word-processing and publishing programs:-** It is used to create and modify text-based documents. MS Word is a commonly used word-processing program. Publishing Programs are used to combine text and graphics to create documents such as brochures, greeting cards, books etc.

**2. Presentation Programs:-** It is used to present your information in the form of slides. We can add sound and pictures to these slides to make them more attractive and informative. MS Powerpoint is a commonly used presentation program.

**3. Spreadsheet Programs:-** It is used to create results, timetables, budgets, perform mathematical calculations, making charts and graphs etc. MS Excel is an example of spreadsheet program.

**4. Database Programs:-** It is used to store and manage data in an organized way. We can also create simple reports from the data we have stored. An example of Database program is MS Access.

**5. Graphics Programs:-** It is used to create and edit drawings. It is also used to enhance photographs. The Paint Program is an example of a graphics program.

**Q. What are Communication Programs? Explain different communication programs.**

**Ans.** Computers use special programs called communication programs that allow you to send and receive messages with other people in a digital format.

The different types of communication programs are:-

1. **E-mail –** E-mail is the exchange of messages from one computer user to another computer user. To send an e-mail message, you must have an Internet connection and an e-mail account. An e-mail account is similar to username@example.com where username is your name, @ is the at sign and example.com is the domain name. A domain name identifies the name and type of organization with whom you have an e-mail account. Sending and receiving e-mail messages is an instant way of communicating with anyone. It only takes a few seconds to send and receives an e-mail. Receiver of the e-mail may or may not be available at the time of receiving of the e-mail. E-mail is stored in his/her e-mail account inbox folder. He/She can read the e-mail at any time.

**2.** **Chat –** It allows you to send and receive messages immediately. Chat programs can be used to communicate with several people at the same time. When you are chatting with someone, the person on the other end receives the message and send the reply immediately. Unlike E-mail, in chatting receiver should be present at the time of chatting. Through chat, you can also talk to the person, this is called voice chat and another form of chatting allows you to see the person you are talking to, this is called video chat, a device called webcam is needed to do the video chat. A commonly used communication/chat program is Windows Live Messenger.

**SESSION 5 : USING A COMPUTER**

**Q. Write about the different keys of the keyboard.**

**Ans.** The keys of the keyboard is categorized into following:-

**1) Function Keys –** Keys labeled from F1 to F12 are function keys. We use them to perform specific functions.

**2) Special Keys –** Keys, such as Control (CTRL) , SHIFT , SPACEBAR, ALT , CAPS LOCK and TAB are special keys. The special keys perform special functions depending on when and where they are used. WINDOWS LOGO key is also a special key which is used to open Start Menu.

**3) Punctuation Keys –** It include keys for punctuation marks, such as colon (:), semicolon (;), question mark (?), single quotation marks (‘ ‘), double quotation marks (“ “ ).

**4) ENTER or RETURN Key –** This key is used to move the cursor to the beginning of a new line. It is also used to send commands and to confirm a task on a computer.

**5) COMMAND Keys –** Keys such as INSERT (INS), DELETE (DEL), and BACKSPACE are command keys. INSERT key is used to write letters to the right of the cursor and DELETE and BACKSPACE keys are used to remove typed text.

**6) NAVIGATION Keys –** Keys such as the arrow keys, HOME, END, PAGE UP and PAGE DOWN are navigation keys. The arrow keys are used to move the cursor up, down, right and left. The HOME key moves the cursor to the left end of a line of text. The END key moves the cursor to the end of a line. The PAGE UP key is used to move one page up and the PAGE DOWN key is used to move one page down while viewing a document.

**7) ALPHABET keys –** These keys are used for entering letters. (A to Z)

**8) NUMERIC keys -**  These keys are used for entering numbers. (0 to 9)

**Q. Write a short note on Mouse.**

**Ans.** A mouse is a small device that you can use to move, select and open items on the computer screen. Most mouse devices have at least two buttons, left and right. Most of the actions are performed by clicking the left button. The right button is used for specific functions. Some advanced types of mouse devices provide additional buttons to speed up common tasks, such as scrolling text.

**Session 6: COMPUTER OPERATING SYSTEM**

**Q. What is an Operating System?**

**Ans.** An operating system performs four primary functions.

1) It manages and controls the hardware connected to a computer.

