CCA – 101: Fundamentals Of IT & Programming

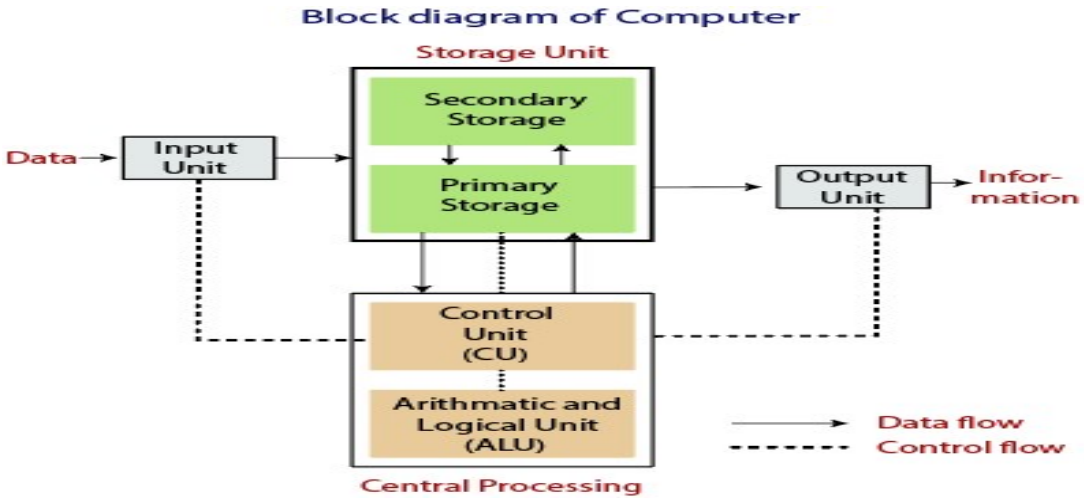
Question.1:-What are the four fundamental parts of computer? Explain it with the help of diagram.

Answer:- A computer has three main components:Input units,The Central Processing Unit or CPUand output units.

Input Unit-The device to input information such as a keyboard and mouse etc.

Central Processing Unit-The computer system is nothing without the CPU so, it is also known as the brain of computer. The CPU contains two parts: The ALU and Control Unit.

Output Units-The output devices give us the desired result according to our input, such as printer, monitor, etc.



Question.2:-Discuss about the classification of computers based on size and capacity.

Answer:- Based on size and capacity the computers are divided into the following-

Super computer-The super computer is fastest, most expensive, big in size. It is used to forecast the weather and global climates, for researches etc. Ex. ANURAG, CRAY XMP/14 etc.

Mainframe Computer-It is large sized computer that covers about1000 sq feet. It is general purpose computer that process large amount of data with very high speed. Ex. IBM S/390,IBM S/700.

Minicomputer- Minicomputers are medium sized computer. So, these are popular as middle ranged computer. Ex. PDP-11, VAX etc.

Microcomputer- These support many higher level application cost and easy in operation. Ex. IBM, apple Mac etc.

Question.3:-What is the meaning of computer generation? How many computer generations are defined? what technologies were/ are used?

Answer :- 1st Generation(1946-1959)- The computer of first generation used vacuum tubes as the basic components for CPU. Ex. ENIAC, EDVAC.

2nd Generation (1959-1965)- In this generation, transistors were used as the basic components. Ex. FORTON, COBOL.

3rd Generation (1965-1971)- The computer of third generation used integrated circuits (ICs) in place of transistors. Ex. FORTRAN-II TO IV, BASIC.

4TH Generation (1971-1980)- Computers of fourth generation used very large scale integrated(VLSI) circuits. Ex. DEC 10, STAR 1000.

5TH Generation (1980-onwards)- In fifth generation, VLSI technology become ULSI(Ultra Large Scale Integration) technology. Ex. Desktop, Laptop, Ultrabook.

Question.4:-Differentiate between volatile & non-volatile memories.

Answer :- 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. Contents of volatile memory is stored temporarily. Contents of non – volatile memory is stored permanently.

Question.5:-Distinguish among system software, application software and opensource software on the basis of their features.

Answer : System Software :- System Software is a set of programs that control and manage the operations of computer hardware. It also helps application programs to execute correctly. Ex. Operating System, Programming language, Communication Software etc.

Application Software :- Application Software acts as a mediator between the end-user and System Software. Ex. Word-processing, Spreadsheet, Database etc.

Opensource Software(OSS):- Open-source software is any computer software that's distributed with its source code available for modification. That means it usually includes a license for programmers to change to the software in any way they choose. Ex. Linux OS, Android by Google, Open office, Firefox etc.

Question.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.

Answer:- Step 1- Open MS-word
2-write **"yourself"** in the word page
3- On the **Home tab**, right-click the **Normal** style, and choose **Modify**
4- select Format and then choose Paragraph
5- choose **New document based on this template**
6- then select **Ok**.
7-ctrl+S to save the document.

