

## CLASS IX

### Session 1

- **Fill in the blanks.**

1. A computer is made up of two components- one is \_\_\_\_\_ and other is \_\_\_\_\_.  
(Software, Hardware)
2. All physical components of computer are part of the \_\_\_\_\_. (Hardware)
3. The program and languages used by the computer are called \_\_\_\_\_. (Software)

- **Explain any five fields where computer can be used. (Write any five)**

- **Answer:** Today, the computer is used in different fields, which include the following:

Banks: Almost every bank uses computers to keep the records of money transactions and financial documents. It is also used in this sector because of the speed, convenience and security that it provides.

Communication: Communication has become very easy and simple through internet and email. Computer communicates using telephone lines, modems and satellites. Through email we can send messages in a split-second to anybody in any part of the world. Internet helps us to find information on every topic. It is the easiest and fastest way of communication. Computer network makes the user capable of accessing remote programs and databases of same or different organizations.

Business: Computer has now become an integral part of corporate life. Business transactions take place very easily, accurately and records of all the business transactions can be stored. Today computers can be found in every store, supermarkets, restaurants, offices etc. One can buy and sell things online, bills and taxes can be paid online and even the future of business can be predicted using artificial intelligence software

Medical Science and Health Care: Diseases can be easily diagnosed with the help of computer and we can also know about the cure. In the field of healthcare, computers are used to perform various tasks such as reviewing medical records of patients. Using computers, doctors can easily search information about latest drugs that are available to treat a disease

Education: Today computer has become an important part of one's education because we are using computers in every field. Without the knowledge of computer we cannot get a job and

perform well in it. So computers can improve job prospects. Computers are used in class rooms by teachers to teach, maintain records of students, online learning and assessments, etc.

Media: Almost every type of editing and audio- visual composition can be made by using special software made for the purpose. Some software can even make three dimensional figures which are mostly used in making cartoon films. Special effects for action and science fiction movies are also created on computer.

Travel and Ticketing: With the advent of computers, ticketing and reservations have become an easy task. Now-a-days, it is possible to reserve our train tickets over the internet. It also allows one to check the railway seat availability and PNR status in real-time.

Weather Predictions: Weather predictions are also possible by the experts using supercomputers. Weather forecasting now relies on computer-based models that take many atmospheric factors into account. Ever since computers are being used, there is a greater accuracy in weather forecasting.

Sports: Computers are also used for umpiring decisions. Many a times, the umpire has to go for the decision of third umpire in which the recording is seen on the computer and finally an accurate and fair decision is reached. Simulation software helps the sportsman to practice and improve his skills.

Arts and Entertainment: Video games are one of the most popular applications of personal computers. The constantly improving graphics and sound capabilities of personal computers have made them popular tools for artists and musicians. Personal computers can display millions of colors, can produce images far clearer than those of a television set, and can connect to various musical instruments and synthesizers. Painting and drawing programs enable artists to create realistic images and animated displays much more easily than they could with more traditional tools. “Morphing” programs allow photographers and filmmakers to transform photographic images into any size and shape they can imagine.

Social Media: The spreading of an idea, or of news occurring somewhere in the world is now possible through social sites on the internet. As long as one person is able to connect to the internet and express their view about a situation or simply about an idea, then the information that individual will want to share, will get out into the world. Sites such as Facebook,

Twitter, YouTube and LinkedIn allow people to share ideas on not just news, but also on products and services

Mobile Computing: Mobile computing is the human–computer interaction by which a computer is expected to be transported during normal usage. Mobile computing involves mobile communication, mobile hardware, and mobile software. It also means being able to use a computing device even when you are mobile and therefore changing location. Portability is one aspect of mobile computing. Mobile Computing is a variety of wireless devices that allow people to connect to the internet, providing wireless transmission to access data and information from where ever they are.

Scientific Research: Scientists use documentation. For example, scientists use computers to view images from space and to publish information on their recent research.

Government: In government organizations, you can use computers to organize information by storing and maintaining records. Computers are also used for providing services to citizens.