2) It helps other programs running on a computer to use the hardware.

3) It helps you organize and manage files and folder on the computer.

4) It provides a user interface that allows you to interact with the hardware, the operating system itself, and other programs.

An operating system controls how programs work with each other and how they interact with the computer hardware. It also creates the file system that determines how your data is stored within a storage device. For example, Windows Vista, Windows 2008, etc.

**Q. What is a Desktop?**

**Ans.** A desktop is a computer display area of windows that contains various objects. It is first screen which display after booting of the system.

On the desktop, we find:-

i) My Computer or Computer – it contains all the storage areas of the computer.

ii) Recycle Bin – it contains all the deleted content of the computer.

iii) My Network Places or Network – it contains the information of interconnected computers.

iv) My Documents or Documents – it contains a common area to store various types of files on the computer.

**Q. Define:**

**a) Icons –** The pictures that we see on the desktop screen are called icons.

**b) Taskbar –** At the bottom of the desktop, there is a bar which is known as taskbar, left side of which may contain a Start button, right side may contain date, time and active device information and the center of the taskbar may have some shortcuts and active applications.

**c) Shortcuts –** Shortcuts are the direct links to help the user to start the application, which may be stored anywhere on the computer.

**d) Help and Support –** It provides documented form of help information to work on the computer.

**e) Search –** It help to search for an applications or a file.

**f) Settings –** It helps to customize various settings (Display, Hardware, Software etc. ) of the computer.

**g) Documents –** It provides quick links to all recent documents, which were opened modified recently on the computer.

**h) Programs –** It displays a submenu with list of various applications available on the computer to work on.

 **SESSION 7: PERFORMING BASIC FILE OPERATIONS**

**Q What is a file format? Name some file formats.**

Ans. Every file has an associated format that defines the way data is stored in the file. The file format is identified by a period (also called a dot) appended to a file name, followed by three or four letters. Some of the file formats are as follows:-

 doc/.docx ( word documents)

 .gif/.jpg (image files)

 .exe (executable files)

 .wma and other (multimedia file)

**Q. What is a file and folder?**

Ans. File – File is a collection of related information.

 Folder – We can organize files using folder. Different files can be stored in a folder.

**Q. Write steps to rename a file/folder?**

**Ans.** 1. Select the file/folder.

2. Click the right button of the mouse. Select the option rename.

3. Type the new name and Press enter key.

**Q. Write steps to delete a file/folder?**

**Ans.**  1. Select the file/folder to be deleted.

 2. Click right button of the mouse. Select the option Delete.

 3. Pop up will ask you to confirm File delete. Click on Yes button.

**Q. Write steps to copy-paste a file / folder?**

**Ans.** 1. Select the file/folder. Click right button and select copy option

2. Go to the location where you want to paste the file/folder. Click right button and select paste option.

 OR

1. Select the file/folder. Press Ctrl & C keys together.

2. Go to the location where you want to paste the file/folder. Press Ctrl & V keys.

**Q. Write steps to cut-paste a file / folder?**

**Ans.** 1. Select the file/folder. Click right button and select cut option

2. Go to the location where you want to paste the file/folder. Click right button and select paste option.

 OR

1. Select the file/folder. Press Ctrl & X keys together.

2. Go to the location where you want to paste the file/folder. Press Ctrl & V keys.

**SESSION 8:- THE INTERNET**

**Q What is Internet? What are the uses of the internet?**

**Ans.** Internet is a interconnection of different networks. The uses of internet are as follows:

1. Internet is used to communicate with people all around the world instantaneously.

2. It helps us to get the latest information on the current events.

3. You can search information on any topic.

4. You can study online and get certification of courses you opt.

5. Internet is a great source of entertainment. We can listen to music, play games, watch movies or share pictures etc.

6. We can buy and sell products online.

7. We can perform banking transactions.

**Q. What are the requirements of an Internet connection? Explain.**

**Ans.** To connect to the Internet, we need :-

**1. A Computing Device:** It can be a personal computer, portable computer, or even a mobile device such as a cell phone etc.

