

## Practice Test Answers-Class IX

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# Chapter 1: An Introduction to Computer System

## 1. What is a computer?

Ans. A computer is an electronic device that takes input from the user in the form of data or instructions, processes the data according to the given instructions and generates the output.

## 2. What do you mean by a supercomputer?

Ans. A supercomputer has a large number of CPUs and provides a very high level of computing. For example, Tianhe-2 supercomputer of China consists of 16000 computer nodes and can process 33.86 petaflops.

## 3. What is an SMS?

Ans. SMS stands for Short Message Service. It is the basic communications technology used to exchange short alphanumeric text messages between mobile devices or digital line and mobile devices. It is also known as text messaging. SMS messages can hold up to 140 bytes of data, which allows a 160-character alphanumeric message.

## 4. What do you mean by workstations?

Ans. The processing of workstations is similar to that of personal computers; however, workstations have greater memory and more extensive mathematical abilities. Workstations can be connected to other workstations or personal computers to exchange data. Generally, these computers are used at places where a high level of computational abilities is required, such as in scientific, industrial and business environments.

## 5. Define a smartphone.

Ans. A smartphone is basically a mobile phone that provides additional features to perform day-to-day tasks. These features include sending mails and accessing the Internet. In smartphones, you also find a built-in camera and music player. You can perform almost all the tasks of a desktop computer with smartphones.

## 6. Define any two communication technologies.

Ans. Two communication technologies are as follows:

- **Video conferencing:** Video conferencing facilitates two or more users, located at different regions around the world, to see and communicate with each other simultaneously.
- **Blogs:** Nowadays, blogs have become one of the most popular interactive modes of communication on the Internet. Generally, blogs contain textual information, but you can also share your photographs, videos and artworks with other users.

## 7. What do you understand by an email?

Ans. Email represents a mode of communication in which a user can send electronic messages to other users through the Internet. Email provides a convenient way to exchange digital messages across the Internet. It is a mode that allows groups as well as individual users to share ideas and information with each other. You can send and receive email messages by either using a Web browser or email systems, such as Mozilla Thunderbird and Microsoft Outlook.

## 8. What do you mean by a laptop?

Ans. A laptop is a portable computer that is integrated with a display screen, keyboard, trackball, processor and memory. The entire machinery of a laptop runs on a rechargeable battery. You can carry a laptop anywhere; therefore, you do not have to stick at one place to work on a computer.

## 9. What are the limitations of computers?

Ans. The limitations of computers are:

- **No Power to Make Decisions:** Computers are unable to take decisions on their own; instead, they depend upon the input being provided by humans.

- **No IQ:** Computers are machines that do not have self-intelligence; instead, they need to be informed time to time regarding the tasks to be performed.
- **No Heuristics:** Computers are not able to learn from their past experiences. It implies that when a computer commits an error once, then it would commit the same mistake again in a similar situation.

**10. Write the features of a computer.**

**Ans.** The features of a computer are:

- **Speed:** Computers perform at great speed and have the capability of processing even the most complex computations in a matter of seconds. Many computers have the ability to process billions or trillions of operations in a single second.
- **Accuracy:** Computers have the ability to provide accurate results as they perform computations with utmost accuracy.
- **Storage capacity:** The storage capacity of a computer defines how much information can be stored in it. Nowadays, the storage capacity of hard disks can be in terabytes (TBs). This allows the user to store a large amount of data at a single location.
- **Reliability:** The electronic components in modern computers make them more reliable as they rarely break or fail.
- **Consistency:** A computer generates consistent results if provided the same input and processes.

## Chapter 2: Exploring Computer Components

**1. What do you mean by input devices?**

**Ans.** The devices that are used to enter data or instructions in a computer are known as input devices. For example, keyboard and mouse.

**2. Define keyboard.**

**Ans.** A keyboard is an input device. It is one of the important components of a computer. It looks like a typewriter. Besides the normal letter keys, it also has a numeric keypad located to its right.

**3. What is a scanner? How many types of scanners are available in the market?**

**Ans.** A scanner is a device that can transfer typed or handwritten texts, graphs, diagrams and photographs to a computer. The following are some common types of scanners: Hand-held scanner, Flatbed scanner and Drum scanner.

**4. What is the CPU?**

**Ans.** CPU is a physical device that controls computer operations. It is the brain of the computer system and helps run programs by using various instructions. All the operations related to searching, sorting, calculating and decision-making take place in the CPU.

**5. What is a monitor? How many types of monitors are available in the market?**

**Ans.** A computer monitor is an output device that displays the user interface and the information requested by the user. Monitors are classified on the basis of the technology they use to display both images and text. The following are the three types of monitors: Cathode Ray Tube (CRT), Liquid Crystal Display (LCD) and Light Emitting Diode (LED).

**6. Explain the working of a laser printer.**

**Ans.** A laser printer uses a beam of laser for printing. Laser printers work on the principle of electro-photography used in a photocopy machine. It scans the entire page line by line and stores a bitmap of the page in the memory.

**7. What is a light pen?**

**Ans.** A light pen is a pointing device that has a photocell mounted in the pen-shaped tube. When the pen is kept in front of an element on the computer screen, say the Start button, it senses the light and the photocell gets activated. A pulse is generated and the electric response is transferred to the CPU, which recognizes the point to which the light pen is pointing. Light pens are frequently used for Computer-Aided Design (CAD) applications.

**8. Name two distinct categories of printers.**

**Ans.** The following are the two distinct categories of printers:

- **Impact printer:** It establishes a mechanical contact between the print head and the paper. There are various types of impact printers, such as line printers, drum printers and dotmatrix printers.
- **Non-impact printer:** It does not establish any mechanical contact between the print head and the paper. This printer was introduced to overcome the low speed and high cost of impact printers. Some well-known non-impact printers are inkjet and laser printers.

