

Dear Students!!

In this e-book of 11th class, study material of computer science is being sent to you as per new syllabus (2024-25). You can easily prepare your test / papers by reading the contents in this file. Following are the links of the video lectures (for HTML and C Language) for various practical topics of your syllabus for better understanding of various concepts.



11th Class - Monthly distribution of Computer Science Syllabus & Video Lecture Links (Pbi)

How to do HTML Practical on Mobile?

<https://youtu.be/PYFuKCwdIOY>

HTML Part-1

<https://youtu.be/DcYz0QX9CVs>

HTML Part-2

<https://youtu.be/qLlzLKrbhIA>

Programs, Programming & Programming Languages

https://youtu.be/CKwC8oeOw_o

Introduction to C Language: Part-1

<https://youtu.be/G9ZaHvTd5sU>

Introduction to C Language: Part-2

<https://youtu.be/8NXsnDCr1ho>

Introduction to C Language: Part-3

<https://youtu.be/aU06gTkp82k>

Operators and Expressions in C

https://youtu.be/PGv1_8Q5fh8

Control Statements in C - Branching

<https://youtu.be/xi-38dRt3mY>

Control Statements in C – Looping & Jumping

<https://youtu.be/NIkDGAr-AjE>

C Language – Practical Video Lectures

C Language Practical -1

<https://youtu.be/8hg3BJAyBqE>

C Language Practical -2

https://youtu.be/v_lw8wmfIP4

C Language Practical -3

<https://youtu.be/RBq--darc0I>

Following is the Link of Playlist for detailed Lectures on C Programming

<https://youtube.com/playlist?list=PLja3EaJFAjmYjeAcDs0ZQdVmx7liCtg5P>

PLEASE DO NOT FORGET TO LIKE, SHARE AND SUBSCRIBE OUR YOUTUBE CHANNEL

 **YouTube** <http://youtube.com/c/computersciencepunjab>

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Please use the following link to download the study material/e-books/e-contents for 6th to 12th classes:

<http://cspunjab.nirmancampus.co.in/study.php>

Que: 1 Fill in the Blanks:

1. For creating web pages using HTML, we require any simple _____.
2. _____ CSS property is used to set the space around the elements.
3. HTML is used to organize text, images and other webpage's _____ into webpages.
4. By using _____ the design of websites and webpages can be designed in a very simple and effective way.
5. The design of _____ should be simple and uniform

Ans: 1. **Text Editor** 2. **Margin** 3. **Elements** 4. **CSS** 5. **website**

Que:2 Writ the full forms:

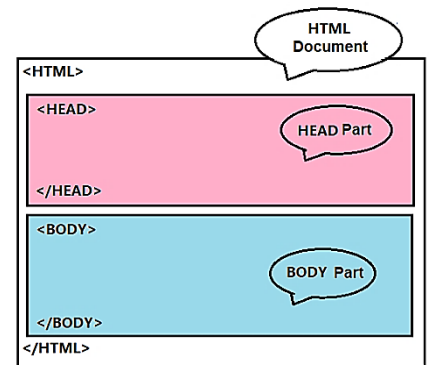
1. **W3C** : World Wide Web Consortium
2. **CSS** : Cascading Style Sheets
3. **HTML** : Hypertext Markup Language
4. **WYSIWYG** : What You See Is What You Get
5. **HREF** : Hyperext Reference
6. **<A>** : Anchor Tag

Que:3 Short Answer Type Questions

Q:1. Write the basic structure of HTML.

Ans: HTML document begins from <HTML> tag and ends with </HTML> tag. Structure of HTML document can be divided into two main parts:

- **Head Part:** This part begins with <HEAD> tag and ends with </HEAD> tag. This part contains the title and metadata of the HTML document.
- **Body Part:** This part begins with <BODY> tag and ends with </BODY> tag. This part contains all those contents that are displayed on the web page.



Q:2. Write various Website Development Phases.

Ans: Following can be the various phases of website development:

- | | |
|--------------------------|-----------------------|
| i. Information Gathering | iv. Development |
| ii. Planning | v. Testing & Delivery |
| iii. Design | vi. Maintenance |

Q:3. Write the role of HTML in the WEB.

Ans: HTML plays an important role in web designing. Web would not be possible without HTML. HTML is the default language for designing websites. HTML code is used to design static webpages. This code is understood by the web browser. Web browsers make the HTML code viewable and display it on our computer screen.

Q:4. Why CSS is used in web pages?

Ans: CSS stands for Cascading Style Sheets. It is a simple web designing language which is used to make web page-design simple and effective. In simple words, we can say that it is a language to design web pages which is used to improve the look & feel of a web page. CSS is easy to learn and understand. It is commonly used to build websites with html.

Que:4 Long Answer Type Questions. (Write the answers in 10-15 lines)

Q:1. Explain the principles of good web design.

Ans: Following are some of the principles for a good web design:

- **Simplicity:** The design of the webpage should be simple and its navigation should be easy
- **Consistency:** The design of every webpage in the website should be consistent
- **Typography and Usage Text:** The text on the website should be clean and readable. Text should be managed in such a way that the search engine will be able to index the webpages easily.
- **Multidivisional Design:** Web design should be in such a way that content of web pages are properly displayed on screens of different sizes (Mobile/Laptop/Monitor etc).
- **Social Sharing Feature:** Every section of the website should be designed in such a way that the information available on the website can be easily shared on social media.

Q:2. How CSS can be used for web design.

Ans: Following are the three common ways to use CSS for designing web pages:

- **Inline Style:** When CSS code is used within the HTML tags of body section, it is called the inline style. This style works only on those tags on which it is defined. For example:

```
<p style="color:red; border:2px solid;">This is an inline css example.</p>
```
- **Internal Style Sheet:** When CSS code is written in <head> section of webpage using the <style> tag, it is called the Internal style sheet. Such styles can be applied on the elements of entire webpage.
- **External Style Sheet:** When CSS code is written in a separate file, it is called external style sheet. This separate file should have .css extension. Such styles can be applied on the elements of different webpages of a website so that all the webpages can have similar appearance.

Q:3. What are the benefits of CSS?

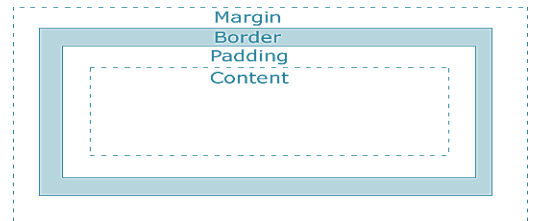
Ans: Following are some of the important benefits of CSS:

- **Time saving** - CSS code can be used repeatedly as needed. Same style sheet can be reused for multiple web pages.
- **Speed (fast webpage loading)** – Web pages developed using CSS load very fast in the web browsers. It also decreases the size of web pages.
- **Easy Maintenance** - Changes made in CSS coding file at one place automatically apply changes on related web pages. So it becomes easier to maintain our website.
- **More Powerful** - Webpages can be designed in a much better and simpler way using CSS. It has more properties than html.
- **Multiple Device Support** – Web pages that are designed using CSS can be displayed correctly on different screen sizes (Mobile/Laptop/Monitor etc).

Q:4. Explain CSS box model.

Ans: The term box model is used in connection with design and layout of web pages. Each element of html is a box in a way. The web browser renders every element as a rectangular box according to the CSS box model. Box-Model consists of multiple properties. It includes:

- Margins
- Borders
- Padding and
- Actual Content.



The given image illustrates the concept of box model with its various attributes.

