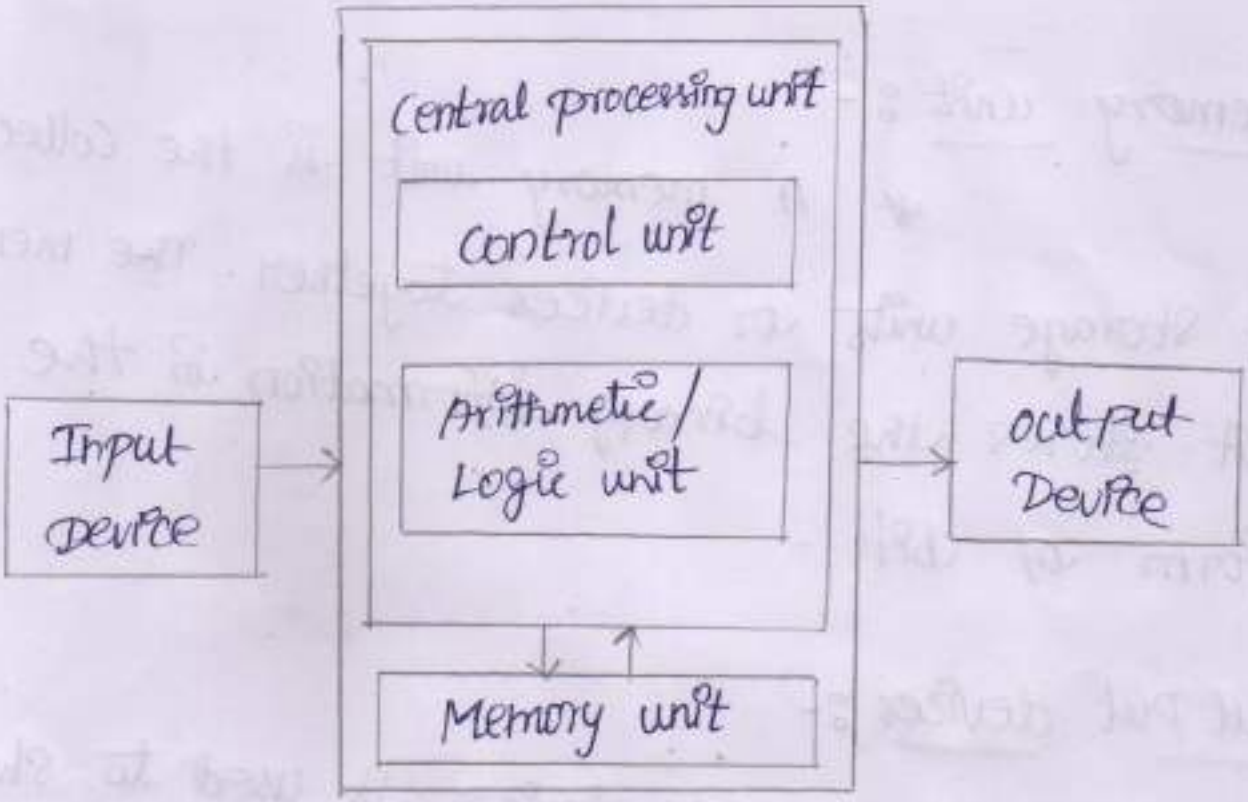
CCA - 101 :

FUNDAMENTALS OF IT & PROGRAMMING

ASSIGNMENT - 1

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



Input devices :-

* Computer systems use many devices for input purpose
* Input devices include the mouse input pen, touch screen and microphone
* Regardless of the type of device used, all are components for interpretation and communication between people & computer systems.

Central processing unit (CPU):-

* It is the brain of the Computer. Computer can not process without it.

Memory unit :-

* A memory unit is the collection of storage units or devices together. The memory unit stores the binary information in the form of bits.

Output devices :-

* output devices is used to show the result of the instructions.

* Example : Monitor, Printer, Headphones, etc.

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

* Super computers
* Mainframe computers
* Mini computers
* Micro 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 supercomputers can perform over one trillion calculations in a second.
* Supercomputers have thousands of processors.

Example : JAGUAR, ROADRUNNER etc.

Mainframe Computers :-

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

* In a mainframe environment, users connect to the mainframe through the many terminals wired to the mainframe.