**9. Explain the different types of compact discs.**

**Ans.** A compact disc, also known as CD, is an optical media that is used to store digital data. It was originally developed to store and playback sound recordings; later on, it came to be used as a data storage mechanism. Compact discs are cheaper than other storage devices, such as hard disk or RAM. CDs are categorized into CD-ROM, CD-R and CD-RW:

- **CD-ROM (Compact Disc-Read Only Memory):** A CD-ROM is an optical disc that is primarily used to store data in the form of text, images, audios and videos. The data available on such discs can only be read by using a drive, known as CD-ROM drive. The maximum storage capacity of a CD-ROM disc is 700 MB of data.
- **CD-R (Compact Disc-Recordable):** CD-R has the ability to create CDs but they can write data on the disc only once. The data once stored in these discs cannot be erased. The CD-R technology is sometimes called the Write Once-Read Many (WORM) technology.
- **CD-RW (Compact Disc-Rewritable):** CD-RW (sometimes called Compact Disc Erasable) is used to write data multiple times on a disc. CD-RW discs are good for data backup, data archiving, or data distribution on CDs.

**10. Explain mouse and its types.**

**Ans.** A mouse is a basic input device of a computer. It controls the movement of the cursor or pointer on the display screen. As you move the mouse on a plain surface, the pointer on the display screen also moves in the same direction. The mouse is particularly useful in a Graphical User Interface (GUI) where you can point to an option or object on the screen and click the appropriate mouse button. The following are some common types of mouse:

- **Mechanical Mouse:** Refers to a mouse in which the movement of the cursor on the screen is relative to the movement of the ball at the base of the mouse. To use the mechanical mouse efficiently, you need a flat surface or mouse pad.
- **Optical Mouse:** Refers to a mouse that uses a Light Emitting Diode (LED) to detect the movement of cursor on the screen. This type of mouse does not work on a black or shiny surface.
- **Laser Mouse:** This type of mouse uses an infrared laser diode for detecting the mouse movement.
- **BlueTrack Mouse:** This type of mouse is based on the BlueTrack technology. The technology, introduced by Microsoft, states that the device can work on any surface from a granite countertop to the carpet.

## Chapter 3: Exploring Computer Software

**1. Define system software.**

**Ans.** The software that is responsible for controlling a computer's internal operations, handling input/output devices and scheduling tasks is known as system software. Some common examples of system software are OS (such as Fedora Linux, Windows 8.1 and Mac OS) and device drivers (such as sound card driver and display driver).

**2. Define the functioning of an operating system (OS).**

**Ans.** An OS enables users to conveniently handle the computer and make the best use of its hardware. Users can simply give a command to the OS as to what needs to be done and the OS decides how and when the task is to be done.

**3. Differentiate between interpreter and compiler.**

**Ans.** An interpreter is nothing but a compiler itself with a few differences. A compiler translates a program in one go, whereas an interpreter translates a program line by line. A compiler will list all the errors in the last, i.e., after going through the program completely. When the program is error-free, it will generate the object code. However, an interpreter checks for errors in each instruction or command and terminates the program as soon as it finds an error. On finding an error, the interpreter also prints the error messages immediately. Compilers are good for long programs, whereas interpreters are good for small and short programs.

**4. Discuss the spreadsheet program. Also, provide some examples of the spreadsheet program.**

**Ans.** A spreadsheet program allows you to organize, analyse and store data in a tabular form. It provides the basic arithmetic and mathematical functions. Modern spreadsheets also contain various built-in functions for common financial and statistical operations. It is specifically designed to organize data in tables and analyze the tabulated data in the desired manner. Some popular spreadsheet programs are Lotus 1-2-3, Microsoft Excel, OpenOffice Calc, Quattro Pro, Gnumeric and Google Sheets.

**5. What do you mean by specific purpose software?**

**Ans.** Specific purpose software is the software designed for a special purpose and according to the client's need. Some of the application software that belongs to this category are Enterprise Resource Planning (ERP) software, payroll software, e-commerce software, accounting software, human resource planning and management software. Tally is one of the most preferred specific purpose software for accounting.

**6. What do you understand by a database program?**

**Ans.** A database program allows you to store, sort and retrieve a large amount of data. Invoices or orders, which may be in large numbers, can be managed better by using a database program.

**7. What are the major components of the computer ecosystem?**

**Ans.** The major components of the computer ecosystem are as follows:

- Hardware
- Memory
- Operating System
- User

The function of the hardware is to provide basic computing resources such as CPU. The application program utilities define the way in which resources are used to solve computing problems of the users. The OS controls and coordinates the use of the hardware, whereas the user performs the computing tasks by using application software.

**8. List the different programming languages.**

**Ans.** In the history of computing, we generally divide programming languages into four generations:

1. First Generation Languages — 1GLs (Machine Languages)
2. Second Generation Languages — 2GLs (Assembly Languages)
3. Third Generation Languages — 3GLs (High-level Languages)
4. Fourth Generation Languages — 4GLs

9. What is utility software? List the different types of utility software with examples.

Ans. Utility software (or utility) is also known as service program, service routine, service tool, or utility routine. Utilities are defined as those helpful software applications that help a computer to perform various functions, such as analyzing and configuring data, optimizing and maintaining resources, etc. For example, the backing up data utility ensures the availability of data, the scanning utility facilitates the removal of obsolete files and folders and also helps recover data that has been deleted by mistake, and the virus cleaning utility ensures that the computer is not likely to be affected by malicious code or viruses.

The different types of utility software are as follows:

- **Text Editor:** Text editor is utility software that assists you to create an editable text file. You can type any textual content in the languages provided by the text editor, such as Hindi, English, French and German. The text once written in the text editor can be saved for future use. The text can be retrieved and edited later on as and when needed. Editing the text means you can insert, append, delete, find and replace the text.
- **Backup Utility:** The backup utility software helps to secure data. In general, the backup signifies duplicating the data stored in the permanent storage disk so that it can be used in case of disk failure or when your original files and folders get damaged. You can use it to back up not only files or folders, but also drivers. The main advantage of this utility is that the backed-up data can be restored, if the original files get damaged or lost.

