101 : ASSIGNMENT

Q.1) What are the four fundamental parts of computer, Explain it with the help of diagram.

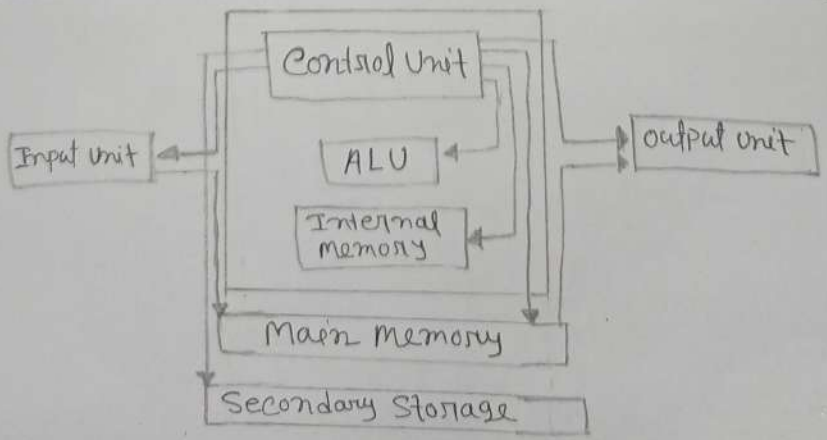
Ans: A computer has four main components: Input Units, the central processing Unit or CPU, the Primary memory, and output Units.

i) Input Units :- The devices to input information such as a keyboard, and mouse.

ii) CPU :- The CPU is further broken up into ALU, Control Unit, and Instruction Unit.

iii) Primary memory :- Computer programs instructions converted into machine code are stored in Primary Storage or memory.

iv) Output Unit :- The devices to output information such as a printer, monitor, and Speaker.



Components of a computer

Q. 2) Discuss about the classification of computers based on size and capacity.

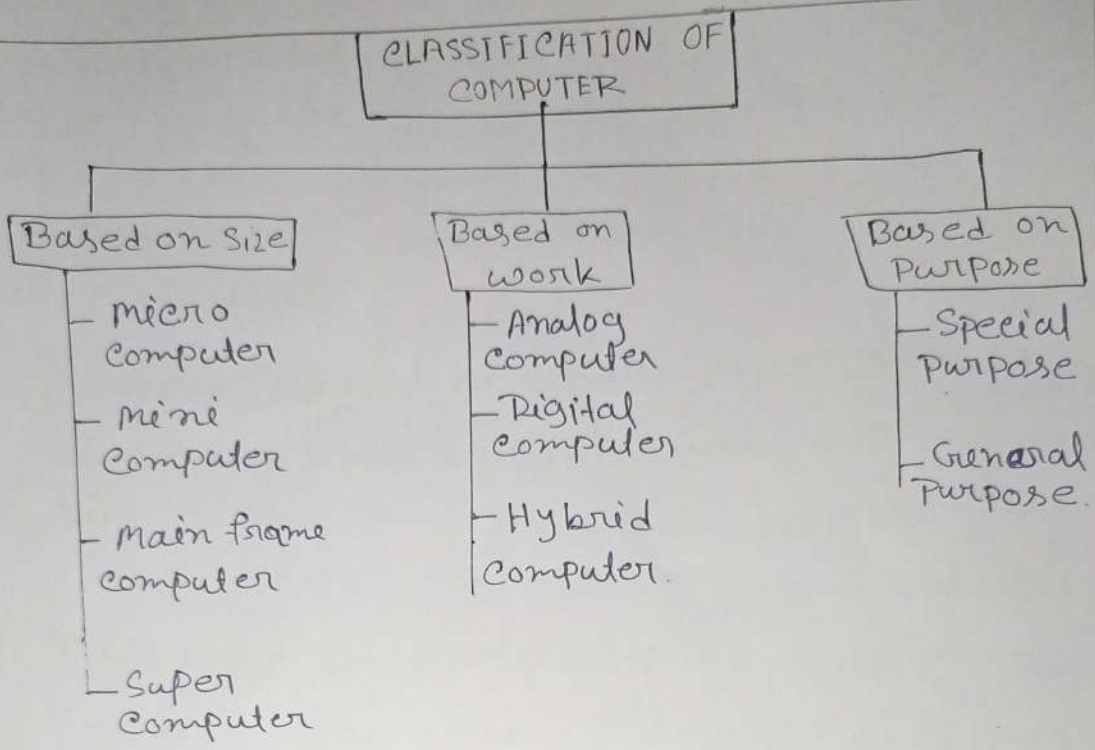
Ans:= A computer is a device that transforms unusable data into information. According to the set of instructions the user gives it, it processes the input and generates the desired outcome. Modern digital computers are classified on the basis of their size and capacity. The size and data handling capabilities of the various types of computers may be used to categorize them into two groups.

a. Computers according to Size:-

- Supercomputer.
- Mainframe Computer.
- Personal Computer.
- Workstation.
- Mini computer.

b. Computer according to their capacity to manage data.