Publishing: Computers are used to design any type of publication ranging from simple newsletters to magazines, marketing materials, books, or newspapers. Most of the publishers also have an electronic version of their magazines and newspapers. E-books have become widely prevalent.

Daily Life: We operate washing machines, microwave oven and many other products using software. Moreover we can store all the information about our important work, appointments schedules and list of contacts in a computer. Computer is, therefore, playing a very important role in our lives and now we cannot imagine the world without computers.

- **Explain the common terminology of a computer system.**
- **Answer:** Common computer terminologies are hardware, software, data, and network.

Hardware: Hardware refers to all the physical components of a computer. It includes all input devices, processing devices, storage devices, and output devices. The keyboard, mouse, motherboard, monitor, hard disk, cables, and printer are all examples of hardware. You use hardware to provide input to a computer and also to get the desired output.

Software: In addition to hardware, a computer needs software to function. Software sends instructions to the hardware to perform the necessary tasks. The most important software on

the computer is the *operating system*, which controls and manages the hardware connected to your computer.

Programs and Data: The hardware and the operating system together are referred to as a *platform*. *Programs*, also called applications, use this platform to perform tasks. There are many types of programs. For example, a word processor, such as Microsoft Office Word 2007, is a program that helps you create a letter. Programs process data that you provide as input to your computer. This data can be in the form of text, graphics, audio, or video depending on the type of program.

Networks: You can connect your computer to other computers to share information and hardware components. A group of computers and associated devices that are linked together to facilitate sharing information is called a network. Networks can also be used to share data and devices such as printers. You can also communicate with other computer users on the network. A typical network has the following three components: Server, Workstation and Communication Channel. Depending upon the area covered, a network can be categorized as a local area network (LAN) or a wide area network (WAN).

- **Differentiate between LAN and WAN.**
- **Answer:** A LAN connects devices within a limited area, such as a home or a small group of offices. It commonly includes computers and shared resources such as printers and scanners. A WAN is a network that connects devices in geographically separated areas. You can use the resources of a WAN to connect two or more LANs by using long wires, optical cables, and satellites. Many organizations use a WAN to connect their networks across different countries. The Internet is an example of a WAN.
- **What do you understand by server, workstation and communication channel?**
- **Answer:** Server: The main computer on a network that provides services to other computers on the network. A server decides which computers are to be allowed to access the hardware and software on the network.

Workstation: A computer connected to a network. You use a workstation to access the hardware and software on a network.

Communication channel: A path or link that connects computers or peripheral devices, such as printers and disk drives, to transfer information. Cables are commonly used as communication channels in a network, but networks can also transfer information through wireless connections

- **Differentiate between Internet and Intranet.**

- **Answer:** Internet: The Internet is a worldwide collection of public networks that are linked to each other for information exchange. The Internet started as a network to facilitate communication between government and educational departments in the United States. When other networks were connected to this network, it became a vast medium for exchanging information and ideas. The Internet offers a range of services to its users, such as file transfers between Internet users and electronic mail for sending messages.

Intranet: Many organizations use a special type of network to communicate and share information within the organization. Such a network is called an intranet. An intranet is much smaller than the Internet and can provide services such as document distribution, software distribution, access to databases, and training.

- **Write the full form of the following**

- PDA: Personal Digital Assistant
- LAN: Local Area Network
- WAN: Wide Area Network
- WWW: World Wide Web

## Session 2

- **Describe the basic components of a computer system with an example.**
- **Answer:** A computer has various parts, and each part performs a specific function.

The following table describes the basic parts of a computer.

Input devices	Input devices are used to provide information to a computer, such as typing a letter or giving instructions to a computer. Some examples of input devices are mouse, keyboard and scanner
Output devices	You use output devices to get feedback from a computer after it performs a task. Some examples of output devices are monitor, printer and speaker
Central Processing Unit (CPU) and Memory	The Central Processing Unit (CPU) is a device that interprets and runs the commands that you give to a computer. It is the control unit of a computer. The CPU is also referred to as the processor. Memory is where information is stored and retrieved by the CPU. There are three main types of memory. RAM, ROM and Flash memory