10. Describe the language processor and its types.

Ans. A program is a sequence of instructions to be executed by a computer. An instruction is a command given to a computer to perform a particular function. Essentially, the instruction has to be in a language understandable by a computer, i.e., machine language. However, a programmer feels comfortable in writing programs in the human-readable format and not in the machine-readable format (or binary format, which contains only two numerals, 0 and 1). In general, we call the languages that are in the human-readable format as High-Level Languages (HLLs). On the other hand, the languages in the machine-readable format are known as Low-Level Languages (LLLs). Therefore, it is essential to process an HLL program into a low-level language so that it can be easily understood by the computer. The system program that performs this type of conversion is known as a language processor. The three important language processors are:

- **Assembler:** An assembler is a language processor that translates a program written in assembly language into a machine language program.
- **Compiler:** A compiler is a language processor that translates a high-level language program into a machine-language program.
- **Interpreter:** An interpreter is a language processor that translates a high-level language program, line-by-line, into a machine-language program.

## Chapter 4: Operating Systems

1. What is the significance of icons? Name any three types of icons.

Ans. Icons refer to graphic symbols that represent window elements. Examples of three types of icons are the application icon, the shortcut icon and the document or folder icon.

2. List any five features of the GNU Linux operating system.

Ans. Linux provides a number of features that are different from other operating systems. Some of its distinguishing features are:

- It is an open source operating system.
- It is virus-free.
- It is stable
- It has multiple workspaces.

**3. List any five important Linux distributions.**

Ans. Linux distributions are packages consisting of one or more programs that are required to perform a single function by an operating system. The five important Linux distributions are Ubuntu, Debian, Gentoo, KNOPPIX and Fedora.

**4. Discuss the standard directory structure of the Linux operating system.**

Ans. Every operating system organizes information into files. These files are stored in different containers known as directories. Directories help organize files in a computer.

**5. What is the significance of an operating system? Give some examples of operating systems.**

Ans. An operating system is the most important type of system software that acts as an interface between user and hardware resources of a computer system. It controls all the activities of a computer system. Some popular operating systems are Mac, Windows and Linux.

**6. Discuss the directory structure of the Linux operating system.**

Ans. In our home, we have cupboards or almirahs where we keep objects of our daily usage, such as clothes and books. A cupboard or almirah is divided into shelves. Further, shelves are divided into cabinets, and cabinets are divided into compartments. Generally, you keep similar type of objects in the same compartments/cabinets/shelves. In the same manner, files are arranged on the disk. For example, in the Linux operating system, all the files related to Linux are grouped together and kept in a single directory. In the computer system, the disk drive (similar to a cupboard) is divided into directories (similar to cupboard shelves), and each directory is further divided into subdirectories (similar to cupboard cabinet), and each subdirectory may also be divided into its subdirectories (similar to a compartment). If necessary, this process of division of directories may continue with the addition of more levels.

A file, in the context of a computer system, is a named collection of data stored on a storage device. In the Linux operating system, a file can be treated as an object that can be written to or read from a disk drive or both. Each file possesses some features and attributes, such as file name, file type or file access permission. To group similar types of files together, we create a directory and place those files in that directory. A directory may contain files as well as other subdirectories. This type of organized file structure is known as a multilevel or hierarchical directory structure.

**7. Write down the steps to delete a file or folder.**

Ans. The following steps to delete a file or folder are:

1. Select the file or folder that you want to delete.
2. Right-click the selected file or folder that you want to copy or move. A context menu appears.
3. Select the **Move to Trash** option from the context menu, which appears on selecting and right clicking the file icon.

**8. What do you understand by shutting down of a computer?**

Ans. You can switch off your computer if you have completed your tasks on the BOSS Linux operating system. You should not switch off your computer by directly pressing the power button. You need to shut down your computer in the correct manner to save your files on the hard drive. If you switch off your computer directly, you may lose some data, and the hard drive of the computer can also get damaged. When you shut down your computer properly, the BOSS Linux operating system saves all the settings and writes the information that is currently stored in the hard disk drive.

The following are the steps to properly shut down the BOSS Linux operating system:

1. Select the **system** menu. A drop-down menu appears
2. Select the **Power Off** option.  
A message box appears.

In the message box, click the **Power Off** button. The computer shuts down automatically in 60 seconds if you do not click any button present in the message box.

**9. Discuss the classification of an operating system.**

**Ans.** Today, various types of operating systems are available in the market. You can select one as per your requirement. Broadly, operating systems can be classified into the following seven categories:

- **Single-program operating system:** Executes only one program at a time. Only after the execution of the currently running program does the next program starts executing.
- **Multiprogram or concurrent operating system:** Allows the computer's CPU to execute more than one program simultaneously. Actually, only one program is executed at a time. But a multiprogram operating system switches between different programs so fast that it appears as if they are being executed simultaneously. It is the multiprogram operating system that decides the sequence of execution of different programs.
- **Time-sharing operating system:** Allows the concurrent use of a single computer by more than one user. In a time-sharing operating system, the processing of a task switches among various users based on the available time, which is controlled by the operating system. Each active user is given a certain time slot to share the CPU to execute a task. However, if this time slot is elapsed or the I/O operation is interrupted (due to the execution of another task that is high on priority), then the CPU switches to execute the priority task and the task being executed currently is put on hold.
- **Multiprocessing operating system:** Executes multiple programs simultaneously on a computer that has several CPUs, such as mainframes and supercomputers. Multiprocessing operating systems are much more complicated than single-program operating systems as they are required to allocate resources (such as printers or disk drives) to complete processes in a reasonable manner. Some examples of multiprocessing operating systems are Linux, UNIX, Windows 2000, Windows XP, Windows 7, Windows 8 and Mac.