Chapter 2nd
Usage of Internet

Que1: Multiple Choice Questions

- 1. We can locate a job on**
 a. Newspaper b. Internet c. Both (a) and (b) d. None of these
- 2. The collection of information which is accessed via the Internet.**
 a. Data b. Information c. World Wide Web d. Web
- 3. These searches are useful when we don't know the full text of a quote.**
 a. Wildcards b. Operators c. Image d. News
- 4. It is a photo and video sharing social media app.**
 a. Facebook b. Instagram c. Both (a) and (b) d. None of these
- 5. It is the most popular product of Google.**
 a. bing.com b. google.com c. wikipedia.com d. yahoo.com

Que:2 Fill in the Blanks:

1. _____ allows us to view and access websites on the Internet
2. Action or activity of buying goods or services over the Internet is known as _____
3. _____ is a web-based tool that enables users to locate information on the World Wide Web.
4. Enclosing a search term within _____ prompts the search engine to search for that specific word or phrase.
5. Without a subscription with _____, we won't have a connection to the Internet

Ans: 1. **Web Browser** 2. **Online Shopping** 3. **Search Engine**
 4. **Quotation Marks** 5. **Internet Service Provider**

Que:3 Very Short Answer Type Questions

Q:1 A company that provides Internet connections and services to individuals and organizations is known as _____?

Ans: Internet Service Provider (ISP)

Q:2 What is the full form of HTTPS?

Ans: Hyper Text Transfer Protocol over Secure socket layer

Q:3 Which tool is used to search only for job?

Ans: Job Search Engines

Q:4 What is the method of saving a web page's address called?

Ans: Bookmark or Favorites

Q:5 Name any one free, open content online encyclopaedia.

Ans: wikipedia.com

Que:4 Short Answer Type Questions.

Q:1 Define Web browser?

Ans: Web Browser is an application software. We can easily access the websites over the internet with the help of web browsers. It helps user to find web pages, to access them and to display them on screen. For using websites, users have to provide the URL (Uniform Resource Locator) of sites in the address bar of the browser. Internet Explorer, Google Chrome, Firefox, Opera etc. are the examples of commonly used web browsers.



Q:2 What is the use of quotation marks in online search?

Ans: During online search, when we enclose the search term in quotation marks, the search engine will find only that particular term or phrase on the web and will not show the similar terms in the search result. For example: if we begin our online search by typing the term movie director, the search engine may show a lot of results similar to 'movie', 'director', 'movie director' or 'film director' etc. But if we begin our search by enclosing the search term in quotation marks (i.e. "movie director"), search engine will show results only related to that particular term 'movie director'.

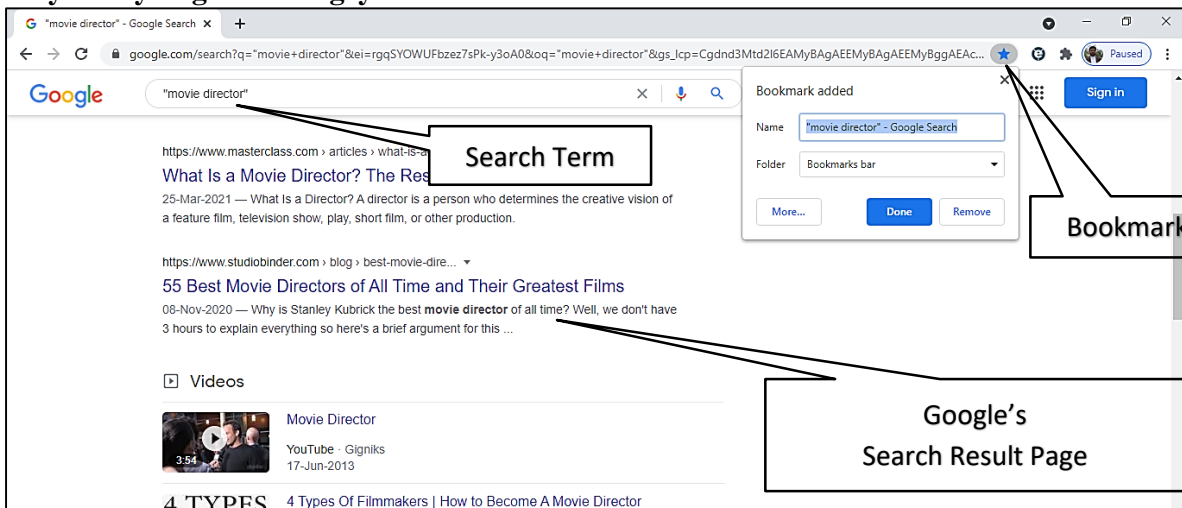
Q:3 Name any five Internet Security Threats.

Ans: Following are the common internet security threats:

1. Hackers
2. Viruses
3. Spyware
4. Worms
5. Phishing
6. Spamming

Q:4 Explain Google Search Engine.

Ans: Google search engine is the best search engine in the world. It is one of the most popular products of Google. Google has become one of the most popular and trusted search engines in terms of quality of search results. Google is using a sophisticated algorithm to deliver the best results to its users. Google is founded by Larry Page and Sergey Brin.



Q:5 What is Bookmark?

Ans: Bookmarks are also known as Favorites. Web addresses can be saved with the help of bookmarks so that whenever we have to open that web address again we can quickly re-open it without having to type it again. All web browsers offer the option to save the web address. Internet Explorer is the only web browser that uses the word Favorites to save a web address. In Mozilla Firefox, Google Chrome, etc. this option is called Bookmark. To set a bookmark, click on Star in the web browser's address bar.

Q:6 Define World Wide Web?

Ans: The World Wide Web (WWW) is also known as the Web or W3. It is a huge collection of different types of information. It includes all public web sites that are connected to the Internet worldwide. Each website/page is assigned a unique name/address, called a URL (Uniform Resource Locator). Information stored on the www can be viewed with the help of web browsers (Internet Explorer, Mozilla Firefox, etc.). World Wide Web uses HTTP protocols to transfer the contents of webpages.

Que:5 Long Answer Type Questions.**Q:1 Explain any four online search techniques.**

Ans: When we search information using search engines, we can make our search more effective by using certain search techniques. Here are some key search techniques:

- **Using specific keywords:** Keywords are the search terms that we use to find the contents on the Internet. Keep keywords as specific as possible.
- **Using Quotation Marks:** When we enclose the search term in quotation marks, the search engine will search only for that particular word or phrase on the web. It will not show results with similar words.
- **Search for a specific site:** When we want to limit our search to a specific site, we can search using 'site:'. For example: site: www.pseb.ac "result" will show all the pages from www.pseb.ac.in in which the word "result" is written.
- **Related site search:** Another useful operator is 'related:'. Type it in front of a web address that we already know about. For example: related: abc.com. It will show all the websites that are similar to abc.com

Q:2 What are the advantages and disadvantages of online shopping?

Ans: Following are the advantages and disadvantages of online shopping:

Advantages of Online Shopping	Disadvantages of Online Shopping
Convenience	Negative Environmental Impact of Packaging
Better Prices	Shipping Problems and Delays
More Variety	Risk of Fraud
Easy to Send Gifts	Spending Too Much Time Online
More Control	Returns Can Be Complicated
Easy Price Comparisons	We Don't Know Exactly What we are Getting
No Crowds	

Q:3 What is social networking? Explain any two social networking sites.