**2. A Connection Device:** such as Modem. Modem is Modulator-Demodulator which converts digital information into analog information and transmits it over a phone line. It can either be built-in or externally attached to a computer.

**3. An ISP:** ISP is Internet Service Provider. It is a company that provides Internet connectivity to individuals, businesses and organizations.

**Q. What are the different methods by which you can connect to the Internet?**

**A.** The different methods are as follows:-

**1. Physical Connection:** When we connect to the Internet by using cables, the connection is called a physical connection.

**2. Wireless Technology:** A computing device that supports wireless technology has a Wireless Fidelity or the Wi-Fi card that provides wireless communication between the computing device and the network.

 **Q. What is an Access Point (AP)?**

**A.** As, a wi-fi card is not physically connected to an ISP, another device we need for wireless connectivity is an access point (AP). An AP is used to connect a wireless computing device to a wired network. This wired network may belong to an ISP. We can connect to the Internet through the ISP.

**Q. What is a Bandwidth?**

**A.** Bandwidth is the amount of data that can be transmitted over a network in a certain amount of time. The amount of data that any network can receive or send depends on its bandwidth. It is measured in Mbps or megabits per second, Kbps or Kilobits per second which means 1 KB of data can be transmitted over the network in 1 second.

**Q. Explain different types of connection for using Internet?**

**A.** The different types of Internet Connections are as follows:

**1. Dial-up :** We can access internet by dialing a particular number provide by the ISP. It offers the data transfer rate up to 56.6 Kbps.

2. **DSL (Digital Subscriber Line) :** While using DSL Connection, we are always connected to the Internet. A type of DSL connection is the asymmetric digital subscriber line (ASDL) connection. To use an ASDL connection, we must have a special ASDL modem. It offers the data transfer rate of 384 Kbps to 8 Mbps.

**3. Cable Modem:** We can get a high-speed Internet connection from the cable TV provider. Using this type of connection, we can be connected to the internet at all times. It supports data transfer rates of 4 Mbps.

**4. T1 –** T1 lines provide a dedicated phone line connection to connect to the internet. T1 are a popular option for business today. It supports data transfer rates of 1.544 Mbps.

**5. Wireless -**  We can connect to the Internet by using wireless technology.Some wireless connections supports bandwidth of several gigabits per second (Gbps). It supports data transfer rate from 11 Mpbs to 45 Mbps.

**Q. What type of Internet connection are used by home users and corporate users?**

**Ans. By home users** – home users normally take internet connection from the telephone connection provider. They use broadband connection. Such connections are shared with many users at the same time and so its speed varies depending on various users’ internet activity at that point of time. The speed varies from 256 kbps to 2 mpbs.

**By Corporate users –** The corporate users prefer subscribing a leased line internet connection for faster, effective and reliable connectivity. The speed of such connections varies from 1 mpbs to 100 mpbs. These connections are provided with the help of dedicated connectivity with ISP’s internet server.

**Q. What is Internet Browser? Name some.**

**Ans. Internet Browser –** Internet Browser is the software, which helps us to access web pages from various websites. Examples – Google Chrome, Mozilla Firefox, Safari, Opera and Internet Explorer.

**Q. What is Search Engine? Name some search engines.**

**Ans.** A search engine is a program that is used to search information on the web. For example – Google.com, bing.com, yahoo.com, altavista.com, etc.

**Q. What is an ISP? Name some ISP.**

**Ans.** ISP stands for Internet Service Provider. ISPs are companies that provide internet services to the users. For example – MTNL, BSNL, Airtel, Idea, Reliance etc.

**Q. Write some basic tips to search information using search engines.**

**Ans.** Some basic tips are:-

1. Keep the searching text simple. For example- if you are searching for a particular product, place or concept- just type its name.

2. Use the words that are more likely to appear on a web page. For example, instead of typing ‘pain in head’ just type ‘headache’.

3. Punctuation symbols should be ignored such as “”,!,?, () etc

4. Search is always case insensitive like DELHI or delhi are same.

**SESSION 9: THE WORLD WIDE WEB**

**Q. What is world wide web?**

Ans. World Wide Web or WWW or Web is a way of accessing and sharing information over the internet by using web browsers. The information is in the form of text, pictures and sounds which are arranged logically and stored on computers known as **web servers.**

**Q.Define Webpage and Website.**

**Ans. Webpage –** A web page is a formatted document on the web that a web browser can display. It contains text, images, audio, video, hyperlinks, etc. Web pages are created using HyperText Markup Language (HTML).

