

CCA-101

ASSIGNMENT

ON

FUNDAMENTAL OF

IT

AND

PROGRAMMING.

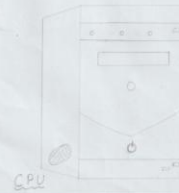
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Q1. What are the four fundamental parts of computer? Explain it with the help of a diagram.

Ans => The four fundamental parts of computer are:-

1. CPU (Central Processing Unit)
2. Memory.
3. Input device.
4. Output device.

1. CPU (Central Processing Unit):

Central processing unit (CPU) is the brain of the computer. Computer cannot process without it. It stores data, intermediate results, and instruction (program). It control the operation of all parts of the computer.



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2. Memory:

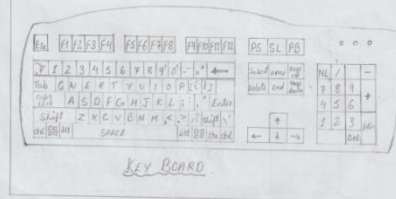
Computer memory is any physical device, capable of storing information temporarily or permanently. Memory refers to the computer hardware integrated circuits that store information for use in a computer. Types of memory are: i) Primary memory and ii) Secondary memory.

i) Primary memory/Volatile memory: Volatile memory is a computer storage that only maintains its data while the device is powered. Eg: RAM (Random Access Memory) is volatile. When we are working on a document, it is kept in RAM, and if the computer loses power, your work will be lost!

ii) Secondary memory/Non-volatile memory: Non-volatile memory is a type of computer memory that has the capability to hold saved data even if the power is turned off. Eg: Read Only Memory (ROM), Hard disk, floppy disk, etc.

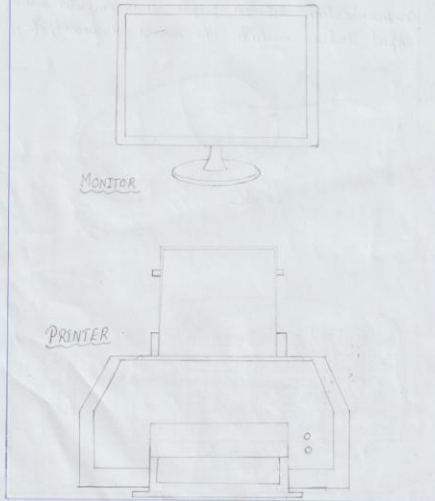
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3. Input Devices:

Input devices are those devices that can be used to insert data, instructions or information into a computer. Regardless of the type of device used, all are components for interpretation and communication between people and computer system. Input device include the mouse, keyboard, etc.



4 Output Devices:

The device that are used to display the result to the user are called output devices. The main uses of output devices are monitor, printer, etc.



Q2. Discuss about the classification of computers based on size and capacity.

Ans $\Rightarrow$ Based on size and capacity computers are classified as follows:

1. Super Computer.
2. Mainframe Computer.
3. Mini Computer.
4. Micro Computer.

1. Super Computers: They are the most powerful and physically the largest by size.

These are systems designed to process huge amounts of data. The fastest super computers can perform over one trillion calculations in a second. Because of their extraordinary speed, accuracy and processing power, super computers are well suited for solving highly complex problems and huge amounts of calculations.

For eg: JAGUAR, ROAD RUNNER, etc.

2. Mainframe Computers: They are very large often filling an entire room and can process thousands of millions of instructions per second.

Mainframes are capable of supporting hundreds to thousands of users simultaneously. Some of the functions performed by a mainframe include flight scheduling, reservation and ticketing for an airline, etc.

For eg: IBM Machines Z13, IBM System z9.

3. Mini Computers: These computers are much smaller than mainframe computers and they are also less expensive.

Sometimes referred to as Midrange server or Mid-range computers. They are typically larger, more powerful and more expensive than desktop computers. Midrange computers are usually used by small and medium-sized business as their servers. Users connect to the server through a network by using desktop computers.

For eg: Apple ipod, CDC 160A.

4. Micro Computers: These computers are the most frequently used type of computers. It is also known as Personal Computer (PC).

A micro computer is a small computer system designed to be used by one person at a time.

For eg: Desktop computers, Laptops.

