

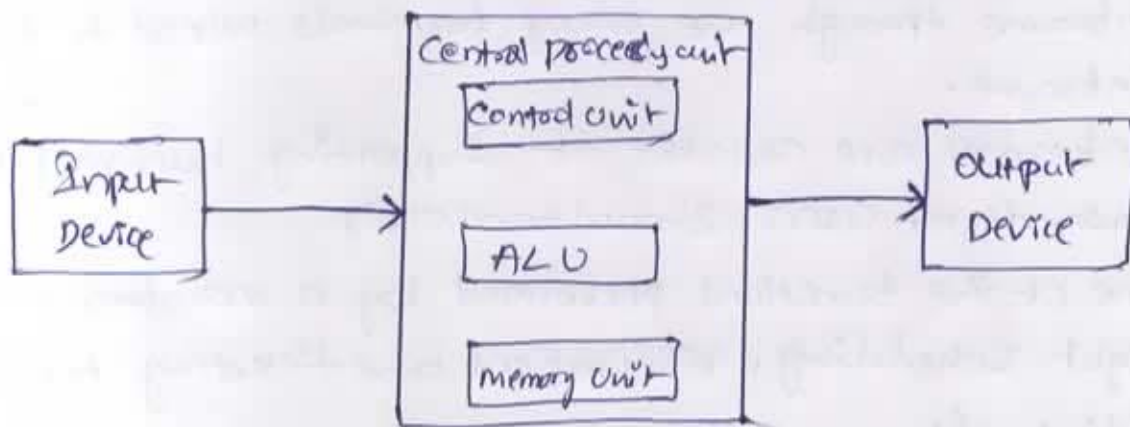
CCA-101: Fundamentals of IT & programming

Assignment - 1

Q1:- what are the fundamental parts of computer? Explain it with the help of diagram.

Ans:- The four main parts of computer which ensure the users can access a wide variety of tools and services include the Central processing unit (CPU), the mother board, the hard drive and Random Access memory (RAM).

The four basic functions of a computer system: input, output, processing and storage.



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

Ans:- Computers are classified into four sizes based on capacity and size, from largest to smallest.

- 1) Supercomputers
- 2) mainframe computers
- 3) mini computers
- 4) micro computers (or) personal computers

Super computers :- Super Computers 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.
- ⇒ Super computers have thousands of processors.
- ⇒ Because of their extraordinary speed, accuracy and processing power, Super computers are well suited for solving highly complex problems & huge amounts of calculations.

mainframe Computer

- ⇒ mainframe computers are very large often filling an entire room and can process thousands or millions of instructions per second.
- ⇒ In a mainframe environment, users connect to the mainframe through the many terminals wired to the mainframe.
- ⇒ mainframes are capable of supporting hundreds to thousands of users simultaneously.
- ⇒ Some of the functions performed by a mainframe include flight scheduling, reservations and ticketing for an airline etc.

~~Some~~ mini Computers

- ⇒ mini computers are much smaller than mainframes.
- ⇒ These computers are also less expensive.
- ⇒ Sometimes referred to as midrange server or midrange computer.
- ⇒ They are typically larger, more powerful and more expensive than desktop computers.
- ⇒ Midrange computers are usually used by small and medium-sized businesses as their servers.
- ⇒ Users connect to the server through a network by using desktop computers.

Micro Computers

- ⇒ Micro computers are the most frequently used type of computer.
- ⇒ It is also known as personal computer (PC)
- ⇒ A microcomputer is a small computer system designed to be used by one person at a time.

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

Ans:- Computer generations refer to the evolution of computers through advancements in their circuitry and technology. Each generation is characterized by dramatic improvements over the previous generation in the technology used to build computers, in terms of the internal organization of computer and programming languages.

First Generation: Vacuum Tubes (1940-1956)

- ⇒ The first computer systems used vacuum tubes for circuitry and magnetic drums for memory.
- ⇒ These computers were very expensive to operate
- ⇒ Computers of this generation consumed a lot of electricity
- ⇒ First generation computers relied on machine languages, the lowest-level programming language understood by computers to perform operations.
- ⇒ They could only solve one problem at a time. It would take operators days or even weeks to set-up a new problem
- ⇒ Input was based on punched cards and paper tape, and input was displayed on printouts
- ⇒ First computers generated a lot of heat, which was often the cause of malfunctions.