**10. Describe the role of a kernel in an operating system.**

**Ans.** A kernel can be defined as a program that controls every aspect of a computer's hardware and software. It acts as a bridge between applications and hardware for data processing. A kernel achieves this functionality by interfacing between major components of a computer, such as CPU, memory, and input/output devices. A kernel also acts as a manager for computer resources, allowing other programs to run and use these resources optimally. Once you start a computer, the first member program of the operating system to be loaded is a kernel, which remains in the memory until the computer shuts down. The following are the responsibilities of a kernel:

- Managing various processes for executing applications
- Using device drivers to manage multiple devices
- Managing and allocating memory for multiple processes along with input/output calls
- Controlling essential services for its execution such as system calls

## Chapter 5: Communication Technologies and Multimedia

**1. Define LAN, MAN and WAN.**

**Ans.** LAN is a localized network used to connect a computer with other computers or hardware, such as a printer. This type of network is useful when you want to connect two different departments in a building. MAN is a bigger version of LAN and its technology is also similar to LAN. MAN covers an area larger than LAN but smaller than WAN. WAN is a type of network that is used to cover a wide geographical area or region. It links different metropolitans, countries and national boundaries.

**2. What is transmission media?**

**Ans.** Transmission media is a media that enables you to transfer data from one computer to another.



3. Explain the following related to a network:

- a. Workstation
- b. Protocol

Ans.

- a. In a network, each computer is known as a node or a workstation.
- b. The rules that govern computer communication are called protocols.

4. Explain the following terms related to communication technology:

- a. Communication channel
- b. Sender
- c. Receiver

Ans.

- a. A communication channel is a medium that carries information from one place to another.
- b. The sender is the person who sends or transfers data to the other person with whom he/she communicates.
- c. The receiver is the person who receives data from the sender.

5. What is unguided media?

Ans. An unguided media is a transmission media that uses waves to connect computers for transferring data. It is categorized into two types, namely long-distance wireless media and short distance wireless media.

6. Describe the components of a computer network.

Ans. The components of a computer network are almost similar to the components required for the communication through a telephone. In a computer network, the communication between two or more persons takes place through a collection of interconnected computers where computers are linked directly or through cables.

Computers can also be connected through a telephone. Therefore, telephone lines work as a communication channel for computers. When computers are connected through a telephone, an additional device is used that is known as a modem. A modem is used to convert signals generated by a computer to facilitate their transmission over telephone lines. The modem at the sender side converts the digital signals generated by a computer into analog signals and then transmits them to the selected user (computer) over the telephone line. The modem at the receiver side receives the signals and converts them into signals that are understandable by the computer.

7. Define the various types of a networking cable.

Ans. In wired communication, data is transmitted through cables. The various types of networking cables are as follows:

- **Twisted Pair Cable:** It contains two twisted wires that use copper as a conductor. These wires have plastic insulation and are twisted. The cable wires are twisted to provide protection against crosstalk and noise. The twisted pair cable is of two types that is Shielded Twisted Pair (STP) Cable and Unshielded Twisted Pair (UTP) Cable.
- **Coaxial Cable:** Coaxial cables can carry signals of higher frequency ranges than twisted pair cables. Coaxial cables are used in cable TV network and traditional Ethernet LANs.
- **Fiber Optic Cable:** It is a type of cable that contains one or more optical fibers coated with plastic layers. Due to their greater bandwidth, these cables can carry more data. These cables are thinner and lighter than metallic cables. The main disadvantage of this type of cable is that it is very expensive to install.

8. Explain the different types of wireless communication media.

Ans. The different types of wireless communication media are as follows:

- **Microwave:** It refers to a radio system that uses high frequencies to send and receive data or information. Due to high frequencies, microwave stations are located about 30 kilometres apart from each other. The

microwave media follows the **line-of-sight transmission**. In the line-of-sight transmission, data signal is transmitted in a straight line. Microwave systems have sufficient bandwidth capacity to support a large number of voice channels and one or two TV channels.

- **Radio Waves:** Radio waves are the longest electromagnetic waves in the electromagnetic spectrum. The wavelength used in radio waves is longer than that of visible light. The range of frequency of radio waves can be from as small as 30 kHz to as large as 300 GHz. These frequencies are divided into Very Low Frequency (VLF), Low Frequency (LF), Medium Frequency (MF), High Frequency (HF), Very High Frequency (VHF), Ultra High Frequency (UHF), Super High Frequency (SHF) and Extremely High Frequency (EHF).
- **Satellite:** The satellite wireless media is a special type of microwave media. This is because the satellite communication is a combination of satellite dish (that acts as an antenna), which is placed at the earth station and uses microwave to transmit data signals. The satellite wireless media uses a satellite that orbits the earth in a fixed position. These satellites act as a relay station for the communication signals. The data received by satellites is transmitted from the earth station, interpreted and then transmitted to another earth station. In this way, the data is easily transmitted from one earth station to another. The frequency of satellite communication is 1 to 50 GHz.
- **Infrared:** Infrared waves are the light waves of a lower frequency than those that the human eye can receive and interpret. In infrared wireless technology, the transmission of data takes place through infrared (IR) radiation. Infrared technology is used in most television remote control systems and with a standard called Infrared Data Association (IrDA), it is used to connect computers with peripheral devices.

## 9. Define HTTP.

**Ans.** HTTP (Hypertext Transfer Protocol) can be defined as a protocol working at the application layer of network communication. It is used to transfer files containing text, graphics, video, audio, images, etc. It works with the help of TCP/IP to exchange information with hosts. The main idea behind the design of HTTP is the connection of one Web page with another Web page using links. If a user has to jump from the current page to another linked page, he/she simply has to click the marked item on the Web page that contains a link to the desired page. This action triggers another HTTP request and the required Web page opens before the user. There are two versions available, HTTP 1.0 and HTTP 1.1. The latter version helps in fast loading of Web pages using a method called “persistent connection” which avoids establishing connection between the user and HTTP server for every request by creating a session and granting permission for a complete session.

## 10. What do you understand by Bluetooth?

**Ans.** Bluetooth refers to a wireless technology that creates small wireless networks, called personal area networks (PANs) between PCs and peripheral devices, such as keyboard, mouse, printers, etc. Bluetooth was named after the 10th-century Danish king, Harald I Bluetooth. The Bluetooth wireless technology enables you to establish a wireless communication between any two Bluetooth devices, such as mobile phones, laptops, cameras, or modem stations without any cables. For example, you can transfer data from your mobile phone to a laptop by connecting them via Bluetooth. The data transfer rate over the Bluetooth varies from 723 Kbps to 1 Mbps in a short range (the maximum range is 10 metres). The personal area network (PAN) created by Bluetooth is sometimes called a piconet. Up to 255 Bluetooth devices can participate in a piconet at one time.