Q3. What is the meaning of computer generations? How many computer generations are defined? What technologies were/are used?

Ans $\Rightarrow$ The evolution of digital computing is often divided into generations. All the generations is based on three parameters, i.e. Each generation is characterized by dramatic improvement over the previous generations in the technology used to build computers in terms of the internal organization of computer and programming languages.

There are five types of Computer Generations, they are:

1. First Generation: It is totally based on Vacuum Tubes (1940-1956).
2. Second Generation: It is based on Transistors. (1956-1963)
3. Third Generation: It is based on Integrated Circuits (1964-1971)
4. Fourth Generation: It is based on Microprocessors (1971-Present)
5. Fifth Generation: It is based on Artificial Intelligence (Present and Beyond).

Technologies that were used in these generations are as follows:-

1. First Generation:

- a) The first computers systems used vacuum tubes for circuitry and magnetic drums for memory.
- b) These computers were very expensive to operate.
- c) Computers of this generations consumed a lot of electricity.
- d) First generation computer relied on machine language the lowest-level programming language understood by computers to perform operation.
- e) They could only solve one problem at a time. It would take operators days or even weeks to set-up a new problem.
- f) Input was based on punched card and paper tape, and output was displayed on print outs.
- g) First computers generated a lot of heat, which was often the cause of malfunctions.

Examples:

- The UNIVAC (Universal Automatic Computers) 1951. The UNIVAC was the first commercial computers delivered to a business client, the U.S Census Bureau in 1951.
- ENIVAC (Electronic Numerical Integrator and Computer) Computers.

2. Second Generation:

- a) Transistors replaced vacuum tubes in the second generation of computer.
- b) The transistors was far superior to the vacuum tube, allowing computers to become smaller, faster, cheaper, more energy-efficient and more reliable than their first-generation predecessors.
- c) Second-generation computers still relied on punched cards for input, and printouts for output.
- d) Second-generation computers moved from binary machine language to symbolic, or assembly languages.

3. Third Generation:

- a) The development of the integrated circuits, was the hall mark of the third generation of computers.
- b) Transistors were replaced by Integrated circuits which drastically increased the speed and efficiency of computers.
- c) Instead of punched cards and printouts users integrated with third generations computers through keyboard and monitors.
- d) Computers for the first time became accessible to a mass audience because they were smaller and cheaper than their predecessors.

4. Fourth Generation:

- a) The Micro processors brought the fourth generation of computer as thousands of integrated circuits were build onto a single silicon chip.
- b) That in the first generation filled an entire room could now fit in the palm of the hand.
- c) In 1981, IBM introduced its first computer for the home user.
- d) In 1984, Apple introduced the Macintosh.
- e) Microprocessors also moved out to the desktop computer.
- f) Fourth generation computers also covered the development of graphical user Interface (GUI) mouse and handheld devices.

5. Fifth Generation:

- a) Fifth generations computing devices, based on artificial intelligence, are still in development.
- b) The use of parallel processing and super conductors is helping to make artificial intelligence a reality.
- c) Quantum computation and nano technology will radically change the face of computer in years to come.
- d) The goal of fifth-generation computing is to develop devices that respond to natural language input and are capable of learning and self-organization.
- e) There are some application, such as Voice recognition, that are being used today.

6.4. Differentiate between Volatile and Non-Volatile memories.

Ans ⇒ Volatile memories

1. It is a computer storage that only maintains its data while the device is powered.

2. Eg: RAM (Random Access memory) is volatile. When we are working on a document, it is kept in RAM, and if the computer loses power, your work will be lost.

3. RAM is also called as read write memory or the main memory or the primary memory.

4. The programs and data that the CPU require during execution of a program are stored in this memory.

5. RAM is further classified into two types - SRAM (Static Random Access Memory) and DRAM (Dynamic Random Access Memory).

Non-Volatile memories:

1. It is a computer memory that has the capability to hold saved data even if the power is turned off.

2. Eg: ROM (Read Only Memory), Hard disk, floppy disk, etc.

3. ROM stores crucial information essential to operate the system, like the program essential to boot the computer.

4. Used in embedded systems wherever the programming needs no change. Used in calculators and peripheral devices.

5. ROM is further classified into three types - PROM (Programmable read only memory), EPROM (Erasable Programmable read only memory) and EEPROM (Electrically erasable Programmable read only memory).