- Digital Computer.
- Hybrid Computer.
- Analog Computer.



Q.3) What is the meaning of computer generations? How many computer Generations are defined? What technologies were / are used?

Ans:- A computer is an electronic device that manipulates information or data. It can store, retrieve, and process data. Nowadays, a computer can be used to type documents, send an email, play games, and browse the web. It can also be used to edit or create Spreadsheets, Presentations, and even videos. But the evolutions of this complex system started around 1940 with the First Generation of Computer and evolving ...

Computer have evolved significantly over the years, and the history of computers is often divided into generations based on the technology used. Here are the five generations of computers:

i) First Generation (1940s - 1950s):- The first computers used vacuum tubes for processing and magnetic drums for storage. They were large, expensive and unreliable.

ii) Second Generation (1950s - 1960s):- The second generation of computers replaced vacuum tubes with transistors, making them smaller, faster, and more reliable. Magnetic core memory was also introduced which was faster and more reliable than magnetic drums.

iii) Third Generation (1960s - 1970s):- The third generation of computers used integrated circuits, which allowed for even smaller and faster computers. They also introduced magnetic disk storage and operating systems.

iv) Fourth Generation (1970s - 1980s):- The fourth generation of computers saw the introduction of microprocessors, which made personal computers possible. They also introduced graphical user interfaces and networking.

v) Fifth Generation (1980s - Present):- The fifth generation of computers is still ongoing, and is focused on artificial intelligence and Parallel Processing. This generation also saw the development of mobile computing and the internet.

Q.4) Differentiate between volatile & non-volatile memories.

Ans:- i) Volatile memory is the type of memory in which data is lost as it is powered-off.

Non-volatile memory is the type of memory in which data remains stored even if it is powered-off.

ii) Contents of Volatile memory are stored temporarily.

Contents of Non-volatile memory are stored permanently.

iii) It is faster than Non-volatile memory

It is slower than volatile memory.

iv) RAM is an example of volatile-memory.

ROM is an example of Non-volatile memory.

v) In volatile memory, data can be easily transferred in comparison to non-volatile memory.

In Non-volatile memory, data cannot be easily transferred in comparison to volatile memory.

vi) In Volatile-memory, Process can read and write.

In Non Volatile-memory, Process can only read.

vii) Volatile-memory generally has less storage capacity.

Non-Volatile memory generally has more storage capacity than volatile memory.

viii) In Volatile-memory, the Program's data are stored which are currently in process by the CPU.

In Non-Volatile memory, any kind of data which has to be saved permanently are stored.

ix) Volatile-memory is more costly per unit size.

Non-Volatile memory is less costly per unit size.

x) Volatile memory has a huge impact on the system's performance. Non-Volatile memory has a huge impact on a System's storage capacity.

xi) In Volatile-memory, processor has direct access to data.

In Non-Volatile memory, processor has no direct access to data.

xii) Volatile-memory chips are generally kept on the memory slot.

Non-Volatile memory chips are embedded on the motherboard.

Q. 5) Distinguish among system software, application Software and Open source Software on the basis of their features.

Ans:- System Software :- System Software is the type of Software that is the interface between application Software and the system. Low-level languages are used to write the system Software. System Software maintains the system resources and gives the path for application Software to run. An important thing is that without system Software, the system can not run. It is general-purpose Software.

Functions of System Software

- Memory Management. • Processor Management • File Management • Security • Error-detecting Aids. • Scheduling • Features of

Features of System Software

• System Software is written in a low-level language. • The size of System Software is smaller. • System Software is complex to understand. • System Software is present near hardware components.

Types of System Software

• Operating System. • Language Processor. • Divice Driver.

Application Software:- Application Software is the type of software that runs as per user request. It runs on the platform which is provided by system software. High-level languages are used to write the application software. It's a specific purpose software. The main difference between System software and Application Software is that without system software, the system can not run on the other hand without application software, the low-level maintenance system always runs.