# Chapter 6: Cyber Safety

## 1. What are the different criteria of a strong password?

**Ans.** A strong password for email accounts must fulfill the following criteria:

- Should be a minimum of eight characters long
- Should be a combination of words
- Should not be the name of any family member, important dates, name of pets, passport number, driver's license or your hobbies
- Avoid using dictionary words as passwords

- Must not include any part of the user's account name in the password
- Create a password that includes the characters of at least three types from the following categories:
  - Special characters, such as #, \$, %, @, and &
  - Numbers, such as 5,8,9,2, and 3
  - Uppercase characters, such as F,H,G,B, and K
  - Lowercase characters, such as x, j, y ,p, and w

## 2. How does a computer virus spread?

Ans. Computer viruses spread from one computer to another by attaching themselves to executable files or boot records of disks and diskettes. These can also be found in email attachments and other programs that are downloaded from the Internet. A computer virus spreads from one computer to another while:

- Executing an infected file on a computer
- Using infected external storage devices, such as CD, floppy disk and pen drive
- Opening infected email attachments
- Downloading infected files and gaming software from the Internet
- Using a local network to access infected files lying on other computers
- Surfing suspicious websites on the Internet

## 3. What is a firewall? Why is it used in a network?

Ans. Firewalls are software and hardware that protect networks, servers and computers from virus and hacker attacks. They are used to provide protection against unauthorized and unwanted communication between computers over a network. A firewall enforces strong authentication for a user who wants to access information and resources over the network. Firewalls protect a computer against security vulnerabilities and malicious activities on the Internet.

## 4. Enlist the risks involved with social networking.

Ans. Some risks involved with social networking are as follows:

- **Cyberbullying:** At times, the use of social networking can lead to cyberbullying or crimes against children. It can mislead teenagers to use inappropriate content.
- **Theft of personal information:** While creating accounts, you need to give your personal details. Sometimes, fraudsters steal this information and misuse it.
- **Fake profile:** Anyone can create a fake persona to pretend to be someone else and interact with another person. In such cases, both the individuals start sharing their personal information, which can be misused by the false person. Thus, social networking can deceive someone easily.

## 5. What are the common symptoms of a virus attack?

Ans. The common symptoms of a virus attack are as follows:

- The computer begins to run slowly.
- Unusual messages and graphics appear on the computer screen for inexplicable reasons.
- Music not associated with any of the open programs begins to play.
- Some program or data files on the computer either become corrupt or difficult to locate.
- Unknown files or subdirectories are created.
- The size/dates of executable files change on their own.
- The volume label of your hard disk changes mysteriously.
- Hardware devices begin to exhibit unusual behaviour.

**6. Discuss cookies.**

**Ans.** A cookie is a file that contains small textual information about the activity of a user. For example, it may contain your log-in details of a particular website, so that, when you visit the same website again, it retrieves the information about you from the cookie and automatically fills your log in details. Different types of cookies store different types of information about a user. For example, session cookies are used to track a person when he/she is currently navigating a website. When the person leaves the website for some time, the session cookie disappears. Tracking cookies are used for creating and storing user's long-term records during his/her multiple visits to a particular website. Authentication cookies are used for determining whether a particular user is logged in or not. Cookies are very useful for activity tracking but there are some threats attached to them. Some virus or malware can be transferred to your computer in form of cookies. Moreover, hackers can also steal your private or personal information stored in cookies.

**7. What is spoofing? What are its different types?**

**Ans.** Spoofing is the technique used by unethical hackers to certify fake data over the Internet for stealing confidential information. Spoofing can be done in two ways:

- **IP spoofing:** In this method, unethical hackers create IP (Internet Protocol) packets with a fake IP address to hide the true IP of the sender or pose as another computer's IP. An IP address is a unique address allocated to a computer on the network.
- **Email spoofing:** In this method, unethical hackers create e-mail messages with a fake sender address to certify their email.

**8. Discuss the concept of phishing with a suitable example.**

**Ans.** Phishing refers to a technique of obtaining personal information, such as login name, password and credit card details. Phishing normally takes place through e-mail or instant messaging. In phishing, an imposter sends you an e-mail or uses a website that looks genuine to trick people into giving important information about themselves. For example, the imposter may send an e-mail (which appears genuine to you), pretending to be a representative of your company. In the e-mail, he/she may ask you to update your information online by clicking a specified link. As you click the link, you may be redirected to a fraudulent website where you are asked to enter important information about yourself, which can later be used for cybercrime and fraud.

**9. Explain computer security? What should be done to keep the information secure in your computer?**

**Ans.** Computer security is the process of ensuring the integrity, availability, and confidentiality of computer data and resources against threats, viruses and vulnerability. On the other hand, information security refers to the protection of information. Security is implemented mainly through two processes, authentication and authorization. Authentication refers to the process of recognizing the identity of a user, while authorization is the process of providing access to various resources, such as databases and printers, to the authenticated users. Integrity, confidentiality, and availability of information should be maintained for securing information. You must follow these guidelines in order to secure your information:

- Avoid the temptation to open email attachments and downloads from unreliable sources.
- Resist the urge to double-click everything in your mailbox. If you get an unexpected file attachment, send an enquiry email to its sender. Ask him about the nature and function of the file attachment.
- Install reliable antivirus scanning software and download its updates regularly.
- Update the system and antivirus software on a regular basis.
- Install only licensed software.
- Scan files downloaded from the Internet or other external sources.
- Keep regular backups of your data.

**10. Explain the importance of maintaining privacy while using the Internet.**

**Ans.** Maintaining privacy refers to preserving confidentiality of information related to an individual or an organization.

