

CCA-101: Fundamentals of IT & Programming

ASSIGNMENT

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SIGNATURE -

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

Ans $\Rightarrow$ A computer has four main components:-

(i) Primary memory

(ii) CPU

(iii) Input Unit

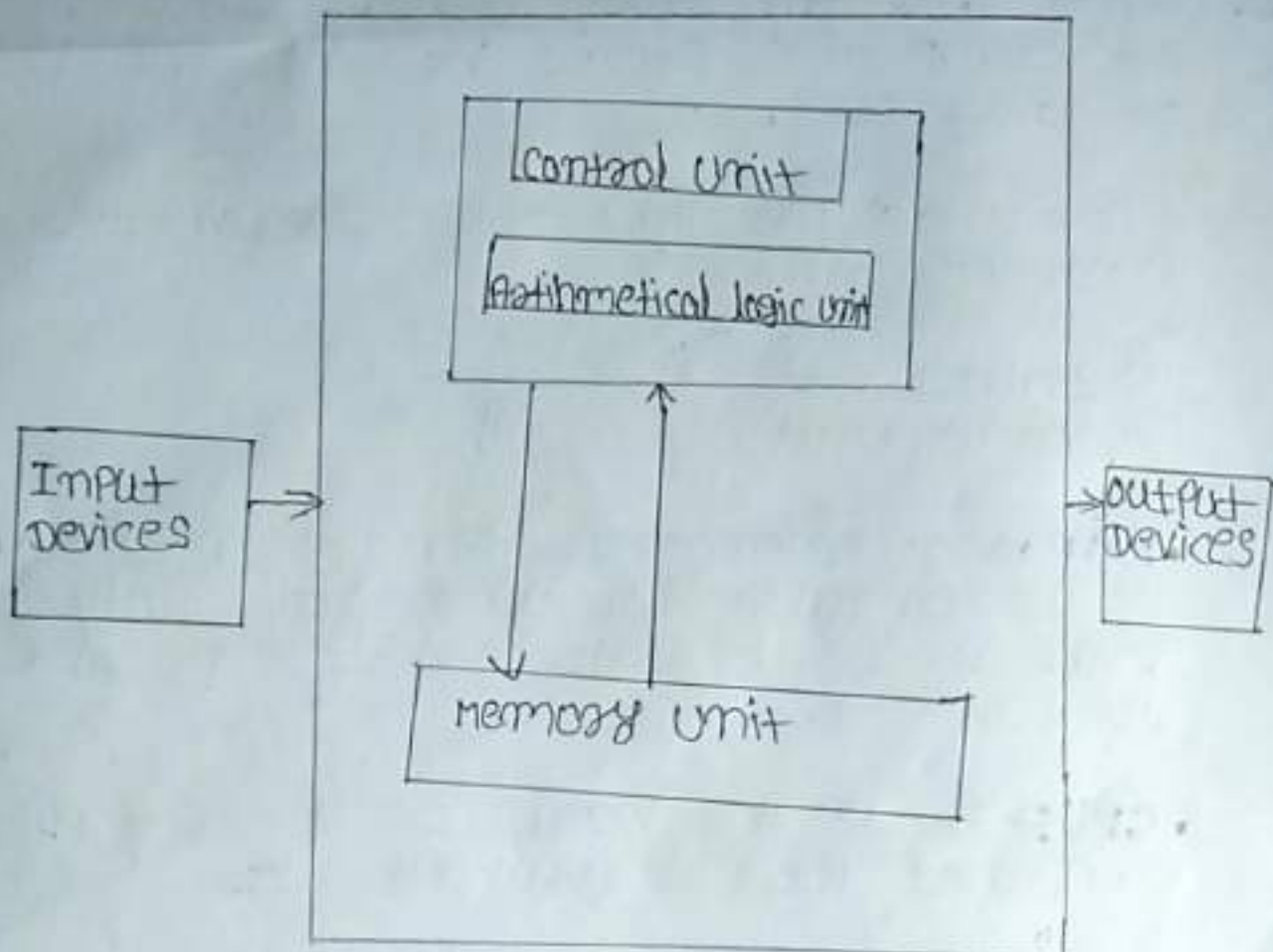
(iv) output Unit

Primary memory:- Primary memory is a computer storage that only maintains its data while the device is powered.