Second Generation: Transistors (1956-1963)

- ⇒ Transistors replaced vacuum tubes in the second generation of computers.
- ⇒ The transistor 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.
- ⇒ Second-generation computers still relied on punched cards for input and printouts for output.
- ⇒ Second-generation computers moved from binary machine language to symbolic, or assembly language.

Third Generation:- Integrated Circuits (1964-1971)

- ⇒ The development of the integrated circuit was the hallmark of the third generation of computers.
- ⇒ Transistors were replaced by integrated circuits, which drastically increased the speed and efficiency of computers.
- ⇒ Instead of punched cards and printouts, users interacted with third generation computers through keyboards and monitors.
- ⇒ Computers for the first time became accessible to a mass audience because they were smaller and cheaper than their predecessors.

Fourth Generation:- Microprocessors (1971-Present)

- ⇒ The microprocessor brought the fourth generation of computers as thousands of integrated circuits were built onto a single silicon chip.
- ⇒ What in the first generation filled an entire room and could now fit in the palm of the hand.
- ⇒ In 1981, IBM introduced its first computer for the home user.
- ⇒ In 1984, Apple introduced the Macintosh.
- ⇒ Microprocessors also moved out to the desktop computers.

- ⇒ Fourth generation computers also covered the development of Graphical User Interface (GUIs), mouse and handheld devices.
- ⇒ Quantum computation and remote technology will radically change the face of computers in years to come
- ⇒ The goal of fifth-generation computing is to develop devices that respond to natural language input and are capable of learning and self-organization.

Q4:- Differentiate between Volatile & Non-Volatile memories.

Ans:- Volatile memory is temporary and loses its data once the power is turned off, whereas non-volatile memory is permanent and retains its data even after power loss. Volatile memory is faster, but has less storage capacity compared to Non-volatile memory.

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

Ans:- Software has mainly divided into two categories:-

- 1) System Software
- 2) Application Software

1) System Software:- It is a type of software that is designed to run a computer's hardware and application programs.

⇒ Software like operating systems, compilers, editors and drivers etc. come under this category.

⇒ A computer cannot function without the presence of System Software.

⇒ Operating system is System Software that manages computer hardware and software resources and provides services.

⇒ Operating system acts as manager of all the resources of Computer i.e. resource manager.

2) Application Software:- It is software created for a specific purpose, used by end users. It can be called an application or simply an app.

Examples:- Word processor, a web browser, media player etc.

Open Source :- It technology is defined as the development of software by allowing end users and developers to not only see the source code of software, but modify it as well.

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

The Linux operating system (OS) is the best-known examples of open source software.

Q5:- 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.

- ⇒ Click the start menu and then select MS Word
- ⇒ Click the Microsoft Office button / file tab
- ⇒ Select New. The New Document dialog box appears.
- ⇒ Select Blank document. It will be highlighted by default.
- ⇒ A new blank document appears in the word window.
- ⇒ Move a mouse to the location where I want to insert text in the document
- ⇒ Type the text: "my self S. Ramakrishna, I have completed my graduation." and so.
- ⇒ Then click the Microsoft Office button or file tab.
- ⇒ Select the Save option from the menu.
- ⇒ It will open the save location then enter the file name "yourself" and click Save

⇒ It will save on yourself.doc name.

Q6:- b) write steps regarding followings

⇒ To change the font style

- * Select the Text you want modify
- * Click on font style box on the Home tab. The font style drop-down menu appears.
- * Move your cursor over the various font styles.

* Left-click the font style you want to use.

* Then font style will change in the document.

⇒ TO change 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 you want to modify.

* Click on the font color box on the Home Tab. The font color menu appears.

* Move your cursor over the various font colors.

* Left-click the font color you want to use.

* Then font color will change in the document.

⇒ TO highlight (in yellow) the line that reads "need to get Ims address?"

* Select the Text "need to get Ims address"

* Click^{on} the Text Highlight Color in font group on the Home tab.

* Various colors will appear then select yellow color

* Then the highlight color will change in the document
Ex:- "need to get Ims address"

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

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

MS Word is application software, which is capable of

* creating * editing * saving * printing any type of document

⇒ To click on start button through mouse

⇒ select microsoft office and choose to click ms word.

