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CCA - 101: FUNDAMENTALS OF IT AND PROGRAMMING

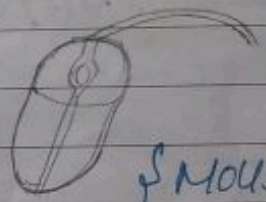
ASSIGNMENT - 1

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

Ans:→ A computer has four main components:

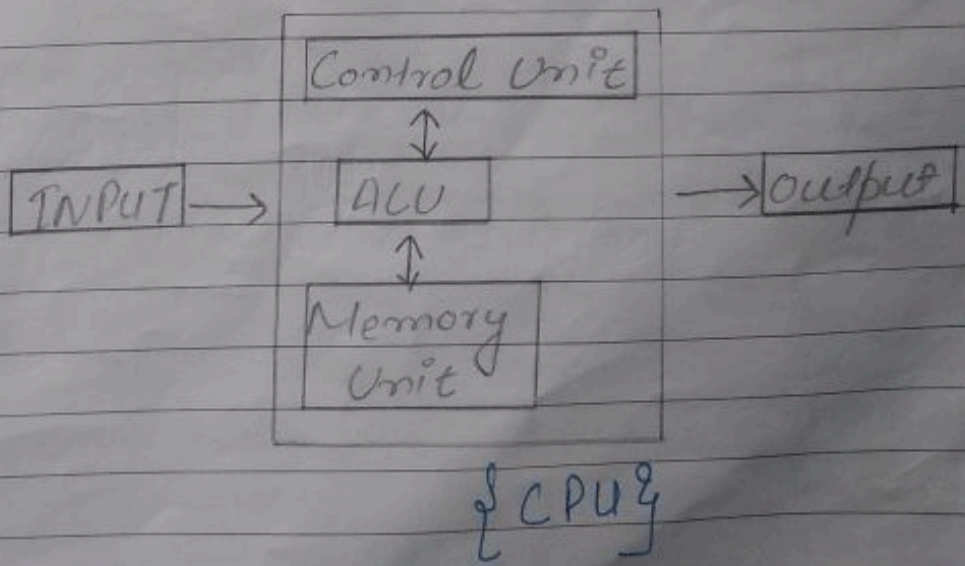
1. Input Unit
2. The central processing unit or CPU.
3. The Primary memory and
4. output unit.

INPUT UNIT :→ The devices to input information, such as keyboard, and mouse.



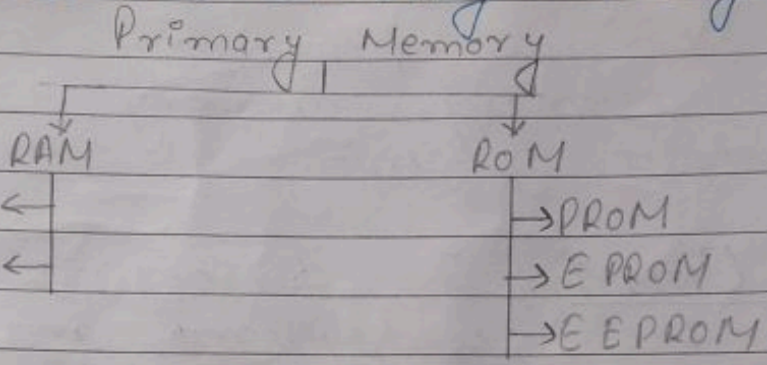
{MOUSE}

CPU :→ Center processing unit :→ The CPU is further broken ups into ALU, control Unit, and Instruction Unit.