CPU:- It is the brain of the computer. It cannot process without it.

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

Output Devices:- The devices to output information, such as a printer, monitor and speaker.



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

Ans ⇒ Computer based on size and capacity, computers are classified as follows:

- (i) Super computers
- (ii) mainframe computers
- (iii) mini computers
- (iv) Micro computers.

. Super computers: Super computers are the most powerful and physically the largest by size.

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

. Mini computers: Minicomputers are much smaller than mainframes. These computers are also less expensive.

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

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

Ans. ⇒ Generation in computer terminology is a change in technology a computer is being used. Initially, the generation term was used to distinguish between varying hardware technologies. Computer generations are five terms defined:-

1) First Generation: vacuum Tubes (1940-1956)

The first computer system used 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 language, the lowest-level programming to perform operations. They could only solve one problem at a time. It would take to set up a new input based punched cards was displayed first computers as the cause of malfunctions.

(ii) 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 than their first generation predecessors. Second generation computers still relied on punched cards input/output for output. Second generation computer moved from binary machine language to symbolic or assembly language.

(iii) Third Generation : Integrated (1964-1971) Circuits

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.

(iv) 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 could now fit in the palm of the hand. In 1981, IBM introduced its first computer for the home user. In 1978, Apple introduced the Macintosh microprocessor. Also moved out to the desktop computers. Fourth generation computers also covered the development of Graphical user Interface (GUIs), Mouse and handheld devices.

Fifth Generation: Artificial Intelligence (Present and Beyond):

Fifth generation computing devices, based on artificial intelligence, are still in development these are some applications such as voice recognition that are being used today. The use of Parallel Processing and superconductors is helping to make artificial intelligence a reality. Quantum computation and nanotechnology 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.

Q.4. Differentiate between volatile & Non-volatile memories.

Ans $\Rightarrow$ **Volatile memory**:- Volatile memory is a computer storage that only maintains its data while the device is powered.

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.

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

Ans ⇒ System Software: It is a type of software that is designed to run a computer's hardware and application programs. Software like operating system, compilers, editors and drives etc. come under this category. A computer cannot function without the presence of these. If we think of the computer system as a layered model, the system software is the interface between the hardware and user application.

Application Software It is software creation for a specific purpose, used by and users. It can be called an application or simply an app.

open-source: Software (os) is a type of computer software in which source code is released which the user can use under a license in which the copyright holder grants the 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 technology.

a.b.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 $\Rightarrow$ opening MS-Word :-

- Click the Start icon.
- Then click to All program.
- Then click MS office and
- Then click MS word.

Now,

Create a file in microsoft word.

- click the microsoft office button / file tab.
- Select New, then new document dialog box appears.
- select Blank document. It will be highlight be default.
- A New Blank document appears in the word-window.
- Now you can create document about yourself.

Document - 1

you know yourself better than anyone else, but waiting about yourself can still be tough 1 when applying for scholarships or to college, essay prompts can feel so general that they leave us stumped.

Now,

To save document using save as command :-

- Click the MS office button / file tab.
- Select Save as - word document.
- Select the location where you want to save the document using the drop-down menu.
- Enter name for the document "yourself".
- Click the Save button.

Q.6.b.) Write steps regarding followings

► To change the Font style

- Select the text you want to modify.
- Click on the font style box on the home tab, the font style drop-down menu appears.
- Then font style will change in the document.

► To change the font size

Using increase Font size and decrease font size commands.