Ans: Social networking means staying connected with friends, family members, colleagues or customers using Internet-based social media sites. Facebook, YouTube, Twitter, LinkedIn and Instagram are some of the important social media sites:

- **Facebook:** Facebook is the largest social media site. Many people use it for social or commercial purposes. We can share our content on Facebook in various formats such as text, images, videos, live videos, and stories. To use Facebook, we need to create an account on it.
- **YouTube:** YouTube is a video sharing platform. We can create our own YouTube channel where we can create and upload videos. People who watch videos are able to like, share and comment on our videos.

Q:4 What is the Facility of FASTag in travelling? What are its benefits?

Ans: FASTag is a tag that automatically deducts toll charges at toll plazas. Using it, we can pass through the toll plaza without stopping for the cash transaction. FASTag is linked to a prepaid account from which the amount of toll charge is deducted automatically. FASTag uses RFID (Radio-Frequency Identification) technology. FASTag is the perfect solution for easy travel on national highways.

Benefits of using FASTag:

- **Ease of Payment:** Toll charges are automatically deducted from FASTag's prepaid. There is no need to carry cash for toll expenses during the journey.
- **Time saving:** There is no need to stop for cash transactions at the toll plaza, this saves time.
- **Online Recharge:** FASTag can be recharged online through Credit Card/Debit Card/NEFT/RTGS or Net Banking.
- **Message Alerts:** SMS Alerts related to transactions are received at toll plazas.
- **Validity:** The validity of FASTag is five years.

Que1: Multiple Choice Questions:**1. Cyber word is taken among which of these?**

- a. Cybercrime b. Cybernetic c. Cyber-attack d. Cyber security

2. Copying and selling of software or any computer-based material is known as:

- a. Phishing b. Stalking c. Piracy d. Hacking

3. A malware which acts like a spy in computer system:

- a. Spyware b. Computer virus c. Adware d. Ransom ware

4. Which type of security technique which converts password to special signs?

- a. Strong password b. Firewall c. Digital signature d. Encryption

5. IT Act 2000 is known by which another name?

- a. IT Act 2008 b. ITA 2000 c. Information Act d. Income Tax Act

6. An electronic environment in which internet users communicate with each other:

- a. World Wide Web b. Internet c. Cyber space d. Cyber café

Que:2 Fill in the Blanks:

- _____ corrupt the computer system.
- _____ is a digital code which is used to Transmit or verify documents online.
- Antivirus software keeps our computer safe from _____
- _____ acts as secure wall in the computer system.
- Any unauthorized person alters the website with the use of _____
- URL's of servers connected with internet are stored at _____

Ans: 1. Malware 2. Digital Signature 3. Virus 4. Firewall 5. Web Jacking 6. WWW

Que:3 Write the Full Forms:

- IT** : Information Technology
- WWW** : World Wide Web
- CERT-IN** : Indian Computer Emergency Response Team
- ITA 2000** : Information Technology Act 2000
- URL** : Uniform Resource Locator

Que:4 Short Answer Type Questions.**1. What is Piracy? Define it?**

Ans: Piracy is a cyber-crime in the series of cyber threats. When a software or other content is copied and sold in the market by a person without the consent of its original owner, such crime is called Piracy. Piracy causes financial loss to the original owner of the software or content. Nowadays, piracy of various software, audio and video contents becomes common.

2. What do you know about Web Jacking?

Ans: Web Jacking is also a cyber-crime. This is an unauthorized action like hijacking. It involves hacking into a web site by a hacker for personal gain and altering the information on that web site. The website of the Ministry of Information Technology and the Bombay Crime Branch was recently hacked by web hackers which was an unauthorized online activity. Such activity by hackers is called Web-Jacking.

3. What are Salami Attacks?

Ans: Salami attack is also a cyber-crime. Such online attacks are more common in the banking sector. In these online attacks, a small amount of money is transferred to Attacker's account from the accounts of a person after regular short time-intervals. The customer is not even aware of this because such online attacks target only those accounts where the amount is often more and the transactions are frequent.

4. Give a brief description about antivirus software?

Ans: Antivirus is software that protects our computer from any kind of virus. It is also called anti-malware because any virus is a malware against which it works. This software prevents viruses from entering into our computer and even if virus enters into the system, it removes viruses by scanning the computer system. Many types of antivirus software are available such as AVG, Avira, McAfee, Avast, Kaspersky, Ad-Aware, Norton etc.

5. Differentiate between Cyber-Space and WWW (World Wide Web)?

Ans: Cyberspace is an electronic environment in the world of the Internet that cannot be seen or captured, but can only be felt emotionally. Internet users communicate with each other in this

environment. This is different from the World Wide Web. WWW is an information system that stores the URLs of all web servers connected to the Internet and links to various web pages. It is WWW that creates the electronic environment called cyberspace.

6. Tell four objectives of IT Act 2000?

Ans: The main objectives of the IT Act 2000 are as follows:

1. Legalize electronic notification and data communication
2. Facilitate online storage of data or information
3. Establish a legal framework for the prevention of cyber crimes
4. Recognition of Electronic Funds Transfer Policy in Banks
5. Implementing e-commerce across India
6. Promoting e-commerce

Que:5 Long Answer Type Questions

1. What are Cyber Attacks? Describe five types of Cyber Attacks?

Ans: In the world of the Internet, all those activities or attempts that harm online computer networks or computer-based systems with the help of Internet are classified as cyber-attacks. Here are some of the major cyber-attacks:

- **Piracy:** It is this type of cyber-attack, a person sells copied/downloaded software or other content in the market without the approval and consent of their original owner.
- **Web-Jacking:** It is this type of cyber-attack, hacker hacks websites for personal gain and alter the information on websites.
- **Salami-Attack:** In this type of cyber-attack, a small amount of money is transferred to Attacker's account from the account of a person after regular short time-intervals.
- **Stalking:** In this type of cyber-attack, a person sends messages or inappropriate content to another person against their will using internet applications or social media.
- **Hacking:** In this type of cyber-attack, hackers tamper someone's computer or social media account or a website in one way or another way.

2. Describe the Causes of Cyber Attacks in Detail?

Ans: Following are some common causes of cyber-attacks:

- **Easy Access to the Internet:** Nowadays, the Internet has become very easy to use. People are unknowingly sharing their personal information on the Internet in a variety of ways. Doing so empowers cybercriminals to carry out cyber-attacks.
- **Lack of Technical Knowledge:** Though people are using the internet easily, but most of them do not have any technical knowledge about it. Such people get caught up in cyber attacker's behaviour by providing their confidential information on unknown links or sites.
- **Non-Use of Security and Privacy:** Most people do not use any kind of security or privacy when using the Internet, which makes cyber criminals easy to harm their online accounts.
- **Criminal Wisdom or Feeling of Revenge:** Cyber-attacks are also on the rise due to the criminal intelligence and revenge of many people nowadays.
- **Ignorance of IT Crime and Laws:** The number of cyber-attacks is also increasing because most of the people do not have knowledge of IT crimes and related laws.

3. What is Malware? Describe five types of Malwares?

Ans: The word Malware is made up of a combination of two English words Mal and Ware. The word Mal is derived from the word Malicious and the word Ware is derived from Software. Thus, we can say that a group of software is called Malware which is created to infect or damage a computer-based system in one form or another. Computer viruses are a common example of malware. Here are some common types of malware:

- **Computer viruses:** These malware softwares come into a computer and infect our data and computer systems.
- **Adware:** These malware softwares enters in the computer system without permission and silently sends users confidential information to cyber criminals through the Internet. This is how these softwares act like a spy.
- **Ransomware:** These malware softwares lock the entire computer system or any important document. The cyber-criminals then demand a ransom for unlocking the computer/document.
- **Trojan Horse:** These malware softwares initially behaves in a user-friendly way with the computer user and later take control of the computer from the real user and hand it over to the cyber-criminal.
- **Browser hacking:** These malware softwares hacks the user's web browser, change the browser settings without any consent and automatically opens some web sites on that browser.