Function of Application Software

- Information and data management of documents (document exchange systems). • Development of visuals and video Emails, text messaging, audio and video conferencing and cooperation are all options. • management of accounting, finance and payroll. • management of resources (ERP and CRM) systems.

Features of Application Software

• Application Software is written in a high-level language. • Application software requires more storage space than system software • Only a single task is performed by each application software. • Application Software is easy to build in comparison to system software.

Types of Application Software

- General Purpose Software.
- Customized Software.
- Utility Software.

Open Source Software :- Open Source Software is software in which the source code is also available along with the software. Moreover, the users have the right to view, modify, and enhance this code. Futhermore, no license is required for the software. The software can be cost-free or chargeable. besides, the users can also share the software without any license violation. Examples are Android, Linux, Apache server, Ionic, MySQL etc. People buy this software due to certain reasons. These reasons are as follows: • The results are of quite high-quality. • Users can easily change the software according to requirements. • It is more secure. • Long term use. • Transparency. • Affordable. • Help in developing skills.

Examples of Open source Software Operating System are as follows:

- Linux
- Android
- ReactOS

Q.6.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.

Q6.b) Write steps regarding followings

- To change the font style.
- To change the font size.
- To change the font colour.
- To highlight (in yellow) the line that reads "need to get IMS's address".

a) Ans:- To create and save a new document in microsoft word, follow these steps:-

i) Open MS-word on your computer.

ii) Click on the "File" tab located at the top left corner of the screen.

iii) Click on "New" to create a new document

iv) Choose a template or a blank document to start with.

v) Type or add your content to the new document.

vi) Click on the "File" tab again.

vii) Click on "Save As" to save the document.

viii) Choose a location to save the document on your computer.

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ix) Type in a name for the document. and the filname is "yourself".

x) Choose a file format (e.g. docx) from the drop-down menu.

xi) Click on the "Save" button to save the document.

You can also use the keyboard shortcut Ctrl + N to create a new document and Ctrl+S to save the document.

Q.6. b) Ans:- The steps are - Select the text or cells with text you want to change. To select all text in a word document, Press Ctrl + A.

On the Home tab, click the font size in the Font Size box.

Click Format > Text Styles. In the Item to change list, click All, then select the font, size, or color you want for all text in the current view. ---

Select the text that you want to change. On the Home tab, in the Font group, choose the arrow next to Font color. and then select a color.

Go to Home and, select the arrow next to text Highlight Color. Select the color that you want.

Q.7) 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: Steps to Create a Document in Microsoft word :-

Open MS-word:

- If you have Microsoft word installed on your computer, open the application. Choose a Blank Document.
- Once word is open, you will typically see a start screen. If not, go to the 'File' menu and select "New" to create a new blank document.

Write your Document:

- Start typing your document. You can also format the text, add images, and use various tools provided by word to enhance your document.

Save your Document:

To save your document, go to the "File" menu and select "Save" or "Save AS."

Select the Save Location:

- Choose the location on your computer where you want to save the file. You can save it to your Documents folder or any other preferred location.

Name your File:

In the "File Name" field, enter a name for your document. This is the name by which your file will be identified.

Choose a File Format:

Below the file name field, you can choose the file format. The default format is usually "docx" for modern Word versions. If you need compatibility with older Word versions, you might choose. "doc".

Click "Save":

After entering the file name and selecting the format, click the "Save" button.

Q.8) Create a file in ms-Word for the following document and save it with file name 'equations'. Describe all steps involved in it.

Equations

$X_2 + Y_5 = 30$

$Z_3 + Q_4 = 50$

$A_2 + 13^8 = X_2 + Y^8$

Ans: Launch Microsoft Word on your computer.
Create a New Document!

P.T.O

Start a new, blank document by selecting "File" and then "New" or use the shortcut (Ctrl+N).

Insert Equations: Place your cursor where you want to insert the equations. Go to the "Insert" tab in the ribbon at the top.

Use Equation Tools:

In the "Symbols" group, you'll find an "Equation" option. Click on it to open the Equation Tools tab.

Insert Equations:

$2+2=30$

$X_2 + Y_2 = 30$

$3 + 4 = 50$

$Z_3 + 9_4 = 50$

$2 + 8$ ~~A2~~

$A_2 + B_8 = X_2 + Y_8$

You can click on each equation to edit it. The Equation Tools tab provides various options for customization. Type Additional Text (if needed): Use the keyboard to type any additional text or explanations in the document.

Save your Document:

Go to the "File" tab and choose "Save" or "Save As".