- Select the text you want to modify.
- Click on increase / decrease font size commands in the font group on the Home tab.
- Then font size will change (increase / decrease) in the 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's address".

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

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.

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, and
- Printing and type of document

Ans⇒ opening MS word

- Click the Start icon
- Then point to all program.
- Then click microsoft office and
- Then click microsoft word.

Now,

Create a file in ms word

- click the microsoft office button, file tab.
- Select new, then new document dialog box appears.
- A new blank document dialog word-window.
- Now you can create document 'ms-word'.

Document-1

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 and type of document
- Finally Save document.

Now,

To save document using Save as command.

- click the ms office button / file tab.
- Select save as - word document
- Select the location where you want to save the document using the drop-down menu.
- Enter name for the document 'MS word'.
- 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

$$x_2 + y_5 = 30$$

$$z^3 + a^4 = 50$$

$$A_2 + B^8 = x_2 + y^8$$

Ans $\Rightarrow$ opening MS-word

- click the Start icon.
- Then point to all Program.
- Then click microsoft office and
- Then click ms word.

Now,

create a file in microsoft word.

- click the microsoft office button
- File tab.
- A new blank document in the word-window.
- Now you can create document inserting equations.

Document-1

$$x_2 + y_5 = 30$$

$$z^3 + a^4 = 50$$

$$A_2 + B^8 = x_2 + y^8$$

Finally Save Document.

NOW,

TO Save document Using Save as Command:-

- Click the ms-office button / File tab.
- Select Save as-word document.
- Select the location where you want to save the document using the drop-down menu.
- Enter name for the document 'equations'.
- Click the save button.

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.

select that you want to convert.
select Insert tab.
Click on Table command. A dialog box appears.
Click on Convert Text to Table a new dialog box appears.
Click on 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 select

Ans ⇒ Opening Ms word:-

- Click the start icon.
- Click then point to All program.
- Then click Microsoft office and
- Then click Microsoft word.

Now,

Create a file in Ms word:-

- Click the Microsoft office button/File tab.
- Select New, then new document dialog box appears.
- Select blank document. It will be highlighted by default.
- A New blank document appears in the word-window.
- Now you can create document by inserting text.
- Finally Save document.

Now,

To convert existing text to 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.

Now, To save workbook using Save As command:-

- Click the Ms office button/File tab.
- Select Save as
- Select the location where you want to save.
- Enter a name for the workbook.
- Click the Save button.

Q.10. Create a file in Ms-Word to insert a table in the document. Describe all steps involved in it.

Ans Opening MS Word:-

- Click the Start icon.
- Click the point to All program.
- Then click MC office and
- Then click Microsoft Word.

Now,

Create a file in MS Word:-

- Click the Microsoft office button / File tab.
- Select New, then new document dialog box appears.
- Select Blank document. It will be highlighted by default.
- A New blank document appears in Word-window.
- Now you can create document by inserting text.
- Finally Save documents.

Now,

To Insert a Table:-

- ~~Place~~ Place your inserting point in the document. Where you want to insert table.
- Select the insert tab.
- Click the table command.
- Drag your mouse over the diagram to select the number of column and rows in the table.

- Left click your mouse, and the table appears in the document.
- Enter text into the table.

Q.11. Create a following Worksheet in MS-excel and Save it with name 'book1'

Ans Starting a Excel:-

- Click on the Start button on the taskbar at the bottom left corner of screen.
- Highlight the All program item. The program menu will open.
- Select Microsoft office from the list of Programs.
- Click on MS EXCEL.

Now,

To create a New blank Worksheet:-

- Left Click the Microsoft office button or File Tab.
- Select New, The new worksheet dialog box appears, and blank Worksheet is highlighted by default.
- Click on this
- A New blank Worksheet appears in the window.

Now,

To Save Worksheet using Save as command:-

- Click the Microsoft Office button or File tab.
- Select Save As.
- Select the location where you want to save.
- Enter a name for the worksheet.
- Click the Save button.