⇒ then select new blank page, it will open empty word document. then type the above text like ms word is a widely used commercial word processor developed by microsoft.

⇒ select the word processor and click underline on the Home button / font Tab.

⇒ It will applied the underline,

⇒ After type the text "ms word is application software, which is capable of,

creating ↵ Enter

editing ↵ Enter

saving ↵ Enter

print any type of document

⇒ select above text and choose a bullets in paragraph tab. then select bullets. It will applied bullets the above text.

⇒ Go to File tab / Home tab select save option / button then open the save location. Enter / type the file name 'ms_word' and click save option. It will be saved on the name of 'ms_word'.

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

Equation

$$X_2 + Y_5 = 30$$

$$Z_3 + Q_4 = 50$$

$$A_2 + B^3 = X_2 + Y_8$$

Ans:- click the Start button and choose ms office

⇒ select the ms-word

⇒ click on New document

⇒ It will open the Empty document

⇒ Then type $X^2 + Y^5 = 30$ ↓

~~$Z^3 + Q^4 = 50$~~ ↓ $Z^3 + Q^4 = 50$ ↓

~~$A^2 + B^8 = X^2 + Y^8$~~ $A^2 + B^8 = X^2 + Y^8$

⇒ Then select press the Control button and select

2,5,2,2 then click on Subscript on font Tab.

3,4,8,8 then click on Superscript on font Tab.

It will changed the normal ~~equation~~ font to equation mode.

$$X^2 + Y^5 = 30$$

$$Z^3 + Q^4 = 50$$

$$A^2 + B^8 = X^2 + Y^8$$

⇒ Subscript :- To make text appear slightly below, the regular text

⇒ Superscript :- Superscript to format text or numbers to appear slightly above the normal line

⇒ Then goto File menu or Home tab

⇒ select Save option, it will open the file location box save.

⇒ Then type the name equation's, click on save Option.

Ans: Q:- Select the ~~text~~ ms word in the start menu

⇒ select ms word Blank page and type the text below

Select the text you want to convert

Select the Insert Tab

Click on Table command. A dialog box appears.

Click on Convert Text to Table, a new dialog box appears
here set number of columns.

Click on OK finally selected text convert in a table

⇒ Then select Insert ~~table~~.

⇒ Click on table command. A dialog box appears.

⇒ Click on Convert text to table, a new dialog box appears

⇒ here set number of columns.

⇒ Click OK

⇒ Finally selected text convert in a table

Select the text you want to convert	Select the Insert Tab.
Click on Table command. A dialog box appears.	Click on Convert Text to Table, a new dialog box appears.
here set number of columns.	Click on OK finally selected text convert in a table

⇒ Then go to File menu or Home Tab

⇒ Choose Save option / button, opened saved location window then type the name 'text-to-table'

⇒ The document has been saved on typed ~~text~~ name

Q10:- create a file in ms-word to insert a table in the document.

Describe all steps involved in it.

- Ans:-
- ⇒ Click the Start button / Microsoft Home button
 - ⇒ Click on new document, ms word
 - ⇒ The document will be opened with empty ~~space~~ window
 - ⇒ Click on empty window
 - ⇒ Go to insert tab, click on table button
 - ⇒ Place your insertion point in the document where you want to insert table
 - ⇒ Select the Insert tab.
 - ⇒ Click on the table Command
 - ⇒ Drag your mouse over the diagram squares to select the number of columns and rows in the table
 - ⇒ Left-click your mouse, and the table appears in the document
 - ⇒ Enter text into the table.

Q11:- create a following worksheet in ms-excel and save it with name 'book1'.

- Ans:-
- ⇒ Click on start button and choose ms office then click on ms-excel
 - ⇒ open blank work book
 - ⇒ Enter the Roll no. on A1 cell, name B1 cell, marks C1 cell
 - ⇒ Enter Roll no's 1 to 10 as serial A2 to A11 cells
 - ⇒ Enter Name's as cell B2 to B11
 - ⇒ Enter marks as cell C2 to C11
 - ⇒ Then go to File menu / Home tab
 - ⇒ Click on save option then opened location window
 - ⇒ type "book1" as a document/workbook name
 - ⇒ Then click on save

Q12:- Calculate the following things of a range (C2:C11) of data in the worksheet created in question no. 11.