**Website –** A website is a collection of web pages that reside on a web server. First page of the website is called Home page.

**Q. Write a short note on Web Addresses.**

**Ans.** To access a website, we need to access the computer on which the website is stored. Each computer on the web is identified by a unique address known as **IP address** (Internet Protocol address). **The IP address** is a numeric address that specifies the exact location of a computer on the web such as 192.168.0.1.As it is not easy to remember the numeric addresses, every IP address is linked to a corresponding **domain name**. Web browsers can use either the domain name or the IP address to locate and display a web page. A web site for a domain is accessed with the help of a unique alphanumeric address known as the **web address.**  The web address is also known as the URL (Uniform Resource Locator). The **URL / web address** specifies the protocol to be used for transferring data between different computers and exact location of the website.Example:- [http://www.ugc.ac.in](http://www.ugc.ac.in/), [http://www.cbse.nic.in](http://www.cbse.nic.in/) etc. Components of URL are:-

http:// - indicates the protocol to be used to access a file.

www - indicates that the website is on the web.

ugc/cbse - name of the website

ac.in/nic.in – indicates type of domain

**Q. What is domain name suffix?**

**Ans. Domain Name suffix** indicates the type of organization to which the website belongs. For example – Microsoft.com where .com is domain name suffix. Some of the domain name suffixes and their use are as follows:-

.com - indicates the website is for commercial organization.

.edu - indicates the website if for educational institutions.

.net - indicates the website is for network-oriented organization.

.org - indicates the website is for non-profit organization.

.info - indicates the website is informative in nature.

.museum - indicates the website is used for museum or for an individual of the museum profession.

There are country level domains that are specifically used by a country or independent territory. Some examples are - .ke for Kenya, .in for India, .jp for Japan etc.

**Q. What is e-commerce?**

**Ans.** E-commerce refers to the business transactions made over the internet such as buying and selling items online.

**Session 10 : DIGITAL TECHNOLOGY AND MEDIA DEVICES**

**Q. Explain different digital and media devices.**

**Ans.** Some of the digital devices are:-

1. **Audio and Video Player** – Examples – MP3 Player, CD players and DVD players. MP3 players are used to play audio whereas CD and DVD players are used to play audio or video.

2. **Mobile Phones –** It is wireless device that is used to make a call from any location. Web enabled phones can be used to connect to internet, check e-mail messages or download songs and games from the internet. If the phone has multimedia features and camera, you can click pictures, videos, record sound and play music.

3. **Video Game systems –** Example – Microsoft Xbox. An Xbox has a motherboard and a harddisk and supports online gaming. You can play games, transfer audio files and can also play movies.

4.  **Personal Digital Assistants (PDAs) –** A PDA is handheld computer that is used as a personal organizer. A traditional PDA includes features, such as an address book, task list and a calculator.PDA can be connected to internet and can also contain camera.

5. **Digital Camera -** A digital camera stores images digitally on a memory device such as flash memory card or a mini hard disk.

6. **Digital Video Cameras -** It is used to record both audio & video and store it in a digital format. Digital camcorders and webcams are examples of digital video cameras.

**Q. Write types of Audio.**

**Ans.** Audio is of two types – analog and digital.

Analog - What you speak or hear is of analog form or wave format.

Digital - The audio stored in digital devices is of digital format.

**Q. What is digital audio technology and what are its characteristics.**

**Ans.** The audio stored in digital devices are called digital audio. Digital audio technology allows us to record, edit and play digital audio files on a computing device. This technology lets you communicate with the computer by just speaking.

**Basic characteristics of digital audio technology are:-**

1. Digital audio can be compressed. Compressed audio files save space, allow portability and are easier to transfer over the internet .

2. It can be edited on a computer by using audio editing software.

**Q. Explain different audio file formats?**

**A. 1. Wave (.WAV):** This is a universal sound file format which is used to store audio files in the wave audio format. Audio files stored in this format have good audio quality but this format is used sparingly these days as the audio files stored in this format are larger when compared with other formats. It was developed for Microsoft Windows 95.