Select to Save location:

Choose the folder or location where you want

to save your file.

Name your file:

In the "File Name" field, enter "equations" as the name for your document.

Choose a File Format:

Select the file format, such as ".docx." click the "Save" button to save your document with the equations.

Q.9) 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 :— To convert text to a table or a table to text, start by clicking the Paragraph hide Show button Show/Hide Paragraph mark on the Home tab. This lets you see how text is separated in your documents.

Insert separator characters — such as commas or tabs — to indicate where to divide the text into table columns.

Note: If you have commas in your text, use tabs for your separator characters.

Use Paragraph marks to indicate where you want to begin a new table row.

In this example, the tabs and paragraph marks will produce a table with 3 columns and 2 rows:

Text to convert to table

Select the text that you want to convert, and then click Insert > Table > Convert Text to table.

In the Convert Text to Table box, choose the options you want.

The Convert Text to Table dialog box is shown.

Under Table size, make sure the numbers match the numbers of columns and rows you want.

Under AutoFit behavior, choose how you want your table to look. Word automatically chooses a width for the table columns.

Q.10.) Create a file in MS-word to insert a table in the document. Describe all steps involved in it.

Ans:- The steps are -

- Open a blank Word document.
- In the top ribbon, press Insert.
- Click on the Table button.
- Either use the diagram to select the number of columns and rows you need, or click Insert Table and a dialog box will appear where you can specify the number of columns and rows.
- The blank table will now appear on the page.

Q.11) Create a following worksheet in MS-excel and save it with name 'book1'.

Ans. Open Microsoft Excel: Launch Microsoft Excel on your computer. Create a New Workbook: Start a new, blank workbook by selecting "File" and then "New" or use the shortcut (Ctrl+N). Enter Data: In the first column (Column A), enter the heading "Roll NO" in cell A1. In the second column (Column B), enter the heading "Name" in cell B1. In the third column (Column C), enter the heading "Marks" in cell C1. Enter the following data in cells A2 to A11: 1 to 10 (for Roll No). Enter the following data in cells B2 to B11: N1 to N10 (for name). Enter the following data in cells C2 to C11: 60, 70, 80, 90, 40, 50, 77, 44, 88, 55 (for marks). Format the Data (Optional): You can format the data, such as adjusting column widths, font styles, or cell colors, to make it visually appealing. Save the Workbook: Go to the "File" tab and choose "Save" or "Save As." Name the File: In the "File name" field, enter "book1" as the name for your workbook. Choose a File Format: choose the file format, such as ".xlsx." Click "Save": Click the "Save" button to save your workbook.

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 Autosum in a range of cells (C2:C11)
- average of the marks in a range of cells (C2:C11).
- highest marks in a range of cells (C2:C11).
- minimum marks in a range of cells (C2:C11).

Ans: Calculate Sum, Average, Highest and minimum Marks: Open the excel worksheet: Open the workbook you created in question no. 10. Calculate Sum using Auto Sum: Click on the cell where you want to display the sum (let's say D12). Go to the "Home" tab. Click on the "Auto Sum" button in the Editing group. Excel will automatically select the range C2:C11. Press Enter to complete the calculation. Calculate Average: Click on the cell where you want to display the average (let's say D13). Enter the formula = AVERAGE (C2:C11) and press Enter. Find Highest Marks: Click on the cell where you want to display the highest marks (let's say D14). Enter the formula = MAX (C2:C11) and press Enter. Find minimum marks: Click on the cell where you want to display the minimum marks (let's say D15). Enter the formula = MIN (C2:C11) and Press Enter.

Q. 13.a) Describe various steps involved in the following

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

Ans:- Select the column or columns that you want to change.

- Go to Home > Cells > Format.
- On the Home tab, click Format.
- Under cell Size, select Column Width.
- In the Column width box, type the value that you want.
- Select Ok.

Right - click in a table cell, row or column you want to delete.

- On the menu, click Delete cells.
- To delete one cell, choose Shift cells left or Shift cells up.
- To delete the row, click Delete entire row.
- To delete the column, click delete entire column.

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Q. 13 b.) Describe following terms in the worksheet

- Absolute reference and relative reference in formula.
- cell address.

Ans:- There are two types of cell references; relative and absolute. Relative and absolute references behave differently when copied and filled to other cells. Relative reference change when a formula is copied to another cell. Absolute references, on the other hand, remain constant no matter where they are copied.

Q. 14. a) what tools are available to coustomize our Powerpoint Presentation?

Ans: 18 Best Presentation Tools for Beautiful Presentations -

Tool #1: Templates and Themes.