The regulations that support privacy consider that every individual has the right not to publicize everything related to them. The issue of privacy includes the following:

- **Access to Personal Information:** Refers to the access to such information related to an individual, which he/she may or may not want to share. For example, the personal contact number, address, and relationship status are some of the personal information of an individual, which should not be made public without the individual's consent.
- **Ethical Responsibility of Business:** Involves fair disclosure of terms of employment, policy and procedures to be followed, and equal treatment for all the employees. Hurting the sentiments of any employee intentionally is an unethical practice by the employer.
- **Adequate Disclosure:** Involves maintaining balance between the right to information and privacy of an individual. The data that is not required to be disclosed should not be disclosed. In case, it becomes necessary to disclose any such information, prior consent must be taken from the individual to whom this information belongs to.
- **Personal Communication:** Involves unauthorized access to a personal communication between two parties without their consent. Every individual has the right to express his or her feelings to the extent that they do not hurt the sentiments of anybody else. Accessing the personal email inbox and reading personal mails of an individual is unethical.

## Chapter 7: Word Processing Tool — OpenOffice Writer

### 1. What is the purpose if using bullet styles in a word document?

Ans. While working in a document, sometimes we need to highlight some key areas of text in the form of lists for summarizing key points. To present these points precisely and clearly, bullet points are used.

### 2. Explain the concept of grouping in Writer.

Ans. Sometimes, we need to insert more than one drawing object in our document. By default, all the objects that we insert in our document are treated as separate objects. To treat all the separate objects as a single object, we need to group them.

### 3. What do you mean by text alignment?

Ans. While adding text in a document, you will find that each line of the text appears uniformly at an equal distance from the left margin of the page by default. Such a uniform setting of the text with respect to the page margins is called alignment.

### 4. Explain the word wrapping feature in Writer.

Ans. Word wrapping in Writer arranges the words according to the margins of your page. This means that if a word does not fit in a line, it is automatically placed at the beginning of the next line.

### 5. What is a word processor?

Ans. Word processor is a computer application used to create, edit and organize a document to make it attractive and flawless. MS-Office and OpenOffice Writer are some popular word processors.

### 6. Define indention in Writer.

Ans. Usually, you start a new paragraph a bit away from the left margin. **Indentation** refers to the space between the text and the page margins. Indents are of three types, which are described as follows:

- **Positive Indent:** Keeps the text a little inward from the margin.
- **Negative Indent:** Keeps the text a little outward from the margin.
- **Hanging Indent:** Keeps the text a little inward from the first line. The hanging indent is generally used for bulleted terms, numbered lists, and glossary terms.

**7. Write two ways of checking spelling and grammar in a word processor.**

**Ans.** The following are the two ways of checking spelling and grammar of a document in Writer:

- **AutoSpellcheck:** It refers to a utility that automatically checks the spelling and grammar mistakes in a document. If the AutoSpellcheck option is activated, then as you type, the Writer automatically checks the input and underlines the possible spelling and grammar mistakes. To correct an underlined wrong word, right-click on that word and select the correct option from the context menu.
- **Spelling and Grammar:** Refers to a utility that you need to start manually for checking spelling and grammar mistakes. To use this option, select the **Tools→Spelling and Grammar** option from the Menu bar. The Spelling and Grammar option helps you scan the entire document for language errors and correct those errors.

**8. Briefly explain paragraph indentation in Writer.**

**Ans.** To impart the desired indentation or indent to a paragraph in a Writer document, first select the paragraph. After paragraph selection, select the **Format→Paragraph** option on the Menu bar. The **Paragraph** dialog box is displayed. In the **Paragraph** dialog box, the **Indents & Spacing** tab is shown as the active tab by default. You can use the options of the **Indents & Spacing** tab to specify the desired indentation for the selected paragraph. The following are the different indents available in the **Indents & Spacing** tab:

- **Before text:** Specifies the left indent.
- **After text:** Specifies the right indent.
- **First Line:** Specifies the first line indent.

For positive indent, you need to provide a positive value and for negative indent, you need to provide a negative value.

**9. How is the horizontal alignment different from the vertical alignment?**

**Ans.** In the horizontal alignment, text is aligned with respect to the left and right margins of the page. The horizontal alignment is of four types:

- **Left Alignment:** Aligns the selected text with respect to the left margin. This is the default alignment.
- **Right Alignment:** Aligns the selected text with respect to the right margin.
- **Centre Alignment:** Aligns the selected text between the left and right margins.
- **Justified Alignment:** Aligns the selected text with respect to both left and right margins.

In the vertical alignment, text is aligned with respect to the top and bottom margins of the page. In Writer, three vertical alignment options are available: Top, Bottom and Centre. You can align the text vertically by using one of the options from the submenu that appears when you select the **Format→Alignment** option from the Menu bar.

**10. Write steps to insert a column in a table.**

**Ans.** The steps to insert a column in a table are:

- *Right-click* the cell on which the cursor is placed. A context menu appears.
- *Select* the **Column→Insert** option in the menu. The **Insert Columns** dialog box appears.
- *Click* the up or down arrow beside the **Number** spin box to add the required number of columns.
- *Select* the radio button beside the **Before** or **After** option in the **Position** section according to the requirement.
- *Click* the **OK** button. The specified number of columns are added.

## Chapter 8: Spreadsheet Tool — OpenOffice Calc

### 1. Why chart is a better mechanism than the text content to explain worksheet data?

Ans. Graphics are always considered a good medium to attract readers. Similarly, a chart is a good medium to graphically present important data. It is the best way to compare and show the relationship between two data items, such as the sales volume of a product in two years.

### 2. Does the number formatting affect the actual cell value?

Ans. No, when we format a number, it does not affect the real cell value, which is used to perform calculations. Formatting only changes the outlook or appearance of the number data without affecting its value.

### 3. What is an embedded chart?

Ans. The chart that is fixed with the source data in a worksheet is known as an embedded chart.

### 4. What is a chart sheet? Does Calc support chart sheets?

Ans. A sheet that contains only one chart and does not display its source data is called a chart sheet. It is mainly used when you want to view or print the chart. Calc does not support chart sheets.

### 5. Which key combination is used to select an entire worksheet?

Ans. The Ctrl + A is used to select an entire worksheet.