4. What is Cyber Security? Describe five types of Cyber Security Techniques?

Ans: A variety of techniques are used to prevent cyber-attacks. These different techniques are collectively called Cyber Security. Here are some key cyber security techniques:

- **Authentication:** This cyber security technique allows a computer user to determine who can use his computer system and who cannot.
- **Strong Password:** This cyber security technique uses a username and password to access a system. Passwords must be complex and strong so that hackers cannot break or steal them.
- **Encryption:** This cybersecurity technique converts the data that user sends over the network into unrecognizable special symbols so that nobody can interpret data during transmission.
- **Antivirus:** It is a software that protects our computer from any kind of virus. It is also called anti-malware. This software prevents viruses from entering into our computer and even if virus enters into the system, it removes viruses by scanning the computer system. AVG, Avira, Norton etc. are some of the popular antivirus softwares.
- **Firewall:** This cyber security protects computers and computer networks from viruses or any other type of cyber-attacks. It is a strong wall that protects our computer from all kinds of malware and does not allow any unauthorized person to access our computer.

5. What is IT Act 2000? Describe its Features?

Ans: Keeping in view about cyber threats, Government of India had passed an Act on 17-October-2000 to legalize the use of Information Technology, which was named as IT Act 2000. This act is also known as ITA 2000. Some of the salient features of this Act are:

Features of IT Act 2000:

1. Digital signature is legally recognized in this Act.
2. This Act gives full recognition to financial transactions made through electronic means.
3. This Act deals exclusively with Cyber Crime and Electronic Commerce.
4. This Act gives legal recognition to online submission of forms by Government Offices and Agencies.
5. The Act establishes a Cyber Appeal Regulation Tribunal which deals with cyber appeals.
6. According to this Act, a hearing against the order of the Cyber Appeal Regulation Tribunal can be held only in the Supreme Court.

Chapter – 4th

Computer System Maintenance

Que1: Objective Type Questions

1. _____ is a process by which a computer program is altered or updated after it has been released.

a. <u>Software Maintenance</u>	b. Hardware Maintenance
c. Corrective Maintenance	d. Preventive Maintenance
2. In computing, _____ is the process of starting a computer.

a. Safe mode	b. <u>Booting</u>	c. Starting	d. Login
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3. Which of the following is not a type of computer port?

a. Ethernet	b. PS/2 Port	c. VGA	d. <u>Printer</u>
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4. _____ security tool is built into the latest versions of Windows and helps guard our PC against viruses and other malware.

a. Antivirus	b. Malware	c. <u>Windows Defender</u>	d. Defragmenter
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5. _____ is a software which acts as an interface between the end user and computer hardware.

a. Windows Defender	b. File Compression Utility
c. <u>Operating system</u>	d. Security Tools

Que:2 Fill in the Blanks:

1. ___ is the process of inspecting hardware on a regular basis to ensure it stays in good running order.
2. A _____ is software that a device uses to work with our PC.
3. A ___ is a physical docking point using which an external device can be connected to the computer.
4. A _____ is the combination of typeface and other qualities, such as size, pitch, and spacing.
5. Using _____, we can end our Windows session, save our stuff, and quit programs, but Windows remains on and ready for other people to use the computer.

Ans: 1. Preventive Maintenance 2. Driver 3. Port 4. Font 5. Log Off

Que:3 Write the Full form of following:

1. PnP Plug and Play
2. USB Universal Serial Bus
3. VGA Video Graphics Adapter
4. UAC User Account Control
5. OS Operating System

6. NAP Network Access Protection

Que:4 Short Answer Type Questions.

Q1: What is Preventive Maintenance?

Ans: Preventive maintenance means regular maintenance of computer hardware. Preventive maintenance ensures that the computer system is functioning properly. If we take good care of our computer system, it will not crash and our data will not be lost. We must follow the preventive maintenance guidelines to prevent problems with our computer.

Q2: What do you mean by Plug and Play Devices?

Ans: Plug and play is sometimes abbreviated as PnP. These are devices that start working as soon as they are connected to a computer system. Users do not need to install separate device drivers to use these devices. The computer automatically checks these devices and loads their drivers automatically. The keyboard, for example, is a plug and play device. When we attach the keyboard to the computer, the computer automatically loads its drivers and the keyboard becomes operational.

Q3: Write about the PC Security tools.

Ans: Computer security plays an important role in keeping the data safe in the computer. Computer security prevents various types of viruses and malware from entering into the computer. We use a variety of tools/software in the computer for its security. These tools/software are called PC security tools. For example: Antivirus, Antispyware, Firewall, Windows Defender, etc.

Q4: What do you know about Windows Operating Systems?

Ans: The Windows operating system is a system software that acts as an interface between a user and computer hardware. It provides the user a graphical user interface (GUI) to work with system. It is developed by Microsoft. Microsoft released the first version of Windows in 1985. Microsoft has released several versions of Windows so far. Windows 98, Windows XP, Windows 7, Windows 8 and Windows 10 are the important versions of the Windows operating system.

Q5: What is Control Panel in Windows operating system?

Ans: The Control Panel is an important feature of the Windows operating system. It allows the user to modify various settings of the computer system. The control panel contains many applications that can be used to view and modify various settings of hardware or software. For example: Control Panel uses applications like Display, Keyboard and Mouse for hardware settings while Date and Time, Power Options, Fonts and Admin Tools are applications related to software settings.

Que:5 Long Answer Type Questions.

Q1: Write the difference between software update and upgrade.

Ans: Updates and upgrades are two different ways to make changes to a software. But the main difference is in the changes made to them and the importance of modification in them.

Software Update	Software Upgrade
1. An update is a patch that is made available to fix problems in the software.	1. An upgrade replaces an old version of a product with a new one.
2. An update includes bug fixes and other minor improvements	2. An upgrade includes a variety of new features and options.
3. An update is often small in size	3. It can be quite large in size.
4. Software updates take less time.	4. Software upgrades take more time.
5. Updates are often free	5. Upgrades cost money
6. Software updates are often necessary.	6. Software upgrades are often not necessary.

Q2: Explain the basic guidelines for preventive maintenance.

Ans: The basic guidelines for preventive maintenance are:

- Shut down and unplug the system before cleaning any part of the computer system.
- Thoroughly clean the computer case and its ports.
- Clean the dust layer at the bottom of the mouse.
- Do not press the left, right and scroll buttons of the mouse too hard.
- After using the keyboard, cover it to protect it from dust.
- Clean the monitor case with a clean cloth.
- The power cables of the computer should be of high quality. The connection points of the power cables should not be loose.
- Clean the DVD / CD discs gently with a soft cloth. When cleaning the disc, clean it from the center hole to outward. Do not clean the disk in a circular or rotating direction.

Q3: What are ports? Explain any two types of computer ports.