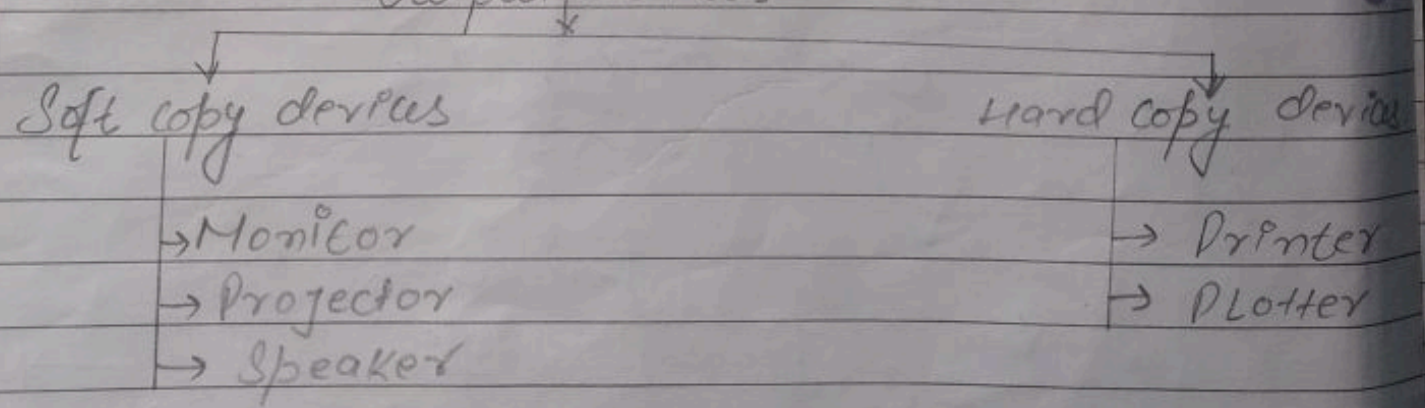


{CPU}

Primary / Main Memory:- Primary memory is the computer memory that is directly accessible by CPU. It is comprised of DRAM and provides the actual working space to the processor. It holds the data & instructions that the processor is currently working on.



Output Device:- An o/p device is any peripheral that receives data from a computer, usually for display, projection, or physical reproduction. e.g, the image show an inkjet printer, an o/p device that make a hard copy of anything shown on the monitor.



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

As:- Based on size and capacity, computers are classified as follows:-

→ Super Computers
→ Mainframe Computers
→ Mini Computers
→ Micro Computers.

Super Computers

A Super Computer is a computer with a hi level of performance compared to a general-purpose computer. Performance of supercomputer is measured in floating-p operations per second (FLOPS) instead of million instructions per second (MIPS).

Mainframe Computers

A mainframe is a large integrated machine with a lot of memory, a lot storage capacity, and a lot of high-end processors. To such a large functioning has a lot of computational power comparison to normal computer systems.

Mini Computers

MiniComputer, Computer that was smaller, expensive, and less powerful than a ma -rame or supercomputer but more expen and more powerful than a personal

Computer. Minicomputers were used for scientific and engineering computations, business transaction processing, file handling, and database management.

Micro Computer

A micro computer is a complete computer on a small scale, designed for use by one person at a time. An antiquated term, a microcomputer is now primarily called a personal computer (PC), or a device based on a single-chip microprocessor. Common microcomputers include laptops and desktop.

Q3. What is the meaning of Computer gen. How many Computers Gen. are defined? Which technologies were / are used?

Ans:- Computer gen. is classification of Computers into different groups according to their manufacturing date, memory device, hardware and S/W technologies used in them. There is five gen. of computer.

Ist GEN.

The period of first gen. was from 1946-1959. The first computers of first gen. used vacuum tubes as the basic components for memory and circuitry for CPU. These tubes, like electric bulbs, produced a lot

of heat and the installations used to fuse frequently.

2nd GEN

The period of second gen. was from 1959 - 1965. In this gen., transistors were used that were cheaper, consumed less power, more compact in size, more reliable and faster than the first gen. machines made of vacuum tubes.

3rd GEN

The period of Third gen. were compute that emerged due to the development of the integrated circuit (IC). They were the first steps toward computers as we kno them today. Their main feature was the use of integrated circuits, which allo -ed them to be shrunk down to be as small as large toasters.

4th GEN

The period of 4th (fourth gen.) was from 1971 - 1980. Computers of fourth gen. used very large Scale Integrated (VLSI) circuits. VLSI circuits and othe circuit elements with their associated circuits on a single chip made it possible to have microcomputers of fou generation.

5th GEN

The fifth Gen. Computer system (FGCS) was an initiative by Japan's Minist -ry of International Trade and Industry (MITI), began in 1982, to create computers using massively parallel computing and logic programming. It was to be the result of a govt./industry research project in Japan during the 1980's.

Q4 Different b/w volatile and non-volatile memories?