### 6. How is a worksheet different from a workbook?

Ans. A worksheet in the OpenOffice Calc application refers to a single sheet. On the other hand, a workbook refers to a collection of such worksheets.

### 7. Define absolute referencing.

Ans. In absolute cell referencing, cell references in a formula remain the same even when the formula is copied to a new location. For absolute cell referencing, you need to use the \$ (dollar) symbol as prefix before the column and row names in a formula.

### 8. Explain the different types of charts available in Calc.

Ans. The different types of charts available in Calc are:

- **Column Chart:** A column chart is used to emphasize the comparison of data items within a specified time period. To highlight the changes within a specified time period, the column chart organizes the values vertically and categories horizontally.
- **Bar Chart:** A bar chart is used to demonstrate comparison among individual items. It is mainly used to highlight a comparison of values; therefore, it organizes values horizontally and categories vertically.
- **Pie Chart:** A pie chart is a round chart that is divided into zones to demonstrate the proportional size of an item with respect to the sum of all the items. The pie chart only displays one data series
- **Area Chart:** An area chart is generally used to highlight change over time. This chart also depicts the relationship of parts to a whole by displaying the sum of plotted values. There are three types of area charts – Normal, Stacked and Percent Stacked.
- **Line Chart:** A line chart is a type of graph that displays data trends at regular intervals. It is the basic type of chart that is used to highlight the changes that occur in a value within a specified period of time. It contains a series of points that signify individual measurements with line segments.

### 9. Define formatting in a worksheet.

Ans. Formatting data helps in enhancing the appearance of a worksheet. You can make your data bold, italic, or underlined to attract the viewer's attention. Data formatting has numerous forms, such as number formatting



and text formatting. For example, in a worksheet containing students' marks, you may want to highlight the 'A' grade students with green colour and 'B' grade students with blue colour. You can do this easily in Calc through data formatting.

**10. What do you understand by an argument?**

**Ans.** Arguments refer to the values or cell references that are passed to a function. Arguments are passed within the parentheses used in functions. An argument can be of any type, such as numbers, text and Boolean values, such as true or false. In addition, you can also pass formulas or other functions as arguments.

## Chapter 9: Presentation Tool — OpenOffice Impress

**1. How can you select the continuous and non-continuous slides in your presentation?**

**Ans.** To select continuous slides, we need to press the Shift key and then click the range of slides that we want to select. To select non-continuous slides, we need to press the Ctrl key and then click each slide that we want to select from our presentation.

**2. What is a template?**

**Ans.** Template is a basic model that provides the basic structure to create a document or presentation easily and quickly. Templates offer sets of different pre-defined visual elements that we can customize according to our requirements.

**3. Define slide master.**

**Ans.** A slide master helps in defining the formatting and layout of all elements that are used for creating a slide. The slide master can contain all the elements, such as text, picture, header, footer, slide number and so on, that a slide can have. In Impress, each slide in a presentation is based on a single slide master. A presentation can have more than one slide master.

**4. What are the basic elements of a slide?**

**Ans.** The following are some basic elements of a slide:

- **Title:** Refers to the heading of the slide. The title element provides a basic idea about the topic and content of the presentation.
- **Subtitle:** Refers to the description of the slide data. It also gives emphasis to the central idea of the slide.
- **Drawing objects:** Refer to the various built-in shapes provided by Impress. These include auto shapes, such as curves, lines and flowchart.
- **Clip art and pictures:** Refer to the graphical objects that help in enhancing the appearance of a slide. The OpenOffice Impress provides built-in pictures in the picture gallery.
- **Graph:** Refers to the graphical object that allows you to draw relationship between objects in a slide.

**5. Define presentation software.**

**Ans.** Presentation software is a special type of software that helps us create attractive, eye-catching and professional-looking visual aids for users, such as computer images, paper printouts and photographic transparencies. These visual aids help us communicate our ideas, messages, and other information in an easy and effective manner.

**6. How many types of slide masters are supported by Impress?**

**Ans.** In Impress, there are three types of slide masters:

- **For slide:** Designs the theme applicable on slides
- **For notes:** Designs the theme applicable on notes
- **For handouts:** Designs the theme applicable on handouts.



**7. What is the significance of adding header and footer to a presentation?**

**Ans.** Suppose you want to include certain information such as the title or the page number on every slide of a presentation. In such a situation, you can specify this information either in the header or footer of the slide. Header refers to the portion of the page that appears just below the top margin of the slide, while footer refers to the portion that appears just above the bottom margin of the slide. You can make your presentation more attractive and eye-catching by adding headers and footers in the slides.

You should remember that to add header, footer, date and slide number placeholders to the Slide Master, you need to use the Master Elements dialog box. To open the Master Elements dialog box, select View→Master→Master Elements option. The Master Elements dialog box appears.

You need to check the desired check boxes to add them to the footer of a slide. After you have checked the required check boxes in the dialog box, you can open the Slide Master view of the presentation to apply the format to all the slides in the presentation. In the Slide Master view, you can select the desired placeholder to enter the footer on all the slides. After completing the work, you can close the Slide Master view by clicking the Close Master View button.

**8. Define the Slide Sorter view and its significance.**

**Ans.** In Impress, the Slide Sorter view refers to a view that shows thumbnail versions of all your slides arranged in horizontal rows. This view is useful to make global changes to several slides simultaneously. Using the Slide Sorter view, you can easily arrange the order of slides, create duplicate slides and also delete them. You can easily switch to the Slide Sorter view by clicking the Slide Sorter button available on the top of the slide.

**9. What do you understand by animation?**

**Ans.** Animation refers to the process of creating a visual illusion of movement by quickly changing text or images in a sequence. In OpenOffice Impress, animation effects are used to move objects and also to specify how the objects should appear during a slide show.