Ans:- $\Rightarrow$ the sum of the marks using Autosum in a range of cells (C2:C11)

$\Rightarrow$ select the cell (C2:C11)

$\Rightarrow$ goto Formula tab / Home tab

$\Rightarrow$ Then click on Autosum button (Σ)

$\Rightarrow$ The Sum of cell C2:C11 is reflected on C12 cell

$\Rightarrow$ The sum of value is 621

$\Rightarrow$ average of the marks in a range of cells (C2:C11)

$\Rightarrow$ select the cell C2:C11

$\Rightarrow$ Type the formula in ~~C~~ C12 cell

$\Rightarrow$ Formula is $=\text{AVERAGE}(C2:C11)$

$\Rightarrow$ Average is shown 62.1 in cell C12

$\Rightarrow$ highest marks in a range of cells (C2:C11)

$\Rightarrow$ Select the cell C2:C11

$\Rightarrow$ Type the formula in C12 cell

$\Rightarrow$ Formula is $=\text{MAX}(C2:C11)$

$\Rightarrow$ Then highest marks will be shown cell C12

$\Rightarrow$ Highest marks is 90

$\Rightarrow$ minimum marks in a range of cells (C2:C11)

$\Rightarrow$ select the cell (C2:C11)

$\Rightarrow$ Type the formula in C12 cell

$\Rightarrow$ Formula is $=\text{MIN}(C2:C11)$

$\Rightarrow$ Then ~~low~~ minimum marks will be shown cell C12

$\Rightarrow$ minimum marks is 40

Q13:-(a) Describe various steps involved in the following

→ TO modify column width of a worksheet

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

→ Click Home Tab

→ Click Format on cell formatting tool bar

→ Click Column width in the Cell Size group

⇒ Enter the desired width in the dialog box

⇒ Click OK to apply the change.

(or)

→ ~~Click to go~~ Select the column or columns

→ click the mouse button and drag left/right then the column width changed.

→ TO modify the row height of a worksheet

⇒ Select the row you want to change

→ Click the Home Tab

→ Click Format on cell formatting tool bar

→ Click row height in the Cell Size group

→ Enter the desired height in the dialog box

⇒ Click on OK to apply the change

(or)

→ Select the row/rows.

⇒ Click the mouse button and drag up/down then the row height will be changed.

⇒ TO delete rows and columns of a worksheet

⇒ Select the rows or columns you want to delete it.

⇒ Click the Home Tab

→ Click the cell tab and choose Delete Cells or Delete rows or Delete sheet columns

(or)

→ Select row/columns and press $\text{Control} + -/+$ then delete it.

Q12(a) Describe various steps involved in the following

Q13(b) Describe following terms in the worksheet

→ Absolute reference and relative reference in formula.

Ans:- There may be times when you do not want cell reference to change when filling cells. Unlike relative references, absolute references do not change when copied or filled. You can use an absolute reference to keep a row and/or column constant. An absolute reference is designated in a formula by the addition of dollar sign (\$) before the column and row. Ex:- \$A\$2, A\$2, \$A2

By default, all cell references are relative references.

When copied across multiple cells, they change based on the relative position of rows and columns. For example, If you copy the formula = A1+B1 from row 1 to row 2, the formula will become = A2+B2. Relative references are especially convenient whenever you need to repeat the same calculation across multiple rows or columns.

⇒ Cell Address

A cell reference, or cell address, is an alphanumeric value used to identify a specific cell in a spreadsheet. Each cell reference contains one or more letters followed by a number. The letter (or) letters identify the column and the number represents the row.

Example:- A1, B1, B2, C1, C2

A, B, C are columns

1, 2, 3, 4 are rows

Q14(a):- what tools are available to customize our power point presentation?

Ans:- powerpoint offers a variety of tools and features to customize presentations and make them more engaging and visually appealing. Here are some of the key tools available.

Themes:- powerpoint provides pre-designed themes with coordinated colors, fonts, and effects. You can choose from built-in themes or create your own.

Templates:- powerpoint offers a wide range of templates for different types of presentations, such as business, education, or creative projects. Templates provide a starting point with pre-designed layouts for slides.