1	Volatile Memory	Non-Volatile Memory
(1)	Volatile memory is the type of memory in which data is loss as it is powered-off.	Non-volatile memory is the type of memory in which data remains stored even if it is.
(2)	It is faster than non-volatile Memory	It is slower than volatile memory.
(3)	RAM is an example of volatile Memory. (Random Access Memory).	ROM (Read Only Memory) is an example of non-volatile memory.

Q5 Distinguish among system software, app-s/w, and open source s/w on the basis of their features?

Ans:-

System Software

System s/w is a type of computer program that is designed to run a computer's h/w and application programs. If we think of the computer system as a layered model, the system s/w is the interface b/w the h/w and user applications. The O.S (Operating System) is the best-known example of system software.

Application Software

An Application s/w program (application or app for short) is a computer program designed to carry out a specific task other than one relating to the operation of the computer itself, typically to be used by end users. Word processors, media players, and accounting s/w are example.

Open Source Software

Open-source s/w (OSS) is computer s/w that is released under a license in which the copyright holder grants users the rights to use, study, change and distribute the software and its code to anyone and for any purpose. open-source s/w may developed in a collaborative public man-er.

Q6(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.

As:→ 1. Open Word. Or if Word is already open, Select File → New.

2. In the Search for online templates box, enter a search word like letter, resume, or invoice. Or, select a category under the search box like Business, Personal, or Education.

3. Click a template to see a preview.

4. Select Create.

(b) Write steps regarding following:-

(1) To Change the font style.

As:- Select the text you want to modify.

(2) To Change the font size

As:- Select the Home tab and locate the Font group.

(3) To change the font color.

As:- Click the drop-down arrow next to Font Style box.

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

Ans:→ If you want to change the font to bold or italic, click the 'B' or 'I' icons on the format bar.

Q7 Create a file in MS Word for the following documents and save it with file 'ms-word'. Describe all steps involved in it.

MS Word.

MS Word is a widely used commerical Word processor developed by Microsoft.

- Creating,
- editing.
- Saving
- Printing any type of document.

Ans: Creating

1. Click the microsoft offic button / file tab.
2. Select New. the new document dialog box appear.
3. Select Blank document, It will be highlite d by def default.
4. A New blank document appears in the Word window.
5. Now you can create document by inserting text.
6. Finally save document.

Editing

1. Click the Edit tab.

2. Select the text you want to edit.
3. Using the tool in the edit toolbar, change the required formatting including font style, paragraph, alignment, list formatting, and indentation option.

Saving

- To save doc. using save as command

1. Click the Microsoft office button/file tab.
2. Select save as - word document.
3. Select the location where you want to save the doc. using the drop-down menu.
4. Enter a name for the doc.
5. Click the save button.

Printing any type of document

1. Select File ↓ Print.
2. To preview each page, select the forword and backword arrow's at the bottom of the page. If the text is too small to read, use the zoom slider at the bottom of the page to enlarge it.
3. Choose the no. of copies, and any other options you want, and select the print button.

Q8 Create a file in MS word for the following document and save it with the file

Name 'equations'. Describe all steps involv-ed in it.

Eg, Eq.

$$x_2 + Y_5 = 30$$
$$Z^3 + 0^4 = 50$$
$$A_2 + B^6 = x_2 + Y^8$$

Ans:- Select Insert > Equation or Press Alt + =

2. To use a built - in formula, select design > equation.
3. To create your own, select design > eq > ink equation.
4. Use your finger, stylus, or mose to write your equation.
5. Select insert to bring your equation into the file.

Q9

Ans:- 1. Select the text and make sure its property formatted.
Word will insert a new coloumn when a tab characters is found, so make sure the columns are separated by tabs.
2. Click the insert tab.
3. Click the table button.
4. Select convert text to table.
If the text was formatted right, some of the options in this dialog box should already be filled in. Otherwise, set the no.'s of columns & rows, & how to separate the text into columns.

5. (optional) Customize Autofit behavior.
6. Click ok.

The selected text is automatically turned into a table.

Q10

Ans:- 1. Open a blank word document.
2. In the top ribbon, press Insert.
3. Click on the table button.
4. Select the no. of columns and rows you need, or click insert table & a dialog box will appear where you can specify the no. of columns & rows.
5. The blank table will now appear on the page after it as necessary. Standard features like bold, Italics, and underline are still still available. These items may be helpful for creating headings & calling out certain items in the table.

Q11 Create a following marksheet in MS-Excel and save it with name 'book1'.