- **Write the full form of the following.**
  - CPU: Central Processing Unit
  - RAM: Random Access Memory
  - ROM: Read Only Memory
  - NIC: Network Interface Card
  - USB: Universal Serial Bus
- **Differentiate between RAM and ROM**
- **Answer:**
  - **Random access memory (RAM):** It is the main memory and allows you to temporarily store commands and data. The CPU reads data and commands from RAM to perform specific tasks. RAM is volatile, which means it is available only while the computer is turned on. The contents of RAM must be copied to a storage device if you want to save the data in the RAM.
  - **Read only memory (ROM):** It is the memory that retains its contents even after the computer is turned off. ROM is nonvolatile, or permanent, memory that is commonly used to store commands, such as the commands that check whether everything is working properly.

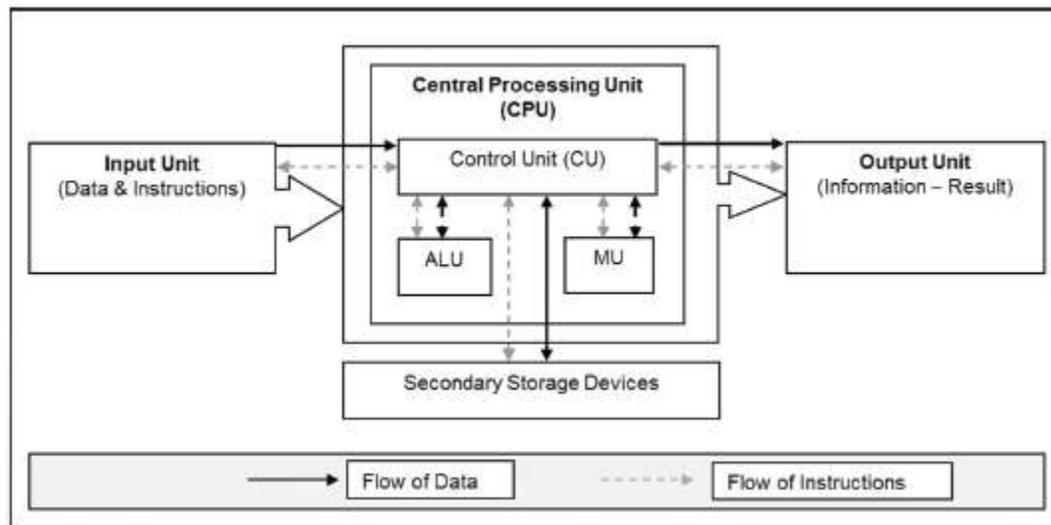
- Describe the various types of the ports used in a computer system

- Answer:

Ports and Connections	<p>A port is a channel through which data is transferred between input/output devices and the processor. There are several types of ports that you can use to connect a computer to external devices and networks. Some types of ports are described in the following list.</p> <ul style="list-style-type: none"><li>• <b>Universal serial bus (USB) port:</b> You use this to connect peripheral devices such as a mouse, a modem, a keyboard, or a printer to a computer.</li><li>• <b>FireWire:</b> You use this to connect devices such as a digital camera. It is faster than a USB.</li><li>• <b>Network port:</b> You use this to connect a computer to other computers to exchange information between the computers.</li><li>• <b>Parallel port and serial port:</b> You use these ports to connect printers and other devices to a personal computer. However, the USB port is now preferred to connect peripheral devices because it is faster and easier to use.</li><li>• <b>Display adapter:</b> 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. The display adapter may be on the motherboard, or on an expansion card.</li><li>• <b>Power:</b> 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 it into DC power.</li></ul>
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### Session 3

- Write the full form of the followings.
  - OS: Operating System
  - CD: Compact Disk
  - DVD: Digital Versatile Disk
- Explain the working of CPU with suitable diagram.
- Answer:



The CPU is divided into three parts

(i) Control unit (CU), (ii) Arithmetic & logic unit (ALU) and (iii) Memory unit (MU).

Inside CPU, Control unit acts as a receptionist and a manager of a company. It receives each and every instruction from user and coordinates between different parts to perform various operations.