Ans: A computer port is a docking point that can be used to connect an external device to a computer. For example: Ports are used to connect a monitor, webcam, speaker, or other device to a computer. PS/2 port, Ethernet port, VGA port, USB port etc. are some of the important ports. The two important ports are described as follows:

- **Universal Serial Bus (USB) Port:** This is a very popular type of port. This port is used to connect external USB devices such as printers, scanners, mouse, keyboards, etc. to the computer. This port was introduced in 1997. The black USB port represents version 2.0 and the blue USB port represents version 3.0. Data transfer speed of USB 3.0 port is much higher than USB 2.0. USB based devices can also receive power from the USB port.

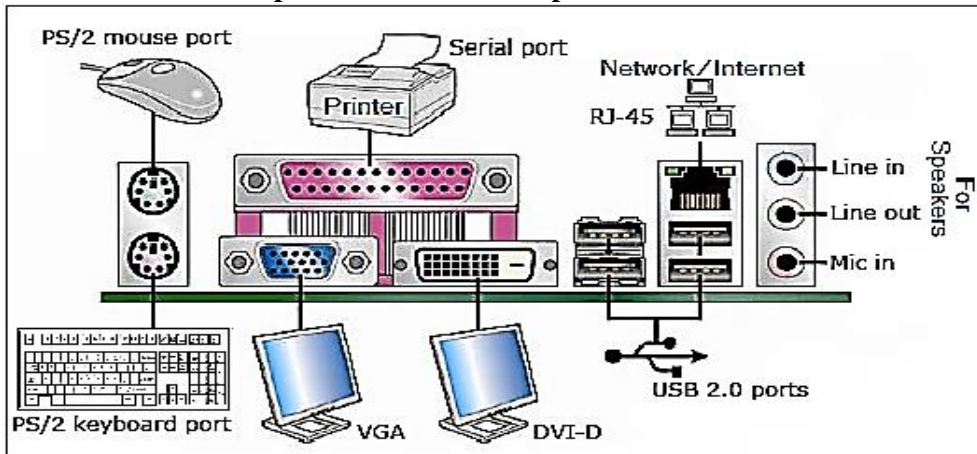


Fig: Different Types of Ports

- **VGA Port:** The full form of VGA is Video Graphics Array. The VGA port is also called the monitor port. It is used to connect a monitor / flat panel display (LCD, LED etc.) to a computer video card. This port has 15 holes.



Chapter – 5th
Database Management System

Que1: Write True or False

1. Collection of related record of Number of different students can be treated as Database.
2. The database is used to retrieve, insert and delete the data efficiently.
3. DBMS is a computerized record keeping system.
4. Database management system is Hardware.
5. Database management system is used to manage the database.

Ans: 1. True 2. True 3. True 4. False 5. True

Que:2 Fill in the Blanks:

1. Related information of a particular item may be treated as _____
2. The Collection of Files or Tables is known as _____
3. DBMS stands for _____
4. _____ are the group of people who actually work on the designing part of the database.
5. _____ maintains the DBMS and are responsible for administrating the database.

Ans: 1. Record 2. Database 3. Database Management System 4. Designer 5. DBA

Que:3 Short Answer Type Questions.

Q1: Explain the Application Areas of DBMS?

Ans: Some of the DBMS application areas are listed below:

- DBMS is used to store student records in educational institutions.
- DBMS is used to store bank customer information.
- DBMS is used to store call records, monthly bills etc. information in the telecommunications sector.
- DBMS is used to track the production and supply of goods in the manufacturing sector.
- DBMS is used to store reservations and schedule information in the Tours and travel industry.

Q2: Define about DBMS Working?

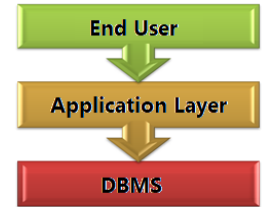
Ans: DBMS stands for Database Management System. It is basically a computerized record keeping system. A DBMS stores data in a way that makes it easy to retrieve information, modify data, and create information. A DBMS has many different types of users and each user can have different rights to perform different types operations on the database. These different users use the database for different purposes. For example: some users retrieve data and some takes its backup.

Q3: What do you mean by End User?

Ans: A DBMS has many different types of users and each user can have different rights to perform different types operations on the database. END USERS is a type of DBMS user. It includes those users who actually benefit from DBMS. End users can range from general audiences to intelligent users like business analysts.

Q4: Define the 2-tier DBMS architecture?

Ans: DBMS has different types of architectures: such as 1-tier architecture, 2-tier architecture, 3-tier architecture, etc. DBMS's 2-tier architecture incorporates an application layer between users and DBMS. This layer is responsible for forwarding the user's request to the Database Management System and then transmits the response from the DBMS to the user.



Q5: What is Cloud database?

Ans: A cloud database is a database that typically runs on a cloud computing platform. Internet is used to access cloud databases. Cloud Database Services can be accessed in two ways:

- In the first method, an organization purchases virtual machine space from a cloud service provider, and stores the database on the cloud. IT staff is used by the organization to control the database. In this system, the organization is responsible for monitoring and managing the database.
- In the second method, the organization makes a subscription-based agreement with the cloud service provider. The database is stored on the cloud server, but the cloud service provider allows the database to be used as a service (Database as a service-DBaaS).

Que:4 Long Answer Type Questions.

Q1: Explain the Features of Database Management System?

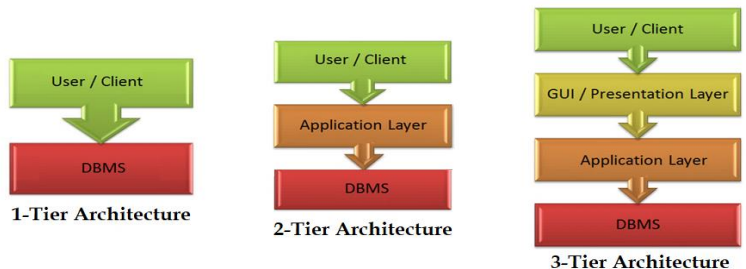
Ans: Key features of the database management system are described as follows:

- **Reducing data redundancy:** Redundancy of data means duplication of data. Multiple copies of the same file/data in a file-based system lead to data duplication. It can be prevented with DBMS.
- **Sharing data:** Different users of the database can share data among themselves.
- **Data consistency:** This means that the data in the database is accurate and consistent. Data consistency is compromised when there is duplication of data. DBMS eliminates data duplication which keeps the data consistent.
- **Data Security:** Only authorized users can access the database. The identity of these users is verified using a username and password.
- **Privacy:** In a database system a user can only view/use the data that he/she is allowed to use.
- **Backup and Recovery:** The database system automatically backs up and recovers data from time to time.

Q2: Explain about Architecture of DBMS?

Ans: The database management system is made up of many interrelated components. The architecture of DBMS specifies how to organize these components. The architecture of a DBMS can be based on Centralized (storing all data at one place), Decentralized (multiple copies of databases at different locations) or Hierarchical architecture. The purpose of architecture is to separate user-applications and physical-databases. The following are some of the types of database architectures:

- **1-tier DBMS architecture:** It is directly available to database users to store data.
- **2-tier DBMS architecture:** This architecture incorporates an application layer between users and DBMS. This layer is responsible for forwarding the user's request to the database management system and then transmits the response from the DBMS to the user.



- **3-tier DBMS architecture:** This architect is commonly used for web applications. The 3-tier architecture includes an additional presentation layer, which provides the end user with a graphical user interface (GUI) for interacting with DBMS.

Q3: Explain about Data Base Life Cycle?