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Q5. Distinguish among system software, application software and open source software on the basis of their features.

Ans ⇒ System Software:

1. It is a type of software that is designed to run a computer's hardware and applications programs.
2. Software like operating system, compilers, editors, and drivers etc, come under this category.
3. A computer cannot function without the presence of system software.
4. Therefore if we think of the computer system as a layered model, the system software in the interface between the hardware and user applications.

Application Software.

1. It is software created for a specific purpose, used by end users, it can be called an application or simply an app.
2. Examples: Word processor, accounting application a web browser, an email client, media player etc.

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Open Source Software:

1. It is a type of computer software in which source code is released under a license in which the copy-right holder grants users right to study, change and distribute the software to anyone and for any purpose.

2. The linux operating system (OS) is the best known example of open source software - freely available in the markets.

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Q6.a) Create a file in MS-word to insert a paragraph about yourself and save it with file name "yourself". Describe all steps involved in it.

Ans ⇒ To insert a paragraph in MS-word:

- Select the Home tab in the ribbon.
- Insert your cursor into a paragraph.
- Select in the editing group.
- Select text with similar formatting in the drop-down menu.
- Select paragraph group's dialog box launcher.
- Select the special menu arrow in the paragraph dialog box.
- Use the increment arrow to adjust the length of the indent.
- Make any additional adjustments to alignment or line spacing.
- Select the OK button to save your selection.
- Then click on the office button.
- Click Save / Save as.
- Then rename the file and type "yourself".
- Then click save.

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Q6.b) Write steps regarding followings:

> To change the font style:

- Select the text you want to modify.
- Click on font style box on the Home tab. The font style drop-down menu appears.
- Move your cursor over the various font style.
- Left-click the font style you want to use.
- Then font style will change in the document.

> To change the font size.

- Select the text you want to modify.
- Click on font size box in the font group on the Home tab. The font size drop-down menu appears.
- Move your cursor over the various font sizes.
- Left-click on font size you want to use.
- Then it will change font size in your document.

> To change the font color.

- Select the text.
- Click on the text Highlight color in font group on the Home tab.
- Various colors will appear.
- Move your cursor over the various color.
- Click on color you want to use.
- Then text highlight color will change in the document.

- > To highlight (in yellow) the line that reads "need to get IMS's address".
- Select the text.
- Click on the text Highlight color in font group on the Home tab.
- Various colors will appear.
- Move your cursor over the various colors.
- Click on color you want to use.
- Then text highlight color will change in the document.

Q7. Create a file in MS-word for the following document and save it with file name 'ms-word'. Describe all steps involved in it.

Ans ⇒ Creating and Saving a New document in MSword:

- Click on the start button.
- Point the mouse to All Programs.
- Click the Microsoft Office.
- Click Microsoft office word 2007.
- Click on the office button and select Save.
- Choose the location and folder.
- Write file name in the file name combobox as ms-word.
- Select the type of document from the save as type drop-down list.
- Click save.

MS Word.

MS Word is a widely used commercial word processor developed by Microsoft.

MS word is applications software, which is capable of

- of
 - Creating
 - editing
 - Saving and
 - Printing anytype of document.

Creating a new document:

- Click the Microsoft office button.
- Select new. The new document dialog box appears.
- Select blank document under the blank and recent section. It will be highlighted by default.
- Click create. A new blank document appears in the word window.

Edit a document:

- Open the file that you want to edit.
- Choose from the following tasks: Task. Steps.
- Edit text. Click the edit tab. Select the text that you want to edit. Using the tools in the edit toolbar, change the required formatting including font style, paragraph alignment, list formatting, and indentation options. Insert images.

Saving a document:

- Left-click the Microsoft office button.
- Select save or save as.
- Save as allows you to name the file and choose save as if you'd like to save the file for the first time or if you'd like to save the file as a different name.
- Select save if the file has already been named.

Printing anytype of document:

- Click on file tab, menu appears.
- Then click on Print and a Print window will pop up on the screen.
- Finally click on ok for your document to start printing.

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Q8. Create a file in MS-word for the following document and save it with file name 'equation'. Describe all steps involved in it.