Book 1			
A		B	C
1	Roll no	Name	Marks
2	1	n1	60
3	2	n2	70
4	3	n3	80
5	4	n4	90
6	5	n5	40
7	6	n6	50
8	7	n7	77
9	8	n8	44
10	9	n9	88
11	10	n10	55
12			
13			
14			
15			
◀ ▶ ▢		student / sheet 2	sheet 3 / sheet

Q.12. Calculate the following things of a range (C2:C11) of data in the worksheet created in question no 10.

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

$$= \text{SUM} (\text{cell range})$$

$$= \text{SUM} (C2:C11) \leftarrow$$

$$= 654$$

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

$$= \text{Average} (\text{cell range})$$

$$= \text{Average} (C2:C11) \leftarrow$$

$$= 65.4$$

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

$$= \text{Max} (\text{cell range})$$

$$= \text{Max} (C2:C11) \leftarrow$$

$$= 90$$

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

$$= \text{Min} (\text{cell range})$$

$$= \text{Min} (C2:C11) \leftarrow$$

$$= 40$$

Q.13.4) Describe various steps involved in the following.

► To modify column width of a worksheet

- Ans ⇒
- 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.

► 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 the cursor upward to increase the row height.

► To delete rows and columns of a worksheet:-

- Select the rows and or column you want to delete.

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

► Absolute reference and relative reference in formula.

- Ans ⇒
- Relative reference :- cell reference in formula automatically adjust to new locations when the formula is pasted into different cells. This is called a relative reference.
 - Sometimes when you copy and paste a formula, you don't want one or more cell references to change.
 - An absolute reference solves this problem. absolute reference :- cell reference 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.
 - An absolute reference is designated in the formula by the addition of a dollar sign (\$).

► Cell address :-

- Each rectangle in the worksheet is called a cell. Each cell's address, based cell is C₃ become head is 3.

Q. 14.a) What tools are available to customize our Power Point Presentation?

Ans Many tools are available to our Power Point Presentation :-

1. Home :

The home tab holds the cut and Paste features, Font and Paragraph options and what you need to add and organize slides.

2. Insert :

Click insert to add something to a slide, This includes pictures, shapes, charts, link, text boxes, video and more.

3. Design :

On the design tab, you can add a theme or color scheme, or format the slide background.

4. Transitions :

Set up how your slides change from one to the next on the transitions tab. Find a gallery of the possible transitions in the task pane. To apply a transition to this slide group click more at the bottom of the gallery to see a list of them.

5. Animations :- Use the Animations tab to choreograph the movement of things on your Slides. Note that you can see many possible animations in the gallery in the animations group, and see more of them by clicking more.
6. Slide Show :- on the Slide Show tab, set up the way that you want to show your presentation to others.
7. Review :- The Review tab lets you add common run cell-check, or compare one presentation with another (such as an earlier version).
8. View :- Views allows you to look at your presentations in different ways, depending where you are in the Creation or delivery process.
9. File :- At one end of the ribbon is the file tab, which you use the behind the scenes stuff you do with a file, such as opening, saving, sharing, exporting, printing and managing your presentation.
Click the file tab to open a new view called the backstage.

Click from the list on the Slide to do what you want to do: for example, click Paint to find the options and setting for painting your Presentation. Click Back to return to the Presentation that you were working on.

10. Tools tabs :- when you click same parts you slides, such as Pictures, Shapes, SmartArt or text boxes, you might see a colorful new tab appears.

In the example above, the Drawing Tools tab appears when you click a Shape or text box. When you click a Picture, the Picture tools tab appears, other such as tools. These tabs disappear or change when you click something else in your Presentation.

Q.14.b) write the steps for the following action for creation of Powerpoint Presentation

► **Open a Blank Presentation:-**

- Ans ⇒
- Click on Start.
 - Select ms office Powerpoint option.
 - Double click on it.
 - Again,
 - Select the file tab to go to Backstage view.
 - Select New, on the left side of the window.
 - Then, Click Blank Presentation.