Example : IBM mainframes z13, IBM system z9 mainframe

Mini computers :-

* Minicomputers are much smaller than mainframes.
* These computers are also less expensive.
* Sometimes refereed to as midrange server or midrange computer.
* They are typically larger, more powerful and more expensive than desktop computers.

Eg : Apple ipod, CDC 160A

Micro Computers :-

* Microcomputers are the most frequently used type of Computer.
* It is also known as personal computer
* A microcomputer is a small computer system designed to be used by one person at a time.

Eg : Desktop computers, laptops.

03) What is the meaning of computer generation? How many computer generations are defined? What tchnologies were / are used?

Five generations of computer

* First generation
* Second generation
* Third generation
* Fourth generation
* Fifth generation

First generation : Vacuum Tubes (1940-1956):

* The first computer systems used vacuum tubes for circuitry and magnetic drums for memory, and were often enormous, taking up entire rooms. These computers were very expensive to operate and in addition to using a great deal of electricity, the first computers generated a lot of heat, which was often the cause of malfunctions. First computer systems used vacuum tubes for circuitry and magnetic drums for memory, the lowest-level programming language

Second generation : Transistors (1956-1963):

* The world would see transistors replace vacuum tubes in the second generation

of Computers. The transistor was invented at Bell Labs in 1947 but did not see widespread use in Computers until the late 1950s.

* 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. Though the transistor still generated a great deal of heat that subjected the computer to damage, it was a vast improvement over the vacuum tube.

Third generation: Integrated circuits (1964-1971)

* The development of the integrated circuit was the hallmark of the third generation of computers. Transistors were miniaturized and placed on silicon chips, called semiconductors, which drastically increased the speed and efficiency of computers.

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. The Intel 4004

4004 chip, developed in 1971, located all the components of the computer.

Fifth generation: Artificial intelligence (Present and Beyond):

* Fifth generation computing devices, based on artificial intelligence, are still in development though there 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.

4) Difference between volatile & non-volatile memories.

S.No	Volatile memories	Non-volatile memories
1.	Volatile memory is a computer storage that only maintains its data while the device is powered.	It is a type of computer memory that has the capability to hold saved data even if the power is turned off.
2.	Eg: Ram (Random access memory) is volatile. When we are working on a document, it is kept in RAM, and if the computer loses power, your work will be lost.	Eg: Read only memory (ROM), Hard disk, floppy disk, etc.

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

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.

Application Software:-

* It is software created for a specific purpose, used by end users, It can be called an application or simply an app.

* Eg: word processor, accounting application, a web browser, an email client, media player etc.

Open source software (OSS)

* 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 o/p source software.

06) 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.

* 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

Opening MS WORD

- click the start icon
- Then point to all programs
- Then click microsoft office and
- Then click microsoft word.

b) i) TO change the font style

* Select the text you want to modify
* click on font style box on the home tab.

The font style drop-down menu appears.

* Move your cursor over the various font styles.
* Left-click the font style you want to use.
* Then font style will change in the document.

ii) TO change the font size

* 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 in document.

07. To create a new document :-

* 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.
* Now you can create document by inserting text.
* Finally Save document.

To Save document using Save as Command:

* Click the microsoft 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 a name for the document.
* Click the Save button.

iii) To change 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.

iv) To highlight colour:-

* Select the text
* click on the text highlight colour in font group on the home tab.
* various colors will appears
* Move your cursor over the various colors.
* click on colour you want to use.
* Then text highlight color will change in the document.

8) Create a file :-

* Create a document in word on the file tab,
* click new
* In the search for online templetes box.
* Enter the type of document you want to create
* Press Enter

Save with file name equation:-

* click on the file menu
* Go to the save or save as button provided
* select the location where you want the file to be saved.
* Provide a name to the file or use the name equation.
* click on the save button.

9) Table to text:-

* Select the rows or table you want to convert to text.

* on the layout tab, in the data section, click Convert to text.

* In the Convert to text box, under separate text with, click the separator character you want to use in place of the column boundaries. Rows will be separated by paragraph marks.

* click OK.

10) MS word to Insert a table.

* Place the cursor where you want to insert the table.

* Select the Insert tab

* In tables group click the table Conamand.

* It displays different options to insert the table.

* select the despred option to insert the table.

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11. Create a worksheet:

1. open excel

2. select Blank worksheet or Press ctrl + r

save with name 'book1'

1. Click file > save As

2. under save As, PICK the place where you want to save your worksheet.