Equations:

$$X_2 + Y_2 = 30$$

$$Z_3 + A_4 = 50$$

$$A_2 + B^8 = X_2 + Y^8.$$

Ans $\Rightarrow$ To create and save a file in MS-word:

$\rightarrow$ Click on the start button and

$\rightarrow$ Click the MS-word.

$\rightarrow$ Select the equation and click the insert New equations.

$\rightarrow$ Select script (e^x)

$\rightarrow$ Select different script option.

$\rightarrow$ Select the office button.

$\rightarrow$ Select save/save as.

$\rightarrow$ Type 'equation' in the file name combo box.

$\rightarrow$ Click save.

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Q9. Create a file in MS-word that convert existing highlight text to table as shown below and save it as file name 'text to table'. Describe all steps involved in it.

Ans $\Rightarrow$ To convert existing text to table:

1) Select the text you want to convert.

2) Select the insert tab.

3) Click the table command.

4) Select the convert text to table from the menu. A dialog box appears.

5) Choose one of the options in the separate text at section. This is how word knows what text to put in each column.

6. Click OK. The text appears in a table.

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Q10. Create a file in MS-word to insert a table in the document. Describe all steps involved in it.

Ans $\Rightarrow$ To insert a table in the document:

1) Place your insertion point in the document where you want the table to appear.

2) Select the insert tab.

3) Click the table command.

4) Drag your mouse over the diagram squares to select the numbers of columns and rows in the table.

5) Left-click your mouse, and the table appears in the document.

6) Enter text into the table.

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Q11. Create a following worksheet in MS-excel and save it with name 'book 1'.

Ans $\Rightarrow$ Create and save a worksheet in MS-excel:

1) Click on the start button.

2) Point the mouse to all programs

3) Click Microsoft office.

4) Click Microsoft office Excel 2007

5) Click on the Insert Worksheet tab at the end of the sheet tabs.

6) Double-click the sheet 1 tab.

7) Type the desired name for sheet 1.

8) Click on the office button and select save.

9) Choose the location and folder.

10) Write file name in the file name combo box.

11) Select the type of the workbook from the save as type dropdown list.

12) Click Save.

Q12. Calculate the following things of a range (C2, C11) of data in the worksheet created in question no. 10.

- > the sum of the marks using Auto Sum in a range of cells.
- > average of the marks in a range of cells.
- > highest marks in a range of cells.
- > minimum marks in a range of cells.

Ans. ⇒ To calculate the sum of the marks using Auto Sum in a range of cells.

- 1) Select the formula tab.
- 2) locate the ~~formula~~ function library group. From here, you can access all available functions.
- 3) Select the cell where you want the functions to appear. In this e.g., select G42.
- 4) Select the drop-down arrow next to the Auto Sum command.
- 5) Select Sum. A formula will appear in the selected cell, G42.

→ This formula, =SUM(G2:G40), is called a function. The Auto sum command automatically selects the range of cells from G2 to G40, based on where you inserted the function you can alter the cell range if necessary.

6) Press the Enter key or Enter button on the formula bar. The total will appear. Excel will not always tell you if your formula contains an error, so it's up to you to check all of your formulas.

To calculate the average of the marks in a range of cell.

- 1) Select the cell where you want the function to appear.
- 2) Click the drop-down arrow next to the Auto Sum command.
- 3) Select Average.
- 4) Click on the first cell (in this e.g., C8) to be included in the formula.
- 5) Left-click and drag the mouse to define a cell range (C8 through cell C20, in this e.g.).
- 6) Click the Enter icon to calculate the average.

The highest marks in a range of cells:

C11 is the highest marks in a range of cells.

The minimum marks in a range of cells:

C8 is the minimum marks in a range of cells.

Q13a) Describe various steps involved in the following

- > To modify columns width of a worksheet.
- > To modify the rows height of a worksheet.
- > To delete rows and columns of a worksheet.

Ans. ⇒ To modify columns width of a worksheet.

- Position the cursor over the column line in the column heading, and a double arrow will appear.
- Left-click the mouse, then drag the cursor to the right to increase the column width or to the left to decrease the column width.
- Release the mouse button.