**2. MPEG Audio Layer 3 (.MP3):** This format was developed by Motion Picture Expert Group to allow compression of audio and video for digital distribution. The MP3 format is a popular format that is used to store digital audio files as the files stored in this format are generally smaller than WAV files.

**3. Windows Media Audio (.WMA):** This format was developed by Microsoft. It is used to store digital audio files.

**Q. What is audio streaming?**

**A.** Audio streaming is the process of playing a large audio file from the Internet without downloading it. The audio file is sent to the computer in a continuous stream.

**Q. Define Digital recording?**

**A.** Digital recording is the technique of recording and storing audio files in a digital format. These audio files can also be stored in storage devices like CDs and DVDs , in various formats such as WAV and MP3.

**Q. Explain the concept of burning?**

**A.** The process of copying audio and storing it on a recordable CD or DVD is referred to as burning. For the burning,

1. We need a special hardware device, such as CD or a DVD writer. A CD writer can burn only recordable CDs whereas most DVD writers can burn recordable CDs and DVDs.

2. We also need software to copy audio to a recordable CD or DVD. Different types of CDs can be created from these software, such as Data CDs, Audio CDs and Mixed Mode CDs. Mixed Mode CDs contain audio, video and data files.

**Q. Explain different speech technologies?**

**A. 1. Speech Synthesis:** It is a technology that allows the computer to speak to you by converting text to digital audio. Windows Vista has a built-in screen reader called **Narrator** that supports speech synthesis. A screen reader is a program that reads the text on the computer screen aloud. To support speech synthesis, the computer must have a sound card and speakers.

 **2. Speech Recognition:** It is a technology that allows us to communicate with a computer by using only our voice to enter text and to issue commands. To support speech recognition, the computer must have an audio input device like microphone, a sound card and speech recognition software that converts human speech into text and commands for the computer.

**Q. What is digital video technology?**

**A.** Digital video technology allows us to record video in the digital format on a digital storage device, such as a CD, DVD or a flash memory card, and edit it on a computer by using digital video editing software.

**Q. What are the characteristics of Digital Video?**

**A. The characteristics of Digital Video are:-**

**1.** We can edit them easily using digital video editing software.

**2.** We can also upload the video to a web site and share it over the Internet.

**3.** We can copy the video from a computer to a recordable CD or DVD.

**4.** These files can be easily compressed. **Compressed files** save space and are easier to transfer over the Internet.

**Q. What are Camcorders? Explain the types of Camcorder.**

**A. Camcorder** captures and records video.

**The 2 types of Camcorder are as follows:**

**1. Analog Camcorder:** An analog camcorder records and stores video in an analog format on a tape. To edit the video on the computer, we have to convert it to digital format from analog format.

**2. Digital Camcorder:** A digital camcorder records and stores video in a digital format, which makes editing the recorded video easy.

**Note: A Digital camcorder is lighter and smaller than an analog camcorder.**

**Q. Explain the purpose of using Digital Video Editing Software?**

**A.** A digital video editing software can:

1. Add titles and background music to the video.

2. Cut or remove certain scenes from the video.

3. Add special effects, such as fade-in and fade-out to the video.

4. Enhance video quality by adjusting its brightness, contrast and color.

5. Record audio over the video to describe certain scenes.

**Q. What are the different types of Digital Video Editing?**

**A.** The digital video editing can be of two types:

**1. Linear:** In linear editing, we have to sequentially traverse a file to edit it. Tape is always in a linear format and has to be edited linearly.

**2. Non-Linear:** In non-linear editing, we can directly go the frame and remove it from the video. Random access devices such as, DVDs and CDs read and write data in a non-linear manner.

**WARNING:** Copying video directly from the web and storing it on CDs is illegal. Copying video directly from a video CD or DVD is also illegal. We should have permission to copy and video before copying and storing it.

**Q. What is Web Video Technology?**

**A.** Web Video Technology allow us to transfer digital video files over the Internet.

Some of Web Video Technology are:

1. Video Streaming

2. Downloading Video

3. Web Conferencing.

**Q. What is Digital Photography?**

**A.** Digital Photography allows us to transfer pictures to a computer where we can edit pictures to enhance their quality.