Slide Layouts:- you can choose from various slide layouts, such as title slides, content slides, picture slides, etc. Each layout is optimized for different types of content.

Formatting Tools:- powerpoint provides extensive formatting options for text, shapes, images, and other objects. You can customize fonts, colors, sizes, alignments, and more.

Animations and Transitions:- powerpoint allows you to add animations and transitions to your slides to create visual effects and make your presentation more dynamic.

Charts and Graphs: powerpoint includes tools for creating and customizing charts and graphs to visualize data. You can choose from different chart types and customize their appearance.

Smart Art: It is a feature that allows you to create visual representations of information, such as hierarchical diagrams, process flows, or cycle diagrams.

Media Insertion: you can insert various types of media into your presentation, including images, video, audio clips, and online content. powerpoint also supports embedding content from other Microsoft Office apps like Excel or Word.

Master Slides:- It is allow you to define the overall layout and formatting for your presentation. Changes made to the master slides apply to all slides in the presentation, ensuring consistency.

Slide show options:- power point offers various options for customizing the presentation mode, such as slide transitions, timings, narration and presenter tools.

Add-ins:- There are numerous 3rd party add-ins available for power-point that extend its functionality, allowing you to add new features, effects, and capabilities to your presentations.

Q14 (b) write the steps for following action for creation of power point presentation

- Ans:-
- ⇒ open a blank presentation
 - ⇒ click to open powerpoint presentation on microsoft office
 - ⇒ Start a new presentation to click on Blank presentation or New Blank presentation
 - ⇒ Then choose the design (or) Blank presentation slide
 - ⇒ Then opened blank presentation
 - ⇒ Save the presentation as Lab1.pptx
 - ⇒ followed by above steps
 - ⇒ Enter the data or type text or create slides
 - ⇒ Then goto Home Tab/file menu
 - ⇒ click on save option then open the file save path
 - ⇒ Enter the name of file Lab1 and click on save
 - ⇒ The file is saved on Lab1.pptx
 - ⇒ Add a title to the first slide: the name of your college
 - ⇒ click on blank presentation
 - ⇒ Then opened the blank slide with click to add title box and click to add sub title
 - ⇒ Then type/enter the title name as the name of your college after double click the title box
 - ⇒ Type your first name and last name in subtitle section
 - ⇒ followed the above steps
 - ⇒ Type /entered my first name Ramakrishna and last name

Sangeeta after double click the subtitle box.

- Add a new slide which has a Title and content.
- Open the Blank presentation
- ~~Click~~ Go to Home Tab / File menu then choose new slide
- click on Title and content slide
- Then opened as same
- (or)
- ⇒ use shortcut key is Control + M

Q15: write steps for creation of a set of powerpoint slides that demonstrates your skill to use the tools of powerpoint. It should include the following things.

- Title slide & bullet list
 - Open powerpoint and start a new presentation
 - click on the 1st slide in the slide thumbnail pane on the left side of the powerpoint window.
 - Enter the title of your presentation ~~at the~~ in the title placeholder
 - Enter your name or other relevant details in the subtitle placeholder
 - Customizing the title slide by changing background color, adding a background image, or applying other formatting as desired.
 - Click on the bullet list placeholder below the title to start entering your bullet points.
 - Continue adding new slides to your presentation to demonstrate various powerpoint tools and features.
 - Apply animations and transitions, use tools 'Smart Art', charts, and shapes
 - Experiment with different slide layouts, text, image, chart, diagrams etc...
- ⇒ Inserting Excel sheet
 - ⇒ Goto Insert tab and click on Table and it will show Excel Spreadsheet then click on it.

- ⇒ The Excel sheet has been inserted
- ⇒ go to open the ms excel file and copy the data and paste into the powerpoint excel sheet.
- ⇒ Clip art and Text
 - ⇒ Go to Insert tab and click on picture's
 - ⇒ choose This device / online pictures
 - ⇒ Then ~~insert~~ choose online pictures, it is showing more than cliparts from Alphabet A to Y
 - ⇒ Select one clip art then inserted in slide.
 - ⇒ Go to Insert tab and choose Text box and click it-
 - ⇒ insert the Text box you want place it
 - ⇒ And enter the text

⇒ Slideshow effects

- ⇒ open powerpoint and start a new presentation
 - ⇒ Create Title slide
 - ⇒ Add Additional slides
 - ⇒ Select a slide to Apply effects.
 - ⇒ Navigate to the Transitions Tab
 - ⇒ choose a Transition effect.
 - ⇒ Customize the Transition
 - ⇒ Apply Transition to multiple slides (if you want)
 - ⇒ preview the presentation
 - ⇒ Review and Finalize .
- Q16:- What is the difference between machine language and High Level Language?