OR

- Left-click the column heading of a column you'd like to modify.
- The entire column will appear highlighted.
- Click the format command in the cells group on the Home tab. A menu will appear.
- Select column width to enter a specific column measurement.
- Select Autofit column width to adjust the column so all of the text will fit.

To modify the row height of a worksheet:

- Position the cursor over the row line you want to modify, and a double arrow will appear.
- Left-click the mouse, then drag cursor upward to decrease the row height or downward to increase the row height.
- Release the mouse button.

OR

- Click the format command in the cells group on the Home tab. A menu will appear.
- Select row height to enter a specific row measurement.
- Select Autofit row height to adjust the row to as all of the text will fit.

To delete rows and columns of a worksheet:

- Select the row and columns you want to delete.
- Click the Delete Command in the cells group on the Home tab.
- Selected column or row deleted.

Q13 b) Describe following terms in the worksheet.
 > Absolute reference and relative reference in formula.

> Cell address.

Ans => Absolute references and relative reference:

1) Relative reference: Cell references in formula automatically adjust to new locations when the formula is pasted into different cells. This is called a relative references.

2) Sometimes when you copy and paste a formula, you don't want one or more cell references to change.

3) An absolute references solves this problem.

4) Absolute References: Cell references in a formula always refer to the same cell or cell range. If a formula is copied to a different location, the absolute reference remains the same.

Absolute references:

An absolute reference is designated in the formula by the addition of a dollar sign (\$). It can precede the column reference or the row reference or both.

Examples of absolute referencing include:

\$A\$2: The column and row do not change when copied.

A\$2: The row does not change when copied.

\$A2: The column does not change when copied.

To create an absolute reference:

1) Select the cell where you want to write the formula (in this example, H2).

2) Type formula =F3*\$C\$2.

3) Copy the formula into H3. The new formula should read =F3*\$C\$2. The F2 reference changed to F3 because it is a relative reference, but C2 remains constant because you created an absolute reference by inserting the dollar signs.

Cell Address:

Each cell has a name, or a cell address, based on the column and row where it is located. For e.g., this cell is C3 because it is where column C and Row 3 intersect.

You can also select multiple cells at the same time. A group of cells is known as a cell range. Rather than a single cell address, you will refer to a cell range using the cell addresses of the first and last cells in the cell range, separated by a colon. For e.g. a cell range that included cells A1, A2, A3, A4 and A5 would be written as A1:A5.

Q14 a) What tools are available to customize our Power Point presentation?

Ans => Tools that are available to customize our Power Point presentation are:

Home: the tools are clipboard, slides, font, paragraphs, drawing and editing.

Insert: the tools are illustrations, links, text, media clips.

Animation: the tools are preview, transition to their slides and animation.

Design: the tools are themes, page set up and background.

Review: the tools are proofing and comments.

View: the tools are presentation view, zoom, color, show or hide, macros and window.

Slide show: the tools are monitor, set up and start slide show.

Q14 b) Write the steps for the following action for creation of power point presentation.

> Open a Blank presentation.

> Save the presentation as lab 1.pptx.

> Add a title to the first slide: the name of your College.

> Type your first name and last name in the subtitle section.

> Add a new slide which has a title and content.

Ans => Open a Blank presentation:

1. Select the file tab to go to Backstage view.

2. Select open. Click it.

3. Select computer, and then click Browse.

Alternatively, you can choose one drive to open files stored on your one drive.

4. The open dialog box will appear.

Save the presentation:

1. Locate and select the save command on the Quick Access Toolbar.

2. If you're saving the file for the first time, the save as pane will appear in backstage view.

3. You'll then need to choose where to save the file and give it a file name.

Add a title to the first slide: the name of your college:

1. Select the slide whose layout you will change so that it can have a title.
2. Click Home > layout.
3. Select Title slide for a standalone title page or select Title and content for a slide that contains a title and a full slide text box.
4. Select the click to add title text box.

Type your first name and last name in the subtitle section:

1. Click on the subtitle or text place holder.
2. Type the text i.e. the first name and the last name.
3. Press ENTER.

Add a new slide which has a Title and Content:

1. Select the slide whose layout you will change so that it can have a title.
2. Click Home > layout.
3. Select Title slide for a standalone title page or select title and content for a slide that contains a title and a full slide text box.
4. Select the click to add title text box.