**10. Explain the views of a slide.**

**Ans.** Views refer to the mode of viewing presentations. In Impress, there are six types of views, such as Normal, Outline, Notes, Handout, Slide Sorter and Slide Show. Each of these views displays a distinct picture of the presentation, enabling you to focus on different aspects of the presentation at different times. When you create a presentation in the Impress, it opens in the Normal view. Various types of slide views are explained as follows:

- **Normal View:** Allows you to format, design and add text, graphics and animation effects to the slide. The normal view is the default view for creating slides.
- **Outline View:** Shows all the slides of a presentation in the numbered sequence and their contents in the outline form. This view helps you modify your presentation easily and efficiently.
- **Notes View:** Allows you to add or edit notes in the slides
- **Handout View:** Contains 1 to 6 thumbnails of the slides. A handout is a special view of a presentation, which is meant to be printed and distributed to the audience.
- **Slide Sorter View:** Displays all the slides of a presentation. In this way, you can verify the order of slides and also verify whether the presentation has been completed or not.
- **Slide Show View:** Allows you to see each slide of your presentation in full screen on your computer.

## Chapter 10: Scratch

**1. What is Scratch?**

**Ans.** Scratch is a visual programming language and online community environment that allows users to create games, interactive stories, simulations and animations, and also to share them online.

**2. What is Sprite?**

Ans. In Scratch, a cat character is called a Sprite which understands and obeys the instructions that you give it.

**3. What is Stage in Scratch?**

Ans. It is a blank area where we can add different Sprites and backdrops. The Stage is where your Sprites move, draw, and interact. The center of the Stage has an x-coordinate of 0 and a y-coordinate of 0.

**4. What is the difference between a Scripts area and script?**

Ans. Scripts area is a region where blocks can be dragged and dropped in an arrangement to develop coding scripts. On the other hand, script is a block or a group of blocks arranged to carry out a task.

**5. What is the purpose of motion blocks?**

Ans. Motion blocks are used to control movement, rotation and position of Sprites on the Stage.

**6. Discuss about Scripts area.**

Ans. Scripts Area is a region where blocks can be dragged and dropped in an arrangement to develop coding scripts. When you drag a block around the Scripts area, a white highlight indicates where you can drop that block to form a valid connection with another block. It is not necessary to complete scripts to run them, which means you can test your script as you build it. You can run a complete or partial script by just clicking anywhere on it. You can also easily disassemble a stack of blocks and test each of them individually.

**7. Explain the Blocks palette in detail.**

Ans. Blocks Palette is a palette that contains a list of blocks. A block is an instruction for Sprite or Stage to carry out a task. In Blocks Palette, a notch exists at the top of the block and a bump exists at the bottom of the block. The presence of a notch in a block allows another block to be attached to it. On the other hand, a bump means the block can be attached to another block. In Scratch, blocks are divided into 10 categories (palettes): Motion, Looks, Sound, Pen, Data, Events, Control, Sensing, Operators, and More Blocks.

**8. Describe the purpose of control blocks.**

Ans. Control blocks are used for controlling scripts. The colour code used for recognizing these blocks is gold. There are eleven control blocks including one hat block, five C blocks, 3 stack blocks and 2 cap blocks.

**9. Write the steps to change the backdrop of Sprite.**

Ans. The steps to change the backdrop of Sprite are:

- ➊ Click the **Choose backdrop** from the library icon to open Backdrop Library. The **Backdrop Library** window appears.
- ➋ Select a category.
- ➌ Select a backdrop.
- ➍ Click the **OK** button to add the backdrop to the Stage.

**10. Write the steps to save a project in Scratch.**

Ans. The steps to save a project in Scratch are:

- ➊ Select the **File → Save as** option.
- ➋ The **Save Project** dialog box appears.
- ➌ Navigate the hard drive location where you want to save the file.
- ➍ Enter a file name, for instance, **Hexagon**.
- ➎ Click the **OK** button.

The project gets saved with the name Hexagon.sb2. Now, you can close the Hexagon.sb2 project.

# Chapter 11: Python

## 1. What is the role of Python Virtual Machine?

Ans. In Python, it is necessary that the byte code obtained after program compilation should get converted into machine code so that a machine can understand and execute the code. For this conversion, Python Virtual Machine (PVM) is required. PVM uses an interpreter which can understand the byte code and translate it into the machine code. The computer processor further executes these machine code instructions and displays the results.

## 2. How is memory allocation done in Python?

Ans. In Python, everything is considered as an object and for every object, allocation of memory is done. The job of memory allocation needed for objects is done by the memory manager present inside the PVM. The memory allocated to all the objects is known as heap. It is allocated at runtime or dynamically.

## 3. Is Python scalable? Explain in detail.

Ans. Programs developed in Python are scalable in nature which means they can be executed or moved on to other operating systems or hardware. The programs developed in Python are highly scalable as they can be executed on a new platform and are capable of using the features of the new platform effectively for their performance.

## 4. What is the purpose of the interactive mode in Python?

Ans. The interactive mode in Python, also called Python IDLE, is mainly used for executing a single line of statements and viewing the results.

## 5. What do you understand by the platform independent feature of the Python language?

Ans. Whenever a Python program is compiled in Python compiler, a byte code is generated. The byte code instructions can be executed on any computer system with the help of Python Virtual Machine (PVM).

## 6. Explain the 'batteries included' in Python.

Ans. The huge library of Python comprises a large number of small applications, which are created already and can be available immediately to programmers. These small packages are easy to use and maintain. Some useful batteries or packages in Python are numpy, argparse, boto, CherryPy, cryptography, Fiona, jellyfish, etc.

## 7. What are comments? Why are they useful?

Ans. A comment is useful to describe the elements of a program. Comments are not executed in the final result. Hence, it is not compulsory to write comments; however, comments improve understanding of a program.

## 8. Write a short note on JIT compiler.

Ans. JIT compiler can convert the byte code into machine code but with greater speed than an interpreter. This compiler has improved the execution of a Python program and thus improves the performance.

## 9. What do you understand by classes and objects in Python?

Ans. A class can be defined as an abstract idea, which can specify common behaviour of several objects of the class. An object can be defined as an entity that has physical existence in the real world.

## 10. Discuss binary operators with a suitable example.

Ans. The arithmetic operators that operate on two operands are called binary operators. Suppose you write  $x + y$ . In this case, the operator '+' is acting on two operands 'x' and 'y'.