**Q. Define Personal and Professional Photo Printers?**

**A. Personal Photo Printers:** They can either be black and white or color printers. Color Inkjet printers are the most commonly used personal photo printers.

**Professional Photo Printers:** They are used in print labs, use special imaging devices to expose regular photo paper. These printers produce true-photographic quality prints on paper.

**Q. What is computer security and privacy?**

**A. Computer Security:** Computer security deals with the measures that we can take to avoid damage to the computer and its data.

**Computer Privacy:** Computer privacy means that our data is not accessible by anyone without our permission. It deals with the measures that we can take to restrict access to our data.

**Q. What are Natural Threats? Explain various Natural Threats?**

**A.** Natural calamities such as earthquakes, floods, etc can damage the computer any time. Natural Calamities such as, fires, extreme temperatures, and lightning strikes lead to major physical damage to the computers and loss of data.

**Various Natural Threats are described as follows:**

**1.** Excessive heat or cold, fluctuation in temperature can damage some parts of the computer system.

**2.** Fire can damage the system. Even if the computer does not directly catch fire, the excessive heat generated during fire is enough to melt the delicate components inside the computer. Smoke can damage the CPU fan.

**3. Lightning** that strikes with a huge amount of electrical charge can cause a surge. A surge or spike is a sudden increase in the supply of voltage, which can permanently damage the motherboard of the computer system.

**Q. Explain the measures for Protection from Natural Threats?**

**A.** Following are the measures that we can take to protect our data and computer from natural threats:

**1. Back-up data:** Backing up data involves creating multiple copies of our data. Making a backup helps us to recover the data in case of any data loss.

**2. Install computers in secure location:** Install the computers in a place where it is not likely to get damaged due to natural factors. Avoid installing computers in rooms that are exposed to excessive dust or moisture.

**3. Install protective electrical devices:** Install devices such as UPS that can provide battery backup in case of a power outage. In case of lightning it is better to turn off the computer and plug it from the power to avoid damage.

**4. Insulate computers from fire:** Insulate the computers from fire by housing them in fire retardant surroundings. Also install fire safety equipments.

**5. Maintain appropriate temperature and humidity:** Maintain an optimum temperature and humidity level to ensure the smooth functioning of the computer. Install devices like ACs and humidity controllers.

**Q. Who is a hacker?**

**A.** A hacker is a person who tries to illegally access the computer when the system is connected to the internet. After accessing your computer, a hacker can steal or damage the data stored on the computer.

**Q. Describe various threats from malicious human sources and human errors to your computer.**

**Ans.**

1. **Theft –** Anyone can steal your computer or its components, if they have access to it. With the use of laptops or portable computers, physical theft has become very common. There is also virtual theft i.e. identity theft (hacker can steal your personal information to assume your identity) and software piracy (theft of computer design or program)

**2.** **Viruses, worms and Trojan horse – *Viruses*** are programs that damage data or software. They spread, without your knowledge, through the internet, storage devices. ***Worms*** are viruses that replicate themselves once they attack a computer, making it difficult to remove them. ***Trojan horse*** *is* a kind of virus disguised as useful software. Once a Trojan horse reaches your computer, it starts acting like a virus causing damage to the computer’s data.

**3. Spyware –** Spyware are programs that get installed on your computer without your knowledge. They secretly send out information about your web browsing habits or other personal details to another computer through the network.

**4.****Internet Scams –** While using internet, you might come across some attractive offers through e-mail messages or chat room communication. You should be careful before accepting such offers because they might be planned scams.

**5.** **Online predator** – Online predators are individuals who lure anybody online into appropriate and unethical relationships. Online predators develop contact with their targets by using e-mail or chat-room communication.

**6**. **Accidental deletion of data –** Accidental deletion of an important file can disrupt the integrity of data or prevent other files or programs from working.

**7**. **Accidental damage to hardware –** Computer components, being delicate, run the risk of getting damaged due to carelessness. As a result you lose the data stored on the computer.