Ans: A Software/System Development Life Cycle (SDLC) model is a set of different functions that are defined to accomplish the task of developing a software application. There are several activities involved in developing any software / system:

- **Planning:** Analysing the problem to define it
- **Requirements:** Knowing the needs of the users
- **Design:** Creating a logical and physical design of the database.
- **Development:** Creating a database according to the design
- **Implementation:** Installing a database system in user's computer systems
- **Testing:** Fill the data in the database to test it
- **Installation and Maintenance:** Modifying the database system to fix problems or improve the database.

Chapter – 6th

Concept of Programming and Programming Languages

Que: 1 Multiple Choice Questions

1. Set of instructions is called _____.
 - a. Group
 - b. Software
 - c. Program
 - d. None of these
2. Which language is directly understood by computer without any translation?
 - a. Procedure Oriented Language
 - b. Machine Language
 - c. Assembly Language
 - d. High Level Language
3. Mnemonic codes & symbolic addresses are used in which programming language?
 - a. Object Oriented Language
 - b. Non-Procedural Language
 - c. Assembly Language
 - d. Machine Language
4. Which translator does not save object code after translation of source program written in high level language?
 - a. Translator
 - b. Compiler
 - c. Assembler
 - d. Interpreter
5. Process of finding and correcting errors in a program is called _____.
 - a. Compilation
 - b. Coding
 - c. Debugging
 - d. Documentation

Que: 2 Fill in the Blanks:

1. A person who writes the program is called _____
2. Low level internal details of hardware are required for programming in _____
3. _____ is the pictorial representation of algorithm
4. Process of translating source program written in high level language into object code is called _____
5. Those errors which are not detected by the compilers are called _____ errors.

Ans: 1. **Programmer** 2. **Low Level** 3. **Flow Chart** 4. **Compilation** 5. **Logical Errors**

Que: 3 Write the Full form of following:

- | | |
|-------------------|-------------------------------------|
| 1. Opcode | Operation Code |
| 2. Operand | Operation Address |
| 3. 4GL | 4 th Generation Language |
| 4. SQL | Structured Query Language |
| 5. OOP | Object Oriented Programming |

Que: 4 Short Answer Type Questions.

Q1: What is Programming?

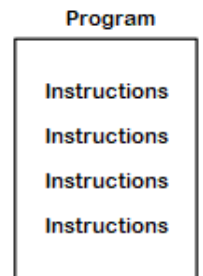
Ans: Programs are a set of instructions that a computer can understand to perform a task. The process of writing these instructions into a program is called programming. The person who writes the program is called the programmer.

Q2: What are Procedure Oriented Programming Languages?

Ans: Procedure Oriented Languages are considered as third generation programming languages (3GLs). To create programs in these languages, it is divided into small procedures or subroutines. Each procedure contains a series of instructions for carrying out a specific task. After creating the procedure, we can use them one or more times anywhere in the program. The sequence of program instructions in these languages is very important. FORTRAN, COBOL, Pascal, C, etc. are examples of some popular procedural languages.

Q3: Write the names of different symbols used in flowcharts.

Ans: Following are the different symbols used in the flow chart:



- Terminal (Oval symbol)
- Input / Output (parallelogram)
- Processing (rectangle)
- Diamond (rhombus)
- Flow lines (arrows)
- Connectors (circles)

Q4: Write the steps used in Programming Process.

Ans: The steps used in the programming process are as follows:

1. Define the problem to be solved
2. Develop a plan for solving problem
3. Coding the solution in high level language
4. Compile the program
5. Test and debug the program
6. Documenting the program

Q5: What are Syntax Errors?

Ans: These are the errors that occur when we develop programs that do not follow the rules or syntax of programming language. These types of errors are automatically detected by compilers during the compilation process. A program cannot be successfully compiled until all syntax errors in the program have been corrected. Some examples of syntax errors in C language are: Missing Semicolon, Variable not declared, etc.

Que: 5 Long Answer Type Questions.

Q1: What are low level programming languages? Explain their advantages and disadvantages.

Ans: Machine and assembly languages are called low-level languages. These are explained below:

- **Machine language:** Machine language is also called binary language. It is the fundamental language of computer systems because it is understood directly by the computer system. The computer does not require any translation to understand this language. This language is made up of only two binary digits 0 and 1.
- **Assembly Language:** This language is also called Symbolic Language because it uses the symbolic names of the instructions instead of the binary code. The symbolic names of the assembly language instructions can be easily remembered.

Advantages of Low-Level Languages:

- These languages can communicate / interact directly with computer hardware
- These languages work faster than computers.

Disadvantages of Machine Language:

- For programming in low level languages, the programmer needs to know the internal structure of the hardware.
- Programs created in low level languages are machine dependent.

Q2: What are Language Translators? Explain any one translator in detail.

Ans: Language translators are also called language processors. These are system-programs. The purpose of developing language translators is to accomplish two main tasks: first, to translate source programs into Object Code, and second, to detect syntax errors in the source program. Each language has its own translator program that can only translate programs written in that particular language. Examples of language translators are: assemblers, compilers and interpreter.

Assembler: This is a language translator that converts programs written in assembly language into machine language. A program written in assembly language is called a source program. This source program cannot be directly understood by the computer. Therefore, it is necessary to translate it into a machine-understandable format. It is the assembler that converts the source program of the assembly language into a machine-understandable program. The code generated after translation is called the object program, which is used to execute the program.

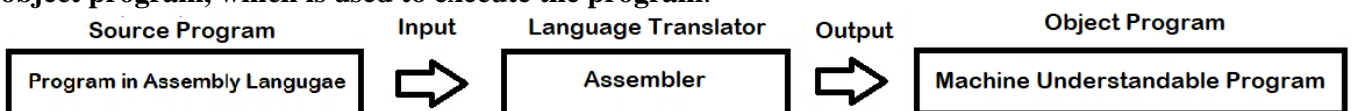


Fig: Working of Assembler

Q3: What is algorithm? Explain the different features that an algorithm should have.

Ans: Creating algorithms is a basic requirement in computer programming. This is a step-by-step description of how to solve a given problem. An algorithm has limited steps and it should always produce some (right or wrong) result. Before creating a program, a programmer first sets the algorithm. An algorithm should have the following features:

- Every step must be accurate.
- Every step should be clear, which means it should not be ambiguous.
- Input and output should be carefully determined.
- Steps should not be repeated indefinitely.
- After implementing the steps, the required output should be obtained in any case.

Q4: Explain different types of errors found in the computer programs.

Ans: There are two common types of errors in programs:

- **Syntax Errors:** These are the errors that occur when we develop programs that do not follow the rules or syntax of programming language. These types of errors are automatically detected by compilers during the compilation process. A program cannot be successfully compiled until all syntax errors in the program have been corrected. Some examples of syntax errors in C language are: Missing Semicolon, Variable not declared, etc.
- **Logical Errors:** These errors occur when there are the errors in the logic of the program. If there are logical errors in our program, it will be successfully compiled but it will produce incorrect results / output. Such errors cannot be detected by the compiler. These can be easily found with the help of debugging tools.