3. click Browser to find the location you want in your documents folder.

* In the file name box, enter a name book 1.

* To save your workbook in a different file format

* click save.

12. * The sum of the marks using Autosum in a range of cells (C2 : C11)

$C_2 : C_{11} = 70 + 55 = 125$

* Average of the marks in range of cells (C2 : C11) = 62.5

* Highest marks in a range of cells (C2 : C11) = 70

* Minimum marks in a range of cells (C2 : C11) = 55

13) a).

To modify Column width of a worksheet

1. select the column or columns that you want to change.

2. on the home tab, in the cells group, click format.

3. under cell size, click column width

4. in the column width box, type the value that you want.

5. click OK.

To modify the row height of a worksheet

1. select the rows that you want to change.

2. on the home tab, in the cells group, click format

3. under cell size, click Row height.

4. In the row height box, type the value that you want.

5. click OK.

To delete rows and columns of worksheet

1. Select the cells, rows or columns that you want to delete

2. Right-click, and then select the appropriate delete option.

3. click ok.

b) Absolute and relative reference

* Relative and absolute references behave differently when copied and filled to other cells.

* Relative references change when a formula is copied to another cell.

* Absolute references, on the other hand, remain constant no matter where they are copied.

Cell address: Cell address is a combination of a column letter and a row number that identifies a cell on a worksheet.

14) a) Power point presentation :-

* It is an excellent way of presenting information to an audience in visual form.
* The software is easy to use and offers a lot of cool effects for your slideshows
* It helps both the speaker and the participants to learn about the topic more easily.

b) open a blank presentation :-

* click on start.
* select MS office powerpoint option.
* Double click on it.

Save the presentation:

* It's a good idea to keep saving our work periodically as we never know when we will lose power or when our computer is likely to crash.

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

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

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

* on the playback tab
* select insert captions, and then select Insert captions.
* In the Insert captions dialog box, select the file or files and then click Insert.

Add a new slide which has a title and content :-

1. In the slide thumbnail pane on the left, click the slide that u want your new slide to follow.
2. on the home tab, click new slide.
3. In the new slide dialog box, select the layout that you want for your new slide. Learn more about slide layouts
4. Select add slide.

15) Title slide & bullet list

1. Go to the slide that you want to add list formatting to.
2. On the slide, select the lines of text in a text placeholder or table you want to add bullets or numbering to.
3. On the home tab, in the paragraph group, click bullets or numbering.

Inserting Excel sheet:

1. On the insert tab, click object.
2. In the insert object dialog box, select create from file.
3. click or tap browse, and in the Browse box, find the excel workbook with the data you want to insert and link to.
4. click ok.

Clip art and text:

1. select insert > online pictures.
2. type a word or phrase to describe what you are looking for, then press enter.
3. filter the results by type for clipart.
4. select a picture
5. select insert

Slide show effects:

1. select the object you want to animate.
2. select animations and choose an animation.
3. select effect options and choose an effect.

16) what is the difference between Machine language and high level language?

Machine language :-

≠ A computer programming language consisting of binary instructions which a computer can respond to directly.

≠ Machine language is a collection of binary digits or bits that computer reads and interprets.

Advantage :-

≠ This language makes fast and efficient use of the computer

≠ It requires no translator to translate the code. It is directly understood by the computer.

Disadvantage :

≠ All memory addresses have to be remembered.

≠ All operation codes have to be remembered.

17) Data types :-

* C language is rich in its data types. Storage representations and machine instructions to handle constants differs from machine to machine. The variety of data types available allow the programmer to select the type appropriate to the needs of the application as well as the machine.

01. Primary data types
02. Derived data types
03. User-defined data types

18.

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

$= 33$

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

$= 30$

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

$= 16$

19.

a) If-else statement:-

Syntax:

```
If (test expression)
  {
    True-block statement(s)
  }
else
  {
    False-block statement(s)
  }
statement-x
```

b) for loop

Syntax:

```
for (Initialization; test-condition; Increment
                                or decrement)
{
   body of the loop
}
```

c) while loop

Syntax

```
while (test condition)
{
    body of the loop
}
```

d) do loop

Syntax

```
do
{
    body of the loop
}
while (test - condition);
```

20. a) program

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

output:

IMS Ghaziabad

b) Program

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

Output:

IMS Ghaziabad

IMS Ghaziabad

c) Program

```
#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
```