Arithmetic and logic unit acts as an accountant of a company, which performs all the mathematical and logical calculations.

Memory unit acts as a temporary store of a company, where small amount of data is stored while other operations are being performed.

In addition to these units, a computer system also has secondary storage device to hold or store large amount of data for later use by various applications running on it.

- Name some input/output devices and write the type of input/output that can be provided through them.

- Answer:

Input/Output device	Purpose	Sample Requirement
Mic/mike	Used to take the audio input	To record nursery rhymes in the system
Scanner	Used to accept digital input from a paper picture/image/document.	To scan a picture that is to be included in an assignment
Camera	Used to accept image/video inputs	To take pictures of students for identity cards.
Barcode Reader	Used to read barcode	To read Barcodes present on books being issued/returned in the School library.
Printer	Used to print output on paper	To print an assignment on paper
Speaker	Used for audio output	To listen to Nursery Rhymes from the system

- Differentiate between USB port, FireWire/E port and Ethernet port.

- Answer:



A USB (Universal Serial Bus) port is a standard cable connection interface available on personal computers and some other electronic devices for data communication. USB ports allow stand-alone electronic devices to be connected with the help of cables to a computer (or to each other). USB ports can also supply electric power across the cable to devices without their own.



FireWire/E ports are forms of a serial port that make use of FireWire/E technology to transfer data rapidly from one electronic device to another. The FireWire/E port has the ability to interact with a number of different devices. A FireWire/E port can provide an ideal way to connect a scanner and digital camera to a computer system as the data transfer is relatively faster than on USB and also results in excellent quality.



Ethernet Port used to connect computers and other devices form a computer network. It uses Ethernet cables establish efficient and effective communication between computers and other peripheral devices such as modem, router, multimedia projector etc.

## Session 4

- **What do you understand by personal computer? Explain the various types of it.**
- **Answer:** The most common computer is the *Personal Computer (PC)*, typically used by individuals and small businesses. A personal computer is a computer that is designed for use by one person at a time. It is used in schools to teach lessons, research over the Internet, and work on assignments. You can also use a personal computer to play games, view videos, and listen to music. Depending on the size and the purpose of a personal computer, it can be categorized into four different types: desktop, laptop, handheld, or tablet

The following table describes the different types of computer in detail:

Type of Computer	Feature
Desktop computers	Desktop computers are made up of individual components such as a monitor, a keyboard, a system unit, and a printer. Desktop computers are generally placed on the surface of a desk or a table. The components of desktop computers can easily be replaced or upgraded.
Laptop computers	Laptop computers are lightweight personal computers. Laptop computers are smaller in size as compared to a desktop computer. The main feature of laptop computers is that they are small and portable. As the name suggests, these can easily be placed on the lap of a user. Laptop computers run on electricity or on batteries that can be recharged.
Handheld computers	Handheld computers are devices used for specific everyday tasks, such as managing personal data. These are smaller than laptops and provide fewer features compared to desktop computers or laptops. Several handheld computer models can also work as cellular phones or digital cameras.
Tablet computers	Tablet computers are fully functional computers that allow you to write directly on the screen by using a tablet pen. You can also use the tablet pen to perform mouse functions. Tablet computers, therefore, do not need a keyboard and a mouse.

- **Explains the various terms used to measure storage or memory capacity.**
- **Answer:** When a computer performs a task, it stores data in the memory. The data that is stored in the memory is internally represented in the form of 0s and 1s. Each 0 or 1 is called a *bit*. A combination of eight bits is called a *byte*. The following table explains the various terms used to measure storage or memory capacity.