► **Save the Presentation as Lab1. Pptx**

- Click on the file tab to launch the Backstage view and select Save.
- In the Save as dialog, type in the file name and click "Save".
- The default file format is 'Pptx'. If you want to save the file type from the "Save as type" dropdown list.

► Add a title to the first slide: the name of your collage:-

- select the file tab to go to Backstage view:
- select new on the left side of the window.
- Then, click blank presentation, additional information on how slide can be used.
- Click the title bar.
- Type the name of my Collage "KSRI Collage Sasaindan."

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

- Select the file tab to go to backstage.
- select new, on the left of the window.
- Additional information on how the template can be used.
- Click on blank presentation.
- Then, open the title section.
- Type the first name in subtitle "Saishti" and type the last name in the subtitle section "Kumari".

► Add a New Slide which has a Title and Content

- To insert a new slide that contains a "Title and Content" slide layout, click the "Home tab" in the ribbon.
- Then, click the "New Slide" button in the Slides button group.
- To insert a new slide and choose the slide layout, click the drop-down part of this button.
- Doing this then shows a drop-down menu that displays the different slide layouts you can apply.
- Then click on of the slide layouts in the drop-down menu to create a new slide with that layout.

Q.15.) Write steps for creation of a set of powerpoint slides that demonstrates your skill to use the tal's powerpoint. it should include the following things

Title slide & bullet list:-

- Ans.)
- Start Microsoft powerpoint.
 - open orbitatory existing Powerpoint presentation.
 - Click the new slide button on the formatting toolbar. The slide layout task pane appears as shown in the above figure. The slide layout task pane let you select from numerous layouts the new slide. we want to add a bulleted list slide.
 - Click the bulleted list layout. as shown in the above figure. A new slide appears after the current slide in your presentation as shown in the figure. Notice there are two placeholders on this slide: one for the bulleted list. To add text to a placeholder, all you have to do is click and type.

- Click the title Placeholder (where it says: "Click to add title"). An insertion point appears in the Placeholder, indicating that you can add text to the Placeholder.
- Type some text. Now let's add some text to the bulleted list Placeholder.
- Click the bulleted list Placeholder and type something and Press 2 Enter's. Powerpoint adds another bullet to the list when you Press the Enter key.
- Repeat the following three times: type some text and Press Enter.
- Click the Slide layout frames close button. If you are not playing to use the slide layout frame again for a while, it is usually a good idea to close it so you can have extra viewing space for your presentation.

► Inserting Excel sheet:-

- In Powerpoint, on the insert tab, click on tab object.
- In the insert object dialog box, select create from file.

- Click on tab Browse, and in the Browse box, Find the excel workbook with the data you want to insert and link to.
- Before you close the insert object box, select link, and click OK.

► clip art and text:-

- Click in the slide where you want insert a clip art file.
- on the insert tab, in the images group. Click on line Pictures.
(In Powerpoint 2007/2010. this option is called Clip art.)
- In the insert Pictures dialog box (Clip Art task pane in Powerpoint 2007/2010). enter your search terms in the Bing. Com field and press.
- your search results load in the task pane.
- Locate the clip art you want to insert in your slide and double-click on or click the item and select insert.

• Slide Show effects:-

- Notice that there is a separate area to the left on the screen where your first slide is located.
- The first way to add a slide is to right-click the area under where your first slide is located and select 'New Slide'. A new slide will appear.

Part-2

Q.16. what is the difference between machine language and high level language?

Ans ⇒

Machine language	High-level Language
(i) A computer programming language consisting of binary instructions which a computer can respond to directly.	(i) A high-level language is a programming language that enables development of a in a much more user-friendly programming context.
(ii) Sometimes, it is referred to as machine code or object code. machine language is a collection of binary digits or bits that that computer reads.	(ii) High-level language are grouped in two categories based on execution model Compiled or interpreted languages.
(iii) A computer cannot directly understand the programming languages used to create must.	(iii) This language is a programming language with strong abstraction about the details of computer.