Question.6:-b) Write steps regarding followings

- To change the font style

Answer:- Steps 1- **Home** Tab 2- Go to **font** Group 3- Then select **font** / shortcut is **ctrl+shift+F.**

- To change the font size

Answer:- Steps 1- Click to the **Home** Tab 2- Go to **Font** Group 3- And select **font size** / Press **ctrl+Shift+P**.

- To change the font color

Answer:- Steps 1- Click to the **Home** Tab 2- Go to **Font** Group 3- And select **font color** option.

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

Answer:- Steps 1- write " **need to get IMS's address**" and select 2- Click to the **Home** Tab 3- Go to **Font** Group 4- And select **text highlight color** option. 5. Then select **yellow** color.

Question.7:-Create a file in MS – word for the following documents 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 any type of document**

Answer :-Step 1- Open MS-word from start menu

2- write "MS Word" in the word page, select it and Press **ctrl +B** to bold.

3-The next line wite **"MS Word is a widely used commercial word processor developed"** by Microsoft. In this line select **"MS Word"** and go to the font section**(Home Tab)** then select font color **(red),** and select **"word processor**" then press **ctrl +U** for underline.

4- write **"MS word is application software, which is capable of"** in a new line then select bullets from the paragraph section **(Home Tab)** press enter.

5- write**"creating",** go for font color**(Home Tab)** and then select light blue.

write **"editing".**

Write "**saving" color (light red)**, **"and"** select **Strikethrough** option from font section **(Home Tab)**.

Write **"printing any type of document"** then select **ctrl+ B**.

Question.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

$X_2 + Y_5 = 30$

$Z^3 + Q^4 = 50$

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

Answer :- Step 1- Open **MS Word** from the start menu

2- write "**Equations**" ,select it and press **ctrt+U** for underline

3- Write " $\mathbf{X_2 + Y_5 = 30}$" with the help of **subscript** (Home Tab)

4- In the next "$Z^3 + Q^4 = \mathbf{50}$" by the help of **superscript** (Home Tab)

5- write "$\mathbf{A_2 + B^8 = X_2 + Y^{8}}$" with the help of sub and **superscript** (Home Tab)

6- Press **ctrl+S** to save and name the file '**Equation'**. Then again click **save**.

Question.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'. Describle all steps involved in it.

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

⇩

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

Answer :- Steps 1- Open **MS word**

2- **Select the text** you want to convert into table.

3- Go to the **Insert** Tab, click on the **Tables** Option.

4- Then click **convert text to table**
5- Here set number of **columns** and **Separate text** at (Paragraph)
6- Then click **Ok** to convert into table
7- Press **Ctrl +S** , name the file '**text_to_table'** and click on **Save** option.

Question.10:- Create a file in MS-Word to insert a table in the document. Describe all steps involved in it.

Answer : Step 1- Open **MS word**
2- Click on **Insert** Tab
3- Select **table** Option, a dialog box appears.

4- Now go the **Insert** table option 5- Here **set number of columns and rows.**
6- Then click **OK** button to insert table.

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

Roll No	Name	Marks
1	n1	60
2	n2	70
3	n3	80
4	n4	90
5	n5	40
6	n6	50
7	n7	77
8	n8	44
9	n9	88
10	n10	55

Answer :- Step 1- Open **MS excel**
2- write "**Roll No**" in '**A1**' , "**Name**" in '**B1**' and "**Marks**" in '**C1**' cell.
3- The '**Roll No'** column contains no.**1 to 10**, '**Name'** is **n1 to n10** and '**Marks**' are Respectively **60,70,80,90,40,50,77,44,88 and 55**.
4- Press **Ctrl +S**, name the file '**book1**' and click **Save** option to save sheet.

Solution.12:-

- The sum of the marks using(table Q.11) Auto Sum in a range of cell(C2:C11) is **=sum(C2:C11)=654**
- Average of the marks in a range of cells(C2:C11) is **=AVRAGE(C2:C11)=65.4**
- Highest marks in a range of cells (C2:C11) is **=MAX(C2:C11)=90**
- Minimum marks in a range of cell(C2:C11) is **=MIN(C2:C11)=40**

Question.13:-a) Describe various steps involved in the following
Solution :

- To modify column width of a worksheet
  Steps :1- select the **column** 2- click **Format**, in the **cells** group(Home Tab) 3- Under **cell size**, click **column width**. 4- In the **column width** box, type value which you want. 5 – Then click **Ok**.
- To modify the row height of a worksheet.
  Steps :1- select the **row** 2- click **Format**, in the **cells** group(Home Tab) 3- Under **cell size**, click **row height**. 4- In the **row height** box, type value which you want. 5 – Then click **Ok**.
- To delete rows and columns of a worksheet
  Steps :1- select the **rows or columns** 2- click **Delete**, in the **cells** group(Home Tab) 3- Under Delete, click **Delete sheet rows or Delete sheet columns** options.

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

- Absolute reference and relative reference in formula

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

- Cell address

Solution:- It is an alphanumeric value used to identify a specific cell in a spreadsheet.