Tool # 2: Slide Layouts.

Tool # 3: Fonts

Tool # 4: Colors Themes.

Tool # 5: Icons

Tool # 6: Shapes

Tool # 7: Stock Photos

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Tool # 8 : Charts and Graphs.

Tool # 9 : Maps.

Tool # 10 : Tables.

Tool # 11 : Flowcharts.

Tool # 12 : Icon Charts.

Tool # 13 : Radials.

Tool # 14 : Progress Bars.

Tool # 15 : Animation

Tool # 16 : Transitions.

Tool # 17 : Interactivity.

Tool # 18 : Audio and video.

Q.14 b) Write the steps for the following action for creation of power point presentation.

- ☐ Open a Blank presentation
- ☐ Save the presentation as Lab1.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.

P.T.O

Ans:- Open PowerPoint.

In the left pane, select New.

Select an option:

- To create a presentation from scratch, select Blank Presentation.
- To use a prepared design, select one of the templates.
- To see tips for using PowerPoint, select Take a Tour, and then select Create.

On the File tab, select Save.

- File > Save or Save As

Do of the following:

- To save to your local drive, such as your laptop, a flash drive, CD or DVD drive, select Computer.
- To Save to a SharePoint Library, select SharePoint.
- Under Save As > Recent Folders, select Browse, pick a path and file folder, and then name the file.
- Select Save.

Q. 15) 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 & bullet list.
- ☐ Inserting excel sheet.
- ☐ Clip art and Text.
- ☐ Slide show effects.

Ans:- Open Microsoft PowerPoint: Launch microsoft PowerPoint on your computer. Create a New Presentation: Select "File" > "New" to create a new presentation. Title Slide: Click on the first slide and enter a title (e.g., "PowerPoint Skills Demonstration"). Add a subtitle with your name or any additional information. Bullet List Slide: Add a new slide using the "New Slide" button or Press Ctrl + M. Title the Slide (e.g., "Bullet List"). Create a bullet list using the bullet point icon on the toolbar. Insert Excel Sheet: Add another new slide. Title it (e.g., "Excel sheet"). Go to the "Insert" tab, click on "Object" and select "microsoft Excel worksheet." Insert a simple Excel sheet with some data. Clip Art Slide: Add a new slide. Title it (e.g., "clip Art"). Go to the "Insert" tab click on "Online Pictures" or "clip Art" (depending on your Power Point version). Inpert a relevant clip art image. Text Slide: Add a new slide. Title it (e.g., "Text slide"). Insert a text box using the "Text Box" option in the toolbar.

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Enter some text in the text box. Slide Show Effects: Go to the "Transition" tab. Select a transition effect for each slide (e.g., Fade, Slide, etc.). Set the transition duration and add sound if desired. Preview the Slide Show: Click on the "Slide Show" tab and select "From Beginning" to preview your presentation. Save your Presentation: Go to "File" > "Save As". Enter a name for your presentation (eg., "PowerPoint_Demo") and choose a location to save it. Run the Slide Show: Run the slideshow to see the title slide, bullet list, Excel sheet, clip art, and text slide with effects.

Part-2

Q.16) What is the difference between Machine Language and High Level Language?

Ans:- Machine language or machine code, is the only language that is directly understood by the computer, and it does not need to be translated. All instructions use binary notation and are written as a string of 1s and 0s. A program instruction in machine language may look something like this:

1	10010101100101001111101010011011100101

A High-level language is a programming language that uses english and mathematical symbols, like +, -, % and many other, in its instructions. When using the term 'programming languages,' most people are actually referring to high-level languages. High-level languages are the languages most often used by programmers to write programs. Examples of high-level languages are C++, Fortran, Java and Python.

To get a flavor of what a high-level languages actually looks like, consider an ATM machine where someone wants to make a withdrawal of $100. This amount needs to be

compared to the account balance to make sure there are enough funds. The instruction in a high-level computer language would look something like this :

```
1 | x = 100
2 | if balance x:
3 | Print 'Insufficient balance'
4 | else:
5 | Print 'Please take your money'
```

Q.17) Discuss about different data types of C Programming Language.

Ans:- A data type is an attribute that tells a computer how to interpret the value. C provides several built-in data types, such as integer (int), character (char), floating-point (float), and double-precision floating-point (double), among others.

Char type this represents the character data type, and it can be either signed or unsigned with a constant size of 1 byte for both cases.