Document-1

you know yourself better than anyone else, but writing about yourself can still be laugh 1 when applying for scholarships are to college, essay prompts can feel so general that they leave us stumped.

Q.17. Discuss about different data types of C programming language?

Ans $\Rightarrow$ Data type of C: 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's briefly describe that one by one: following are the examples of some very common data types used in C:

- char: The most basic data type in C. It stores a single character and requires a single byte of memory in almost all compilers.
- int: As the name suggests, an int variable is used to store an integer.
- float: It is used to store decimal numbers with floating point value.
- 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.

Type	Keyboard	value range which can be repres-ented by this data type
Character Number	Char int	-128 to 127 or 0 to 255 -32,768 to 32,767 or 2,147,483,648, 147,483,647
Small no Long no	Short Long	-32,768, 32,767 -2,147,483,648 to 2,147,483,647
decimal no	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.

Q. 18.) Find the output of the following expressions a) $x = 20 / 5 * 2 + 30 - 5$

Formula becomes

$$4 * 2 + 30 - 5$$

→ The operation is division first: $20 / 5 = 4$

→ Because the multiplication comes before the addition: $4 * 2 = 8$

Formula becomes

$$8 + 30 - 5$$

→ Next the addition takes place before the subtraction: $8 + 30 = 38$

Formula becomes

$$38 - 5$$

→ Finally $38 - 5 = 33$

The final answer is 33

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

→ Perform the division operations in Parentheses first: $40 / 10 = 4$

Formula becomes

$$30 - (4 + 6) = 10$$

→ next perform the addition in parentheses
First: $4 + 6 = 10$

Formula becomes

$$30 - 10 + 20$$

→ next the addition takes place before the subtraction:
 $30 + 10 = 40$

Formula becomes

$$40 - 10$$

→ Finally $40 - 10 = 30$

The final answer is 30

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

→ The operation is division first: $40 * 2 / 10$
 $= 8 / 10 = 8$

Formula becomes

$$8 - 2 + 10$$

→ Next the addition take place before the subtraction:
 $8 + 10 = 18$

Formula becomes

$$18 - 2$$

→ Finally $18 - 2 = 16$

The final answer is 16

Q.19) Describe the syntax of the following statements
a) if-else statement:-

Ans) If statement can be followed by an optional else block of statements, which executed when the boolean expression is false.

```
if (expression)
{
    true block of statements;
}
else
{
    else block of statements;
}
```

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 statements;
}
```

in the above syntax:

expression 1 - initializes variables;

expression 2 - conditional expression, as long as this condition is true, loop will keep executing.

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**:- Basic syntax of do-while loop is as follows:

```
do
```

```
{
```

```
    single statement
```

OR

```
    block of statements
```

```
} while (condition);
```

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

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

a)	b)	c)
<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; while (i<2) { printf("IMS Ghaziabad\n"); i=i+1; } }</pre>	<pre>#include <stdio.h> void main() { int a=10, b=100; if (a>b) printf("Largest no. is %d\n", a); else printf("Largest no. is %d\n", b); }</pre>

Ans:-

a)	b)	c)
<pre>#include <stdio.h> int main() { int i; for (i=1; i<2; i++) { printf("IMS Ghaziabad\n"); } }</pre> Output IMS Ghaziabad	<pre>#include <stdio.h> int main() { int i=1; while (i<2) { printf("IMS Ghaziabad\n"); i=i+1; } }</pre> Output IMS Ghaziabad IMS Ghaziabad	<pre>#include <stdio.h> void main() { int a=10, b=100; if (a>b) printf("Largest no. is %d\n", a); else printf("Largest no. is %d\n", b); }</pre> Output Largest no. is 100