Ans:- Right - click the worksheet name tab.
2. Click select move and copy.
3. Click on the move selected sheet to Book drop-down menu select (new book).
4. Click Ok your new workbook opens with your moved worksheet.
5. Click file > save in your new workbook.

Q12(a) The sum of the marks using Autosum in a range of cells (C2 : C11).

Ans:→ To sum a column of number's select the cell immediately below the last number in the column. To sum a row of no's, select the cell immediately to the right

2. Autosum is in two locations: Home > Auto-sum and formulas > Autosum.
3. Once you create a formula, you can copy it to other cells instead of typing it over and over.
e.g. if you copy the formula in cell B12 to cell C12, the formula C12 automatically adjusts to the new location and calculates the numbers in C2 : C11.
4. You can also use autosum on more than one cell at a time.
e.g. you could highlight both cell B12 and C12, click autosum and total both columns at the same time.
5. You can also sum numbers by creating a simple formula.

(b) Average of the marks in a range of cell (C2 : C11).

Ans:- Click a cell below the caloumn or to the right of the row. of the numbers for which you want to find the average.

2. On the Home tab, click the arrow next to Autosum > Average, and then press Enter.

(c) highest marks in a range of cells (C_2:C11)

As:- In a blank cell, type "= MAX ("

2. Select the cells you want to find the largest number from.
3. Close the formula with an ending parentheses.
4. Hit enter and the largest number from your selection will populate in the cell.

(d) minimum marks in a range of cells. (C_2:C11)

As:- Select the cell C_2 and write the formula.
2. = MIN (C_2:C11) press Enter on your keyboard.
3. The function will return. 3.
4. 3 is the minimun value in the range (C_1:C11)

Q13(a) Describe various steps involved in the following.

(1) To modify column width of a worksheet.

As:- 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 with box, type the value that you want.
5. Click ok.

(2) To modify the row or hight of a work-sheet.

Ans:- Select the row or 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, and then click ok.

5. To delete rows and columns of a worksheet.
1. Select the cells, rows or columns that u want to delete.
2. Right-click and then select the appropriate delete option.
e.g. Delete cells and shift up, Delete cells & shift left, Delete Rows or delete columns.

(b) Describe the following terms in the worksheets.
(i) Absolute reference and relative reference in formula.
Ans:- Select the cell that contains the formula.
2. In the formula bar select the reference that you want to Change.
3. Press F4 to switch between the reference types.

(ii) Cell Address.
Ans:- A cell is the intersection of a row and a Column. Column are identified by lette

(A, B, C), while rows are identified by no's (1, 2, 3), Each cells has its own name - or cell address - based on its column and row. In this e.g, the selected cell intersects column C and row 5, so the cell address in C5.

Q14(a) What tools are available to customize our power point presentations?

Ans:- ① Templates and themes.

② Slide layouts
③ Font
④ Color Themes
⑤ Icons
⑥ Shapes
⑦ Stock Photos
⑧ Charts and Graphs
⑨ Maps
⑩ tables.
⑪ Flowcharts
⑫ Icon charts
⑬ Radials
⑭ Progress Bars
⑮ Animation
⑯ Transitions
⑰ Interactivity
⑱ Audio
⑲ Video

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

① Open a Blank presentation?

Ans:- Select the file tab to go to Backstage view.

2. Select New on the left, side of the window. then Click Blank Presentation.

3. A new presentation will appear.

② Save the presentation as lab1.pptx.

Ans:- ① Create a Blank presentation.
② Save a presentation.
③ Apply a Design.
④ Compore Presentation views.
⑤ Format Text.
⑥ Insert Smartart
⑦ Insert & Modify Shapes.
⑧ Edit and Duplicate slides.

⑧ Add a title to the first slide: the name of your college.

Ans: 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 context for a slide that contains a title and a full slide text box.
May other layout options include titles, too. Pick the ones that's best suited for your presentation.
4. Select the click to add title text box. Enter your title for that slide.

⑨ Type your first name and last name in the subtitle section:

Ans: 1 Using your mouse and cursor, click inside of the top textbox.
② Using your keyboard, type the name of the animal you have been researching for Class.

③ Using your mouse and cursor, click inside of the bottom textbox.

④ Using your keyboard, type your first and last name, click enter, and type your teacher's name.