Q15) Write steps for creation of a set of power point slides that demonstrates your skill to use the tools of power point. It should include the following things.

- > Title slide and bullet list.
- > Inserting Excel sheet.
- > Clip art and text.
- > Slide show effects.

Ans => Title slide and bullet list:

1. Select on the New slide/layout tab and the title slide will appear.
2. Click the arrow to choose different bullet styles, to add a bullet list.

Inserting Excel sheet:

1. To insert a new worksheet in front of an existing worksheet.
2. Select the worksheet.
3. Select the Home tab in the cells group.
4. Click insert.
5. Click insert sheet OR.
6. Right-click the tab of an existing worksheet.
7. Click insert.

Clip art and text:

1. On the insert tab, we can also insert clip art into the document, including drawing, movies, sounds, stocks photography to illustrate a specific concept.

Slide show effects:

1. Click on the slide show tab and select the different effects on the slide show group.

PART-2.

Q16) What are the difference between Machine language and High-level language?

Ans => Machine language:

- o A computer programming language consisting of binary instructions which a computer can respond to directly.
 - o Sometimes, it is referred to as machine code or object code. Machine language is a collection of binary digits or bits that the computer reads.
 - o A computer cannot directly understand the programming languages used to create computer programs, so the program code must be compiled.
- Example: 01001000, 01100101, 01101000, 01101100, etc.

High-level languages:

- o A high-level languages is a programming language that enables development of a program in a much more user-friendly programming context.
- o This language is a programming language with strong abstraction about the details of the computer in contrast to low-level programming language (assembly language).

Q1. Ex: C, C++, Java.

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o High-level languages are grouped in two categories based on execution model compiled or interpreted languages.

o Compiler and interpreter are used to convert the high level languages into machine level language. The program written in high level language is known as source program and the corresponding machine level language program is called as object program.

o Compiler read the program at a time and searches the error and lists them. If the program is error free then it is converted into object program.

o When program size is large then compiler is preferred. While as interpreter read only one line of the source code and convert it to object code.

Q17. Discuss about different data types of C programming language.

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Ans $\Rightarrow$ Each variable in C has an associated data type. Each data type requires different amounts of memory and has some specific operations which can be performed over it. Let us briefly describe them one by one. Following are the examples of some very common data types used in C:

$\rightarrow$ Char: The most basic data type in C. It stores a single character and requires a single byte of memory in almost all compilers.

$\rightarrow$ int: As the name suggests, an int variable is used to store an integer.

$\rightarrow$ float: It is used to store decimal numbers (numbers with floating point value).

$\rightarrow$ double: It is used to store decimal numbers (numbers with floating point value but its range of values is high in comparison to float).

Important data type in C with range.

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Type	Keyword	Value range which can be represented by this data type.
Character	char	-128 to 127 or 0 to 255.
Number	int	-32,768 to 32,767 or 2,147,483,648 to 2,347,483,647.
Small Number	short	-32,768 to 32,767.
Long Number	long	-2,147,483,648 to 2,147,483,647.
Decimal Number	float	1,2E-38 to 3,4E+38 till 6 decimal places.

These data types are called primitive data types and we can use, these data types to build more complex data types, which are called user-defined data type, for example a string will be a sequence of characters.

Q18. Find the output of the following expressions.

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a) $x = 20/5 * 2 + 30 - 5$ b) $y = 30 - (40/10 + 6) + 10$ c) $z = 40 * 2/10 - 2 + 10$.

Ans $\Rightarrow x = 20/5 * 2 + 30 - 5$

o $20/5 * 2 + 30 - 5$

Perform the operation in parentheses first: $5 * 2 = 10$

Formula becomes $20/10 + 30 - 5$

because the division comes before the addition, divide $20/10 = 2$

Formula becomes $2 + 30 - 5$

Next the addition takes place before the subtraction: $2 + 30 = 32$.