Term	Description
Bit	A bit is the smallest unit of information that a computer handles. A single bit can hold only one of two values, 0 or 1. One of the two values is always present.
Byte	A byte is a combination of eight bits arranged in a particular sequence. Each sequence represents a single character, symbol, digit, or letter. A byte forms the basic unit that is used to measure the storage capacity of a storage device.
Kilobyte	One kilobyte (KB) is equal to 1,024 bytes. Most of the user data stored in a computer, such as simple e-mail messages or a text file, occupies storage space of a few kilobytes.
Megabyte	One megabyte (MB) is equal to 1,024 KB. The amount of information contained in 1 MB is approximately equal to a complete textbook.
Gigabyte	One gigabyte (GB) is equal to 1,024 MB, which is approximately a billion bytes. Most computers today have hard disks with large capacities that are measured in gigabytes. A gigabyte denotes a huge storage capacity. For example, a video film stored on a computer can occupy more than 1 GB of space.
Terabyte	One terabyte is equal to 1,024 GB, approximately a trillion bytes. Storage devices having capacities in terabytes are generally used by organizations that need to store large volumes of data. A terabyte is so large that a few terabytes of memory space can contain the complete text of a large number of books.

- Describe the various important factors that affect the overall performance of computer system.
- **Answer:** The following table lists some of the important factors that affect the overall performance of the computer.

Factor	Description
CPU speed	The CPU is the brain of the computer and its speed is an important factor that affects the overall performance of the computer. 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. If you have two computers that are identical except for the CPU speed, the computer with the faster CPU completes a task more quickly.
Hard disk factors	Hard disks differ in storage capacities as well as their 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.
RAM	The speed of retrieving data stored on RAM is very fast and for this reason the computer uses it 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. When there is not enough amount of RAM in a computer, the computer slows down or fails to function properly.

- **Write the examples of word processing programs, presentation programs, spreadsheet programs, database programs and graphic programs**

- **Answer:** MS WORD, MS POWERPOINT, MS EXCEL, MS ACCESS AND MS PAINT

- **What is the full form of ISP?**

- **Answer:** Internet Service Provider

- **What do you understand by communication program? Explain with the help of example.**

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

E-Mail: Sending e-mail messages is the exchange of messages from one computer user to another computer user. It only takes a few seconds to send and receive an e-mail. This exchange can be within a local area or from one part of a country to another. You can send an e-mail message to or receive an e-mail message from one or several persons at any time of the day. To send an e-mail message you must have an Internet connection and an e-mail account. After you have an e-mail account, you need to know the e-mail account of the person to whom you want to send an e-mail

Chat: Another type of communication is through chat programs, which allows you to send and receive messages immediately. You can use a chat program to communicate with several people at the same time. A commonly used communication program is Windows Live Messenger.



When you are chatting with someone, the person on the other end receives your messages immediately. Through chat you can also talk to the person you are chatting with. This is

called voice chat. Another form of chatting allows you to also see the person you are talking to. You use a device called a webcam to do this.

- **What do you understand by domain name?**
- **Answer:** A domain name identifies the name and type of organization with whom you have an e-mail account.
  
- **Explain various parts of an email-id.**
- **Answer:** If you have an e-mail account, then email-id will be similar to username@example.com, where the username is your name. The @ is the at sign and example.com is the domain name.

## Session 5

### **Q1. Give an overview of the Keyboard.**

1.	Keys labeled from F1 to F12 are function keys. You use them to perform specific functions. Their functions differ from program to program. The function of the F1 key in most programs is to access the help file associated with a program. Some keyboards may have fewer function keys.
2.	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. Most keyboards include a special key called Windows logo key. This key is located between the CTRL key and the ALT key. This key is used to open the Start menu, or is used in combination with a second key to perform common Windows tasks.
3.	There are keys which are used for entering letters and numbers.
4.	Punctuation keys include keys for punctuation marks, such as colon (:), semicolon (;), question mark (?), single quotation marks ( ' '), and double quotation marks ( " ").
5.	The label on this key can be either ENTER or RETURN, depending on the brand of computer that you are using. You use the ENTER or the RETURN key to move the cursor to the beginning of a new line. In some programs, it is used to send commands and to confirm a task on a computer.
6.	Keys such as INSERT (INS), DELETE (DEL), and BACKSPACE are command keys. When the INSERT key is turned ON, it helps you overwrite characters to the right of the cursor. When the INSERT key is OFF, it helps you enter text or characters to the right of cursor, without overwriting this text or characters. The DELETE key and the BACKSPACE key are used to remove typed text, characters, and other objects on the right and left side of the cursor, respectively.
7.	Keys such as the arrow keys, HOME, END, PAGE UP, and PAGE DOWN are navigation keys. You use the arrow keys 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.