**Q. What are the measures for protection against threats from human actions?**

**Ans.**

**1. Store data Safely –** Keep your data in safe and secure locations that have limited access to others. This minimizes the possibility of theft or tampering of the data.

**2. Encrypt Data –** When you encrypt data, unauthorized users cannot access the data by removing the hard-disk and attaching it to another computer.

**3. Install antivirus and antispyware programs –** Antivirus and antispyware programs have the ability to check for viruses and spyware present in the computer’s memory and also prevent new ones from entering. You must regularly update antivirus and antispyware to protect the system

**4. Install Firewall –** Firewall helps to ensure computer privacy by restricting external access to your computer by any unauthorized access.

**5. Back up data –** Creating multiple copies of data provides protection against loss of data due to accidental erasure or destruction of data.

**6.** **Keep computer in safe environment –** Keep the computer in an area that is dust – free, free from vibrations, water, any magnetic source etc. The table on which the computer is placed should be steady and stable.

**Q. What are the guidelines for protecting your computer?**

**Ans.**

**1. Implement –** It is an effective way to minimize the risk to your operating user environment and data is to keep unauthorized individuals identification from accessing your computer. To achieve this, set accounts for authorized users on the basis of which, each user gets an appropriate level of access.

**2.** **Set Username and Password –** You can also increase the security and limit unauthorized access to your computer by setting up a username and password.

**3.** **Keep password secure –** The password acts like a key to your computer. Anyone who knows your password can access your computer and tamper with data. You must keep your password secure. Never share your password with others.

**4.** **Lock Computer –** When you leave the computer on and unattended, someone can tamper with your computer software or data. You can prevent this by temporarily locking your computer while you are away. When a computer is locked, it hides the content of the screen. You can lock the computer by using a key combination of **Ctrl + Alt + Del** and then clicking the Lock computer button. The shortcut is **Window key + L Key.**

**5. Install and update protective software –** You need to continuously guard your computer against threats like viruses and spywares. You can protect your computer from these threats by installing antivirus and antispyware software. You need to update these software from time to time. It is also a good practice to install firewall, which filters out the content that reaches your computer. Windows Defender is a built-in antispyware program in windows that protects against pop-ups and other security threats.

**6.**  **Encrypt Data –** Converting the data to an unreadable form to protect it from unauthorized access is called Encryption. An authorized user can reconvert the encrypted data into a readable and usable form. This is called Decryption. Various software products include a way to encrypt data.

**7.** **Back up data –** You can also protect your files from loss or damage by making copies of important files and storing them on a different storage media, such as CDs and DVDs. This process is known as Backing up data. You should keep the backups in secure locations, so that you can use them in case the original data is damages or deleted.

**Q. Explain the best practices for Securing Online and Network Transactions?**

**Ans.1. Use Strong Password:** A strong password is primary defence against security and privacy threats. The password should consists of a combination of uppercase and lowercase letters,numbers and special characters such as ampersand and number sign and should not contain complete words or names.

**2.** **Protect against hacking and spyware** – Spyware programs get installed on the computer with your knowledge and secretly transfers confidential data from your computer to the hackers. To Protect your computer from such programs, intall antispyware programs and make use of Internet Service Provider (ISP) support for online security. Windows also includes built-in antispyware programs called Windows defender.

**3**. **Clear browsing** – The websites and web pages you browse is stored in the browser’s history. However, some of the temporary Internet files may contain your personal information such as username and password. Cookies are small files that are created on the computer by previously visited websites to identify and track your preferences. However, cookies can also be threat to computer privacy. So, You should regularly delete the browser’s history, temporary files and cookies to protect your privacy.

**4. Avoid Sharing -** Hackers can access and misuse your personal information like name, e-mail, bank details etc which you fill in online forms. Some companies may also use this information to send unwanted mails. Therefore, before you share any of your personal details on a website ensure that it is a secured website.

**5. Perform online transactions only on secure sites:-** A website is secure it its name has the prefix https. This prefix indicates that the website implements Secure Socket Layer (SSL protocol). Always check whether the website is secure or not. The locked padlock icon that appears in the Address bar helps you identify a secure website. You can also check the security certificate of a website before performing any online transactions on that site.