Formula becomes $32 - 5$

Finally, $32 - 5 = 27$

The final answer is 27.

$$b, Y = 30 - (40/10 + 6) + 10$$

$$\text{Ans} \Rightarrow Y = 30 - (40/10 + 6) + 10$$

$$\textcircled{1} 30 - (40/10 + 6) + 10 \quad \text{Perform the operation in parentheses first: } 10 + 6 = 16$$

$$\textcircled{2} \text{ formula become } 30 - (40/16) + 10 \quad \text{Perform the LCM: } 40/16 + 10$$

$$\Rightarrow \frac{40+40}{16} \Rightarrow \frac{80}{16} = 5$$

$$\textcircled{3} \text{ formula become } 30 - 5 \quad \text{Finally } 30 - 5 = 25$$

The final answer is 25.

$$c, Z = 40 * 2 / 10 - 2 + 10$$

$$\text{Ans} \Rightarrow Z = 40 * 2 / 10 - 2 + 10$$

$$\textcircled{1} 40 * 2 / 10 - 2 + 10 \quad \text{Perform the operation in parentheses first: } 10 - 2 = 8$$

$$\textcircled{2} 40 * 2 / 8 + 10 \quad \text{because multiplication comes before the division: Multiply } 40 * 2 = 80$$

$$\textcircled{3} 80 / 8 + 10 \quad \text{Next the division takes place before the addition: divide } 80 / 8 = 10$$

$$\textcircled{4} 10 + 10 \quad \text{Finally } 10 + 10 = 20$$

The final answer is 20.

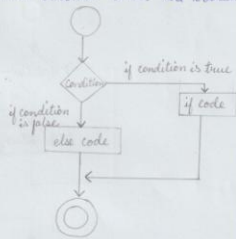
Q19. Describe the syntax of the following statements:

- a) If-else statement b) for loop c) while loop
d) do-while loop.

Ans $\Rightarrow$ a) If-else statements:

if statement can be followed by an optional else, block of statement, which executes when the Boolean expression is false.

Syntax
if (expression)
{
 true Block of statement;
}
else
{
 else Block of statement;
}



b) for loop:
for loop is similar to while. Basic syntax of for loop is as follows:
for (expression 1; expression 2; expression 3)
{
 block of statement;
}

In the above syntax:

- 1 Expression 1 - Initialize variables.
- 2 Expression 2 - Condition expression, as long as this condition is true, loop will keep executing.
- 3 Expression 3 - expression 3 is the modifier which will increase or decrease the value of the variable.

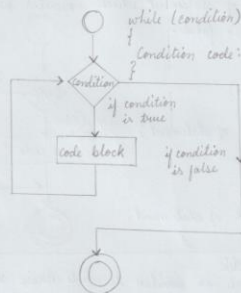
c) while loop:

Basic syntax of while loop is as follows:

while (condition)
 single statement;

OR

while (condition)
{
 block of statements;
}



The above code can be represented in the form of a flow diagram as shown above.

d) do... while loop:

do... while loop is just like a while loop except that the test condition is checked at the end of the loop rather than the start. This has the effect that the body of the loop are always executed at least once.

Basic syntax of do... while loop is as follows.

do
{
 single statement
 OR
 block of statement
}
while (condition);

This code can be represented in the form of a flow diagram as shown below:

Q30. Find the output of the following programs segments.

a)	b)
<pre>#include <stdio.h> int main () { int i; for (i=1; i<2; i++) { printf("IMS Ghaziabad\n"); } }</pre>	<pre>#include <stdio.h> int main () { int i=1; printf("IMS Ghaziabad\n"); i = i+1; }</pre>

c)

```
#include <stdio.h>
void main ()
{
    int a=10, b=100;
    if (a>b)
        printf("Largest number is %d\n", a);
    else
        printf("Largest number is %d\n", b);
}
```

Ans →

```
#include <stdio.h>
int main ()
{
    int i;
    for (i=1; i<2; i++)
    {
        printf("IMS Ghaziabad\n");
    }
}
```

Output:
IMS Ghaziabad
IMS Ghaziabad

b)

```
#include <stdio.h>
int main ()
{
    int i=1;
    printf("IMS Ghaziabad\n");
    i = i+1;
}
```

Output:
IMS Ghaziabad
IMS Ghaziabad.

c)

```
#include <stdio.h>
void main ()
{
    int a=10, b=100;
    if (a>b)
        printf("Largest number is %d\n", a);
    else
        printf("Largest number is %d\n", b);
}
```

When the above program is executed, it produces the following result -

c. Largest number is 100.