⑤ Add a new slide which has a title and content

Ans: ① Click the "Home" tab in the Ribbon.

② Then click the "new slide" button in the "Slides" button group.

③ Alternatively, to add a new slide with a different slide layout.

④ Click the "Home" tab in the Ribbon.

Q 15(a) Title slide and bullet list?

Ans:-

Title Slide

The title slide is the first slide of a presentation. It usually contains a little and a subtitle. of all the slides in a presentation, the first slide is one of the most important, as the title slide generally sets the tone.

① Click Home > layout.

② Select Title slides for a standalone title page or

③ Select title and content for a slide that contains a title and a full slide text box.

(2) Bullet list.

Ans:- (1) On the left - hand slide of the powerpoint window.

(2) Click a slide thumbnail that you want to add bulleted or numbered text to.

(3) On the slide, select the lines of text in a text placeholder or table that you want to add Bullets or numbering to.

(4) On the home tab. in the Paragraph group click Bullets or Numbering.

Part 2

Q16 What is the differente b/w Machine lang. and high level language?

Ans:- Machine language:- A machine lang. is the only lang. that a computer directly understands, it is usually written in zero (0) and ones (1). A program instruction in machine lang. may look something like this 11001001 where

High level language:- A high level language is a programming lang. that uses English and mathematical symbols. like +, -, % and many other its instructions.

Q17 Discuse about different data types

C Programming language?

Ans:- There are some common data types in C programming language.

① Int - used to store an integer value
② Char - used to store or single character.
③ float - used to store decimal no.'s with single precision.
④ double - used to store decimal nos with double precision.

e.g,

```
#include <stdio.h>
int main()
{
    // datatypes
    int a = 10;
    char b = 'S';
    float c = 2.88;
    double d = 20.888;
    printf("Integer datatype: %d\n", a);
    printf("Character datatype: %c\n", b);
    printf("float datatype %f\n", c);
    printf("double datatypes: %lf\n", d);
    return 0;
}
```

O/P ① Integer datatypes: 10 ④ Double float datatypes
② Char datatypes: S. : 2.888000
③ float datatypes: 2.880000

Q18 Find the output of the following expression.

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

Ans:- $x = \frac{20}{5} \times 2 + 30 - 5$

$x = 4 \times 2 + 30 - 5$

$x = 8 + 30 - 5$

$x = 8 + 25$

$\boxed{x = 33}$

Hence, the value of x is 33 Ans.

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

Sol:- $Y = 30 - 4 + 6 + 10$

$Y = 30 - 0$

$\boxed{Y = 0}$

Hence, the value of y is 30 Ans.

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

Sol:- $Z = 40 \times \frac{2}{10} - 2 + 10$

$Z = 8 - 2 + 10$

$Z = 8 + 8$

$\boxed{Z = 16}$

Hence, the value of z is 16 Ans.

Q19 Describe the syntax of the following statements?

a) If - else statement.

Ans:-

```
#include <iostream>
using namespace std;
```

```
int main ()
{
    int number;
    cout << "Enter an integers";
    cin >> number;
    if (number > 0)
    {
    cout << "you entered a positive
     integer:" << number << endl;
    }
else if (number < 0)
{
  cout << "you entered a negative
   integer" << number << endl;
}
else
{
  cout << "This line is always
   printed";
  return 0;
}
```

O/P Enter an integer;

(b) for loop

Ans:

```
#include <stdio.h>
int main ()
{
    int i;
    for (i=0; i<10; i++)
    {
        printf ("Hello World");
    }
    return 0;
}
```

O/p 10 times write Hello World.

(c) While loop

Ans:2

```
#include <stdio.h>
int main ()
{
    int i=0;
    while (i<10)
    {
        printf ("Hello World");
        i++;
    }
```

O/p 10 times write hello world.

d) do- While loop :→

Ans :→

```
#include <iostream>
using namespace std;
int main()
int i = 1;
do
{
cout << i << "\n";
i++;

while (i <= 10);
}
```

O/p.

1 to 10 Ans.

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");
}
```

O/P IMS Ghaziabad

(b)

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

O/p Two times write IMS Ghaziabad.

(c)

```
# include <stdio.h>
void main()
{
    int a = 10, b = 100;
    if (a > b)
    printf("Larger no. is %d \n", a);
    else
    printf("Larger no is %d \n", b);
}
```

O/p Larger number is b.