Question.14:-a) What tools are available to customize our PowerPoint presentation?

Answer:- There are many for tools are available to customize our presentation.

1. **Choose a theme** from PowerPoint's preloaded themes, found under the Design tab.
2. **Pick a variant** if you like, such as a different color, under the Design tab and next to the available themes.
3. **Customize your slides** by choosing whether you'd like a solid, gradient, picture, texture or pattern fill, or whether you want to hide background graphics altogether.
4. **Get even more creative within fills** by choosing color, transparency and different patterns such as polka dots, diagonal patterns and diamonds

Question.14:-b) Write the steps for the following action for creation of power point presentation.

- Open a Blank Presentation

Answer:- Steps 1- Open **PowerPoint** and click on the **files** tab 2- select **New** option 3- Then click on **Blank Presentation**.

- Save the presentation as Lab1.pptx

Answer:- Steps 1- Open **PowerPoint** and click on the **files** tab 2- Select **Save** option 3- A new dialog box is open, name the file **Lab1** and save as type **power point presentation(pptx.)** 4- Then click **save** option.

- Add a Title to the first slide : the name of your college
- Type first name and last name in the Subtitle section

Answer:- Step 1- - Open **PowerPoint** and click on the **files** tab 2- select **New** option 3- Then click on **Blank Presentation**. 3- In the Title section write "**VVMIC PATI**". 4- **"Prashant Garkoti"** in the subtitle section.

Question.15:- 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
- Inserting Excel Sheet
- Clip art and Text
- Slide show effects

Answer:-

For Title slide & bullet list

- 1-**Home** Tab 2- **slide** 3- **layout** 4- **Title slide** 5- **bullet** (home tab)

For Inserting Excel sheet

- 1-**Insert** Tab 2- **table** 3- **Excel spreadsheet**

Clip art and Text

- **1- Insert** Tab 2- clip art

Slide show effects

- 1- **Animation** Tab 2- Go **Animation** Section.

Question.16 :- What is the difference between Machine Language and High level Languages?

Answer :- The main difference between **high level language** and **machine language** is that, Programmers can easily understand or interpret or compile the high level language in comparison of machine. On the other hand, Machine can easily understand the low level language in comparison of human beings.

Examples of high level languages – C, C++, Java, Python, etc.

Question.17 :- Discuss about different data types of C programming Language.

Answer :- Data types specify how we enter data into our programs and what type of data we enter. C language supports 2 types of data types-

1. Primary data types:
   These are fundamental data types in C namely integer(int), floating point(float), character(char) and void.

2. Derived data types:
   Derived data types are nothing but primary datatypes but a little twisted or grouped together like array, structure, union and pointers.

Question. 18 :- Find the output of the following expressions

a. X=20/5*2+30-5 b. Y=30-(40/10+6)+10 c. 40*2/10-2+10

Solution :-

a. X=33
b. Y=13
c. Z=10.

Question.19 :- Describe the syntax of the following statements

A. If – else statement

Solution. The if – else is statement is an extended version of if. The general form of if – else is as follows:

```
if ( test-expression)
    {
        True block of statements
    }
    else
    {
        False block of statements
    }
    Statements;
```

B. for loop

Solution. A for loop is a more efficient loop structure in 'C' programming. The general structure of for loop syntax is as follows:

```
For (initial value; condition; incrementation or decrementation )
{
 Statement;
}
```

- The initial value of the for loop is preformed only once.
- The condition is a Boolean expression that tests and compares the counter to a fixed value after each iteration, stopping the for loop when false is returned.
- The incrementation/ decrementation increases (or decreases) the counter by a set value.

C. while loop

Solution. A while loop is the most straightforward looping structure. Syntax of while loop in C programming language is as follows:

```
While (condition)
```

```
{
        Statements;
}
```

It is an entry-controlled loop. In while loop, a condition is evaluated before processing a body of the loop. If a condition is true then and only then the body of a loop is executed. Once the condition becomes false, the control goes out of the loop.

D. do-while loop

Solution. A do-while loop in C is similar to the while loop except that the condition is always executed after the body of a loop. It is also called an exit-controlled loop.

Syntax of do-while loop in C programming language is as follows:

```
do {
Statements;
    }while ( expression);
```

Question .20 :- Find the output of the following program segments-

Solution:-

#include<stdio.h>
int main()
{
int i; for (i=1; i<2; i++)
{
printf("IMS Ghazibad\n");
}
}
 	
Output is : IMS Ghazibad
	#include<stdio.h>
	int main()
	{
	int i=1; while (i<=2)
	{
	printf("IMS Ghazibad\n");
	i=i+1
	}
	}
	Output is : IMS Ghazibad
	IMS Ghazibad
		#include<stdio.h>
		void main()
		{
		int a=10, b=100;
		if(a>b)
		printf("Largest number is %d\n",a);
		
		printf(" Largest number is %d\n",b);
		}
		}
		Output is : Largest number is 100.