### **Q 2. Write the full form of the following.**

- i. POST-**Power On Self Test
- ii. CTRL-** Control
- iii. INS-** insert
- iv. DEL-** Delete

## Session 6-7

**Q1. Write the shortcut keys for the following.**

- a. CUT- CTRL+X
- b. COPY- CTRL+C
- c. PASTE-CTRL+V
- d. SELECT ALL- CTRL+A

**Q2. Write the common extension for the following file types:**

- a. TEXT file- .TXT
- b. Executable file- .EXE
- c. Image file- .JPG / .BMP
- d. Word file- .DOC/ .DOCX

**Q3. Define the functions of an Operating System.**

Function	Description
Provides a user interface	Many operating systems provide visual elements, such as icons and menus, to help you interact with a computer. You can use a mouse to select icons and issue commands. For example, you can double-click a file to open it with the appropriate program.
Provides utilities to configure your system	A GUI-based operating system provides easy-to-use utilities to help you configure your computer. These utilities are small programs that help you perform specific functions, such as connecting to a network, managing resources, and adding new programs to your computer.
Helps manage computer resources	An operating system helps manage hardware. Programs communicate with the operating system to work with the required hardware, such as the CPU, to complete the required tasks.
Helps secure data by controlling user access to a computer	An operating system allows you to secure your data. It helps you specify authentication and authorization rights to control access to your computer and its resources. <i>Authentication</i> is the process by which the computer system validates a user's logon information. An operating system can help you create a username and a password, so that only those users who know the username and password can access the resources on your computer. In addition, you can associate specific permissions to each username. This is called <i>authorization</i> . For example, you can prevent users from printing documents from your computer.

**Q4. What is the full form of GUI?**

**Ans.** GUI stands for Graphical User Interface.

**Q5 . What is an Operating System?**

**Ans.** An operating system performs four primary functions. It manages and controls the hardware connected to a computer. It helps other programs running on a computer to use the hardware. It helps you organize and manage files and folders on the computer. It provides a user interface that allows you to interact with the hardware, the operating system itself, and other programs.

Some Examples of Operating Systems are: Windows XP, Windows VISTA, Windows 7, Windows Vista, Linux, Ubuntu.

## Session 8

**Q 1. What is the full form of the following**

- a. **ISP**- Internet Service Provider
- b. **WI-FI**- Wireless Fidelity
- c. **DSL**- Digital Subscriber Line
- d. **ADSL**- Asymmetric Digital Subscriber Line

**Q 2. Name any four Internet Browsers.**

- a. Google Chrome
- b. Opera
- c. Internet Explorer
- d. Mozilla Firefox

**Q 3. Name any four Search Engines**

- a. Google
- b. Yahoo
- c. Bing
- d. Ask

**Q 4. What is a Bandwidth?**

**Ans.** Bandwidth is the amount of data that can be transmitted over a network in a certain amount of time. Bandwidth is measured in *Mbps* (megabits per second), *Kbps* (kilobits per second), or *bps* (bits per second). If the bandwidth of a network is 1 Mbps, then 1 megabit of data can be transmitted over that network in 1 second.

**Q 5. What is Internet? What are its uses?**

**Ans.** The Internet is a collection of networks that are connected together for exchange of information.

The uses of INTERNET are as follows:

1.	You can use the Internet to communicate with people all around the world instantaneously. The messages you send over the Internet can reach any part of the world in just a few seconds.
2.	The Internet also helps you get the latest information .on current events. Many leading news channels use the Internet as the medium to provide updated news.
3.	You can use the Internet to search for information on any specific topic, such as history of computers.
4.	You can take any course of your choice and register for online certification exams over the Internet.
5.	The Internet can also be used as a source of entertainment. You can listen to music, play games, watch movies, or share pictures.
6.	You can buy and sell products, such as books and electronic goods, over the Internet. You can also pay for these goods online by specifying your credit card details.
7.	You can use the Internet to perform banking transactions, such as viewing details of your bank account and transferring money from one account to another.