**6. Configure security components by using Windows Security Center -** Windows Security Centre is a feature in Windows Vista, which provides a convenient utility to check the status of essential security setting and track the antivirus software installed on your computer. Following are the four components of Security Centre that you can set using Windows Security Centre -

1. Firewall 2. Automatic updating 3. Malware protection 4. Other Security settings

**7. Disable active content -** Active content refers to small programs that get installed on the computer while you are browsing the Internet. In some cases, these programs can be used to damage the data stored on the computer or install malicious software without your consent. By using your browser settings, you can disable active content to prevent the installation of such programs.

**Q. What are the measures for Securing E-mail and Instant Messaging?**

**Ans.** To ensure e-mail security and IM security:-

1. Avoid opening e-mail with attachments.

2. Do not respond to junk mail

3. Do not respond to unsolicited commercial mail

4. Protect yourself from phishing

5. Chat with known people only

6. Avoid opening instant messenger attachments.

**Q. What are the measures to protect your privacy?**

**Ans. 1. Shield your Identity:-** Avoid sharing your personal information with anyone. Use strong password for access to your computer and e-mail connections.

**2. Make Regular Backups –** It is good practice to back up all types of the important and sensitive data on your computer.If you regular back up the data, you can recover the data in case the original data is damaged or deleted. Also, it is advisable to store the backup data in a secure place and restrict access to it by using passwords and encryption.

**3. Check the current security of your system regularly –** Check the current security level of your computer regularly. Modern operating systems have built-in features that help you track the computer against various threats to security and privacy.

**4 . Run Virus Scans Daily –** Each day when you access the Internet, there is chance that your computer is infected by viruses. Therefore, it is important that you run a virus scan on your computer everyday. You also need to keep the antivirus software up-to-date to protect your computer from new viruses.

**5.Use Antispyware –** Spyware programs can secretly enter your computer and transmit personal information. Use antispyware software to keep a check upon these malicious programs and keep the software up-to-date.

**6. Perform Online Transactions on Secure Websites –** Always share your personal information, bank details and online transactions only on secure websites.

**7. Report abuse to the ISP –** You should report to ISP whenever someone attempts to invade your online privacy by sending you spam and attempts to hack your computer.

**8. Filter E-mail Messages from Unknown / Anonymous Senders –** You can create e-mail filters that help you block the junk or spam mails. Be careful while dealing with junk and spam mails.

**9. Encrypt Sensitive E-mail Messages, If Possible –** Encryption is the process of encoding the e-mail message in such a manner that it appears unreadable to everyone except the intended reader. Most e-mail software such as Windows Mail, provides this e-mail encryption feature.

**Q. What are online predators?**

**Ans.** The Internet communication can be misused by people to lure young individuals into appropriate or dangerous relationships. The people who engage in such activities are known as online predators. Online Predators trap their victims by developing contact through chat rooms, instant messaging, e-mail, or discussion boards. They generally target children, especially adolescents and can also target adults with the objective of financial exploitation.

**Q. What are the guidelines for protection from online predators?**

**Ans. 1. Know the signs of predator behavior –** Online predator tend to get intimate very quickly. They often express a great deal of interest and affection towards their targets. You detect such behavior to avoid contact with them.

**2. Be cautious of offers from strangers online –** Online predators lure their targets with gifts or other tempting offers. You should be cautious about such gifts or offers.

**3. Educate your family on online safety measures –** Educate your family members on appropriate chat room behavior to avoid being targeted by online predators. Tell them to use nonsuggestive and neutral screen names. The screen names must not give away their actual names, age, gender or contact information because this information can be misused. Your family members must not share their personal information, username and password with anyone including friends.

**4. Guide children when they visit website –** It is recommended that parents guide their young children when the children visit any websites. As a parent, instruct children to leave a website if the site contains unpleasant content or the site asks for excessive personal information.

**5. Know the sites visited by children –** It is important for parents to regularly check the type of web sites their children visit. Track the previously visited websites by viewing the browser history.

**6. Block access to inappropriate web sites –** You can block access to websites that contain adult content by enabling the browser’s Content Advisor feature or by installing certain software programs.

**7. Monitor chat activities –** You can install specialized software that can monitor chat activities and flag inappropriate information exchange on your computer.