Chapter – 7th

Introduction to C and Basic Structure of C Program

Que1: Multiple Choice Questions

1. C is a _____ purpose programming language.
a. special **b. general** c. objective d. None of these
2. Which of the following is valid example of identifier?
a. roll_no **b. %age marks** c. rollno d. main
3. Which of the followings are the tokens?
a. keywords b. special symbols c. Literals **d. All of these**
4. Which of the following keywords do not represent a data type?
a. int b. float **c. const** d. char
5. _____ are used to describe a code in the program?
a. Compiler **b. Comments** c. Literals d. Identifiers

Que:2 Fill in the Blanks:

1. _____ are the smallest individual units of a program.
2. The names given to program elements, such as variables, constants, arrays, functions etc. is called _____
3. Those program elements which do not allow changing their value during execution are called _____
4. To work with single precision values, we use _____ data type.
5. File extension of header files is _____

Ans: 1. **Token** 2. **Identifier** 3. **Constant** 4. **float** 5. **.h**

Que:3 Write the Full form of following:

1. **FORTTRAN** Formula Translation
2. **BCPL** Basic Combined Programming Language
3. **IDE** Integrated Development Environment
4. **stdio.h** Standard Input Output Header file
5. **conio.h** Console Input Output Header file
6. **ASCII** American Standard Code for Information Interchange

Que:4 Short Answer Type Questions.

Q1: Why C is called Middle Level Programming Language?

Ans: C has the functionality of both types of programming languages, i.e. low-level and high-level programming languages. It means C language is suitable for writing both types of programs - system programs and application programs. Thus C-Language became a programming language that stood between both low-level and high-level programming languages. That is why C language is called middle level language. However, the middle level language is not a special category of programming languages. Because of the special capabilities of the C language, it is known as a middle level programming language.

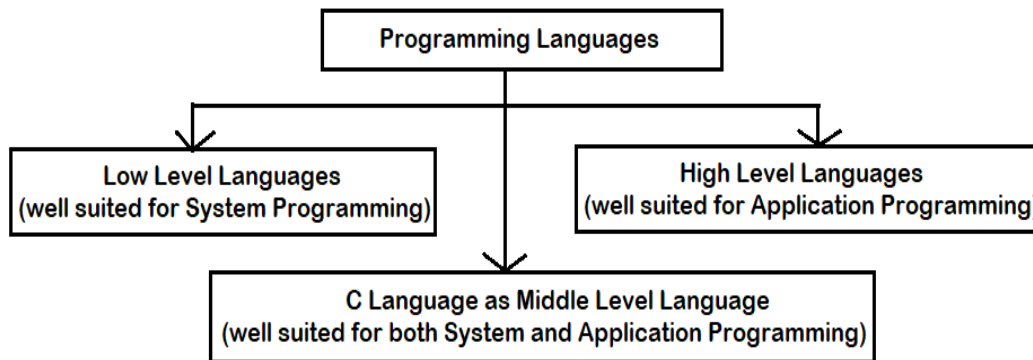


Fig: Why C is known as Middle Level Language

Q2: What is a character set?

Ans: The set of all characters and symbols used in the C language is called the character set of C language. The C language supports the ASCII character set. The following characters and symbols can be used in C language:

- Upper-case and Lower-case Alphabets (A to Z, a to z)
- Digits (0 to 9)
- Special Symbols, For Example: ! @ # \$ % ^ . ? / | \ etc.
- Some Non-printable characters, For example: new-line, horizontal-tab etc.

Q3: What are keywords?

Ans: Keywords are also called Reserve Words. These words are predefined in C compiler. The meaning of these words is predefined. They are used for the specific purpose for which they were defined. We cannot change their meaning. In Turbo C these words are shown in white color while in Code::Blocks these words are shown in blue color. The standard C language has 32 keywords. For example: int, float, void, if, else, for, while etc. In C programming, all keywords are written in lowercase letters only.

Q4: What should be the steps for creating and executing C program?

Ans: The following steps can be used to create a C language program:

1. Develop a program algorithm.
2. Create a C program as per the algorithm using any text editor or IDE that supports C language.
3. Save the file by writing a file name with .c extension.
4. Compile the program.
5. If the program has a syntax error, correct it and repeat step 4.
6. Execute the program.
7. Output of program will appear in the output window.

Q5: Write the difference between variables and constants.

Ans: Both of these are important program elements that are used to store a value in a program. Both elements are given a name in the program and the type of value to be stored in them. But there is a slight difference between the two. Variables allow us to change their values while running a program whereas constants do not allow it. It means constant values are fixed while variable values are changeable.

Q6: What are Pre-processor directives?

Ans: Pre-processor instructions are those statements that begin with the # symbol. These statements give instructions to the compiler to perform some specific operations before compilation. These directive statements are commonly used to include header files in the program or to define symbolic constants. Here are some examples of commonly used pre-processors:

```
#include <stdio.h>
```

```
#define PI 3.14
```

Que:5 Long Answer Type Questions.**Q1: What are Identifiers? Write the naming rules of identifiers.**

Ans: Identifiers are the names given to program elements, such as variables, constants, arrays, functions, structures, etc. Some rules are followed in C programs to define the names of program elements. These rules are as follows:

- The identifier must start with a letter or underscore (_) sign.
- No special symbols, except underscore (_), are allowed in the identifier.
- Two consecutive underscores cannot be used in the identifier.

- In Turbo C compiler, the length of the identifier is limited to 31 characters.
- Keywords cannot be used as identifier.
- Identifier are case-sensitive.
- No spaces are allowed in the identifier.

Q2: What are Tokens? What are the different categories of tokens that can be used in a program?

Ans: Tokens are like words and punctuation marks used in English. A C program is made up of tokens. Tokens are the smallest individual units in a program. A C program can have the following five types of tokens:

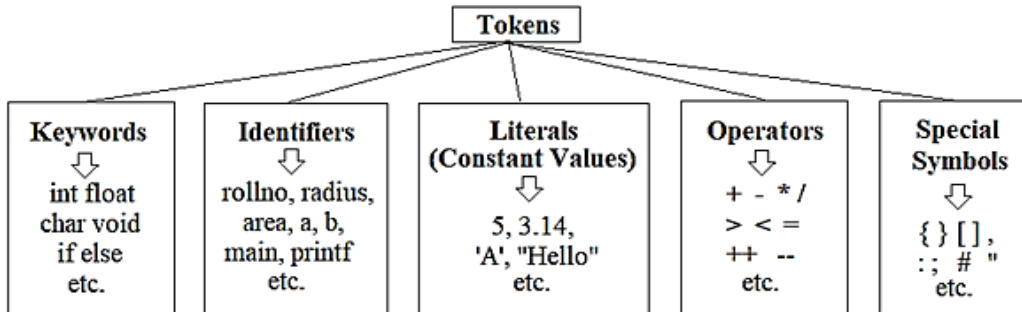


Fig: C Tokens with Examples

1. **Keywords:** These are predefined words. For example: int, float, char, if, else, void etc.
2. **Identifier:** These are the names given to program elements. For example: main, printf, etc.
3. **Literals:** These are fixed values. For example: 5, -25, 3.14, 'A' "Hello" etc.
4. **Operators:** These are the symbols for specific operations. For example: +, -, *, /, >, <, = etc.
5. **Special symbols:** These are the special symbols. For example: #, &, { }, (), [], ;, : etc.

Q3: What are the data types? Which primitive data types are supported by C language?

Ans: Data type defines what type of data is to be stored in program elements, such as variables, constants, arrays, etc. They define a specific range of values for variables or other program elements. The C language supports a variety of data types. The following table shows the different basic data types available in the standard C language:

Keyword	Description	Memory Requirement	Range of values	Format
char	Used to store single byte/character data	1 byte	-128 to 127	%c
int	Used to store integer type data	2 bytes	-32768 to +32767	%d
float	Used to store single precision floating values	4 bytes	3.4×10^{-38} to $3.4 \times 10^{+38}$	%f
double	Used to store double precision floating values	8 bytes	1.7×10^{-308} to $1.7 \times 10^{+308}$	%lf
void	Used with functions which do not return any value	-	-	-

Chapter – 8th

Operators and Expressions in C

Que1: Multiple Choice Questions

1. The symbols which are used to perform some specific type of operation on data are called?

- a. Operands **b. Operators** c. Expressions d. Formulas

2. Which operator acts only on one operand?

- a. Unary b. Binary c. Ternary d. Conditional

3. Which of the following is not a Logical Operator?

- a. And (&&) b. OR (||) **c. Equality (==)** d. NOT (!)