The data type is a collection of data with values having fixed values, meaning as well

as its characteristics. The data types in C can be classified as follows: • primary • Derived • Enumeration • void (data types).

Both float and double are similar but they differ in the number of decimal places. The float value contains 6 decimal place whereas double value contains 15 or 19 decimal places.

We use the keyboard int to declear the variables and to specify the return types of a function. The integer data types is used with different type modifiers. like —.

void data type means nothing or no value. Generally, the void is used to specify a function which does not return any value.

The memory size of the basic data types may change according to 32 or 64-bit operating system. Integer data type. Double data type.

Q. 18) Find the output of the following statements.

a) X = 20/5*2+30-5

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

c) Z = 40*2/10 -2+10

Ans: a) To find the output of the expression x= $\frac{20}{5}$ x 2 +30-5, follow the order of operations (PEMDAS / BODMAS):

1. Parentheses/Brackets.
2. Exponents / orders
3. Multiplication and Division (from left to right)
4. Addition and Subtraction (from left to right)

Let's evaluate the expression step by step:

1. $\frac{20}{5} = 4$
2. $4 \times 2 = 8$
3. $8 + 30 = 38$
4. $38 - 5 = 33$

Therefore, the output of the expression $x = \frac{20}{5} \times 2 + 30 - 5$ is $x = 33$.

b) To find the output of the expression $y = 30 - (\frac{40}{10} + 6) + 10$, follow the order of operations (PEMDAS / BODMAS):

1. Parentheses / Brackets
2. Exponents / orders
3. Multiplication and Division (from left to right)
4. Addition and subtraction (from left to right)

Let's evaluate the expression step by step:

1. $\frac{40}{10} = 4$

2. $4 + 6 = 10$

3. $30 - 10 = 20$

4. $20 + 10 = 30$

Therfore, the output of the expression

$y = 30 - (\frac{40}{10} + 6) + 10$ is $y = 30$.

c) To find the output of the expression

$z = \frac{40 \times 2}{10} - 2 + 10$, follow the order of operations (PEMDAS/BODMAS):

1. Parentheses / Brackets
2. Exponents / orders.
3. Multiplication and Division (from left to right).
4. Addition and Subtraction (from left to right).

Let's evaluate the expression step by step:

1. $40 \times 2 = 80$

2. $\frac{80}{10} = 8$

3. $8 - 2 = 6$

4. $6 + 10 = 16$

Therefore, the output of the expression $z = \frac{40 \times 2}{10} - 2 + 10$ is $z = 16$.

Q.19) Describe the syntax of the following expressions
a) if-else statement. b) for loop. c) while loop.
d) do-while loop.

Ans:- a) If-else statement: The 'if-else' statement is used for decision-making in programming. It has the following syntax:

```
Python
if (condition):
    # Code to execute if the condition is true.
else:
    # Code te execute if the condition is false
```

- condition: A boolean expression that evaluates to either 'True' or 'False'.
- The code block following 'if' is executed if the condition is 'True'.
- The code block following 'else' is executed if the condition is 'False'.

b) for loop: The 'for' loop is used for iterating over a sequence (such as a list, tuple, or range). The syntax is as following.

```
Python
for variable in sequence:
    # code to execute in each iteration
```

- 'variable': A variable that takes on the value of each element in the sequence during each iteration.
- 'sequence': The sequence of elements over which the loop iterates.

c) **While Loop**: The 'while' loop is used for executing a block of code as long as a specified condition is 'True'. The syntax is as follows:

```
Python
while (condition):
    # Code to execute while the condition is true.
```

- 'condition': A boolean expression that is checked before each iteration.
- The code block is executed repeatedly as long as the condition is 'True'.

d) **do - While Loop**: In some programming languages (not in python), a 'do - while' loop is used. However, Python doesn't have a built-in 'do - while' loop. Instead, you can achieve similar functionality using a 'while' loop with an initial check.

```
Python
while True:
    # code to execute in each iteration
    if not (condition)
        break
```

- The loop will execute at least once, and then the condition is checked for subsequent iterations.
- The loop continues executing as long as the condition is 'True'.
- The 'break' statment is used to exit the loop if the condition becomes 'False'.

Q.20.) Find the output of the following program segments.

a)
```
#include <stdio.h>
int main()
{
  int i;
  for(i=1; k2; i++)
  {
    Printf("IMS Ghaziabad\n");
  }
}
```

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

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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: a) ims ghaziabad

b) IMS Ghaziabad
IMS Ghaziabad.

c) Largest number is 100.