Ans- machine Language and high-level language are two distinct of computer programming languages, each with its own characteristics and purposes.

- ⇒ machine language :- It is the lowest-level programming language understood by computers. It consists of binary code.

which is a series of 0s and 1s that directly represent the instructions executed by the computer's central processing unit (CPU).

- ⇒ Each instruction in machine language corresponds to a specific operation that the CPU can perform, such as arithmetic calculations, data movement, or control flow.
- ⇒ Machine language is specific to the computer architecture for which it is designed. Therefore, programs written in machine language are not portable across different types of computers.
- ⇒ Writing programs directly in machine language is extremely tedious and error-prone, as it requires detailed knowledge of the computer's hardware and instructions set.

High-Level Language:- High-level Languages are designed to be closer to human language and are easier for programmers to understand and write.

- ⇒ They use English-like syntax and include features such as variables, control structures (like loops and conditions), functions, and data types.
- ⇒ Examples of high-level Languages include Python, Java, C++, and JavaScript.
- ⇒ Programs written in high-level languages are independent of the underlying computer architecture, making them portable across different platforms and hardware.
- ⇒ High-level languages need to be translated into machine language before they can be executed by a computer. This translation process is typically performed by a compiler or an interpreter.

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

Ans:- In C programming, data types are used to define the type of data that a variable can store. C provides several built-in data types to accommodate different types of values and variables. Here is an overview of the main data type in C.

Basic Data Types:- int - integer, float, double, char

Derived data types:- Array, pointer

User-Defined Data Types:- Struct, Union

Enumerated Data Type:- Enum

Void Data Type :- Void

Understanding and appropriately selecting data types in C is crucial for efficient memory usage and ensuring that variables can store the required range of values. Additionally, proper data type usage enhances code readability and maintainability.

Q18:- Find ~~the~~ the output of the following expressions

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

⇒ First, we perform the division: $20/5 = 4$

⇒ Then, we perform the multiplication: $4 * 2 = 8$

⇒ Next, we add 30: $8 + 30 = 38$

⇒ Finally, we subtract 5: $38 - 5 = 33$.

⇒ So, $X = 33$

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

⇒ First, we perform the multiplication: $40 * 2 = 80$.

⇒ Then, we perform the division: $80 / 10 = 8$

⇒ Next, we subtract 2: $8 - 2 = 6$.

⇒ Finally, we add 10: $6 + 10 = 16$.

⇒ So, $Z = 16$.

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

⇒ First, we perform the division: $40/10 = 4$.

⇒ Then, we add 4 to 6: $4 + 6 = 10$.

⇒ Next, we subtract 10 from 30: $30 - 10 = 20$.

⇒ Finally, we add 10: $20 + 10 = 30$.

⇒ So, $Y = 30$.

The outputs of the expressions are:

a) $X = 33$

b) $Y = 30$

c) $Z = 16$

Q19:- Describe the syntax of the following statements

Ans: a) If-else statement

```
if (condition) {  
    // code to execute if condition is true  
} else {  
    // code to execute if condition is false  
}
```

b) For loop:

```
for (initialization; condition; update) {  
    // code to execute in each iteration  
}
```

c) While loop:

```
while (condition) {  
    // code to execute in each iteration  
}
```

d) Do-while loop:

```
do {  
    // code to execute in each iteration  
} while (condition);
```

Q20:- Find the output of the following program segments

a) #include <stdio.h>

```
int main()
```

```
{
```

```
    int i;
```

```
    for (i=1; i<2; i++)
```

```
    {
```

```
        printf("Ims Ghaziabad\n");
```

```
    }
```

```
}
```

Output :- Ims Ghaziabad

b) #include <stdio.h>

```
int main()
{
    int i=1;
    while (i<=2)
    {
        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);
}
```

Output:- Largest number is 100