4. Which symbol is used for Ternary Operator?

- a. : ? b. ; ? **c. ? :** d. ? ;

5. Which of the following cannot be considered as assignment operator?

- a. = **b. ==** c. += d. %=

Que:2 Fill in the Blanks:

1. _____ are the data items on which operators can perform operations.
2. Unary operator acts on only _____ operand.
3. _____ arithmetic operator performs only on integer operands.
4. When value of one type is converted into some other type, it is called _____.
5. Ternary operator is also known as _____.

Ans: 1. **Operands** 2. **One** 3. **Modulus (%)** 4. **Type Conversion** 5. **Conditional**

Que:3 Write True or False

1. Increment Operator causes its operand to be increased by one.
2. Relational operators are used to test the relationship between two variables.
3. Arithmetic Operators used in C programming are six.
4. sizeof() operator returns the size of its operand, in bytes.
5. Type conversion is of two types.
6. There are 6 relational operators in C Language.

Ans: 1. **True** 2. **True** 3. **False** 4. **True** 5. **True** 6. **True**

Que:4 Short Answer Type Questions.

Q1: Define Expression?

Ans: Expression is like a formula in mathematics. An expression can be any valid combination of operators and operands. A valid combination is a combination that confirms the syntax rules of the C language. Expression always returns some value after evaluation. For example: $x = y * z$;

Q2: What is Operand?

Ans: Operands are data items on which operators can work. These operands can be variables or constant values. For example:

$$a + 5 * 10$$

In this example, operators + and * are doing their work on variable 'a', constant values 5 and 10. Here, 'a', 5 and 10 are the operands.

Q3: What is Unary operator?

Ans: Operators that require only one operand to perform their operations are called Unary Operators. For example: ++, --, ! and ~ operators etc. The following example uses increment (++) Unary Operator:

```
int x = 10;
++ x;
```

Here, ++ increment operator is a unary operator that performs its operation at only single operand x. This operator will increase the value of x by one unit and make its value 11.

Q4: Define Conditional operator?

Ans: Conditional operator is also known as Ternary Operator. This operator requires three operands to perform its operation. Symbols ? : are used to represent Conditional/Ternary operator. The syntax for using this operator is as follows:

$$\text{Exp1? Exp2 : Exp3;}$$

Exp1 should be a conditional expression that always returns a true (1) or false (0) result. If the result of Exp1 is true then Exp2 will perform its function otherwise Exp3 will perform its function.

Q5: What is Type Conversion?

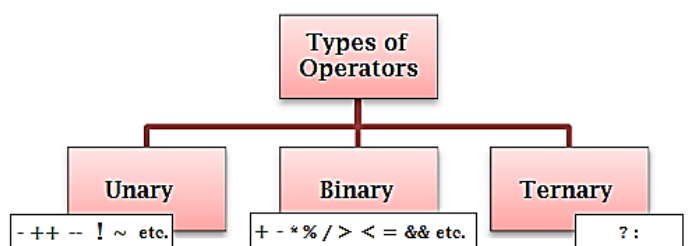
Ans: In C language, the value of an expression can be changed to a specific type of data type as required. When one type of value is converted to another type of value, it is called Type Conversion. In C language, this conversion can be done in two ways:

1. Implicit Conversion
2. Explicit Conversion

Q6: What is an operator? Write the name of different types of operators?

Ans: Operators are the symbols that are used to perform specific operations on data. For example: We use + symbol to perform addition operation, * symbol is used to multiply, > symbol is used to compare etc. In these examples, +, *, > symbols (operators) are used that represents various types of operations. All operators return a value after performing their operation. Operators can be divided into the following three types:

- Unary Operators
- Binary Operators
- Ternary Operators



Q7: Write about increment and decrement operators?

Ans: The increment and decrement operators are the unary operators. The ++ sign is used for the increment operator and the -- sign is used for the decrement operator. The increment operator (++) increases the value of its operand by one while the decrement operator (--) decreases the value of its operand by one. The operand used with these operators must be a variable. They cannot be applied directly to a fixed value.

for example:

```
int x = 10;
```

```
++ x;
```

It will increase the value of x to 11.

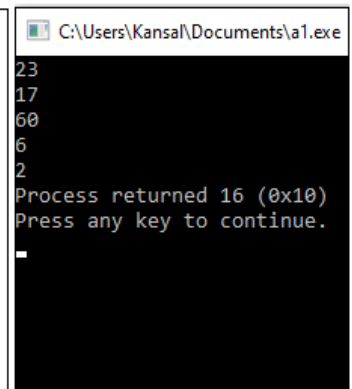
```
--x;
```

It will decrease the value of x (10) to 9.

Que:5 Long Answer Type Questions.**Q:1 Explain the Arithmetic Operators? Write any program using Arithmetic Operators?**

Ans: Arithmetic operators are used to perform arithmetic operations, such as: addition, subtraction, multiplication, division, etc. There are 5 arithmetic operators in C language: + (addition), - (subtraction), * (multiplication), / (division), and % (modules). Following program shows the use of arithmetic operators in C language:

```
void main ()
{
int a=20, b=3, c, d, e, f, g;
c=a+b;
d=a-b;
e=a*b;
f=a/b;
g=a%b;
printf("%d \n%d \n%d \n%d \n%d", c, d, e, f, g);
}
```

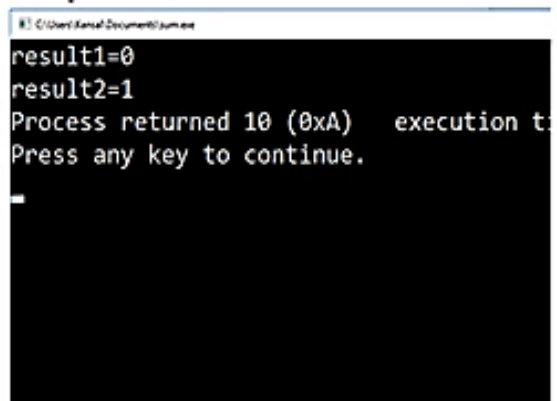


```
C:\Users\Kansal\Documents\al.exe
23
17
60
6
2
Process returned 16 (0x10)
Press any key to continue.
```

Q:2 What are Relational operators? Write a program for Relational operator?

Ans: Relational operators are also called Comparison Operators. These operators are used to compare values. After comparing the values, these operators return either true (1) or false (0) value. There are 6 relational operators in C language: == (Equals to), != (Not Equal to), > (Greater than), < (Less than), >= (Greater than or equal to) and <= (Less than or equal to). All these are Binary operators. Following Program shows the use of relational operators in C:

```
#include<stdio.h>
void main()
{
int a, b, result1,result2;
a=20;
b=15;
result1=a<b;
printf("result1=%d",result1);
result2=a>b;
printf("\nresult2=%d",result2);
}
```

Output


```
C:\Users\Kansal\Documents\june.exe
result1=0
result2=1
Process returned 10 (0xA) execution t
Press any key to continue.
```