CCA-101: Fundamentals of IT & Programming

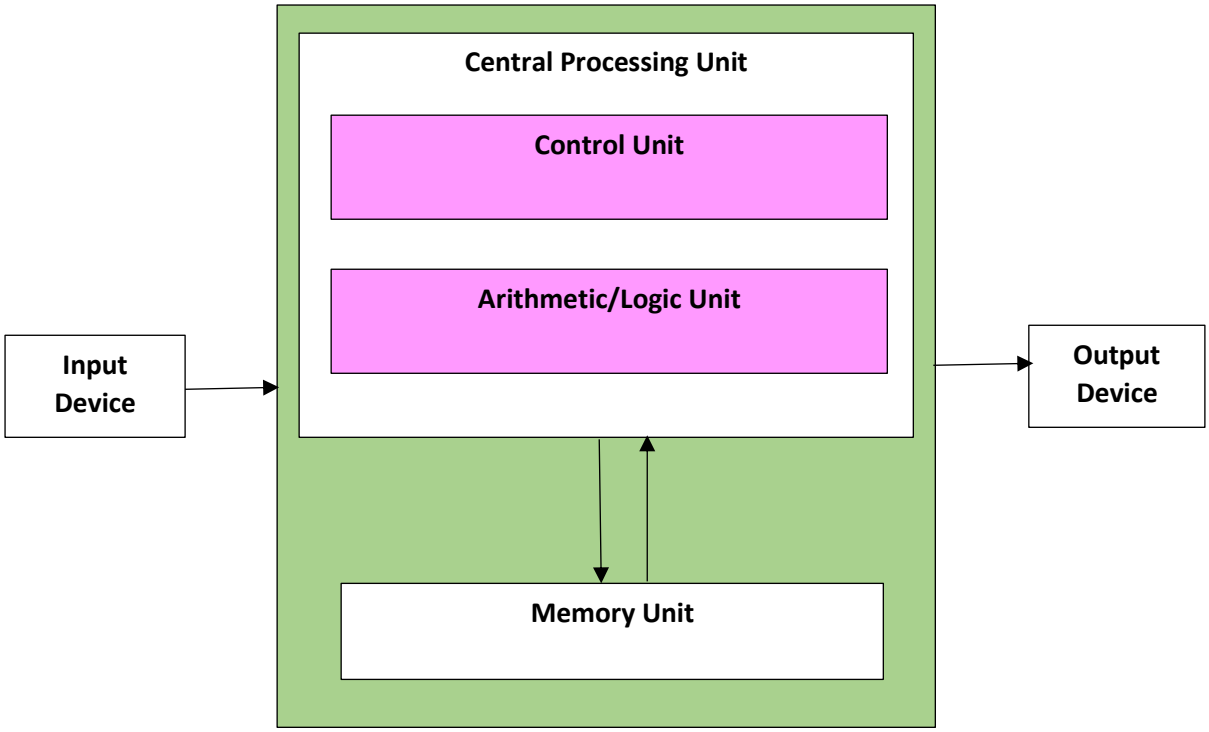
Assignment-1

Q1: What are the four fundamental parts of computer? Explain it with the help of diagram.
Ans: The four fundamental parts of computer are:
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 the device used, all are components for interpretation and communication between people and computer systems.

Central Processing Unit (CPU): It is the brain of the computer without this unit computer unable to process.

Output Device: Output device is used to show the result of instruction. Example Monitor, printer, Headphones etc.

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.



Q2. Discuss about the classification of computers based on size and capacity?
Ans: Based on size and capacity, computers are classified as follows:

- Super Computers
- Mainframe Computer,
- Mini Computers
- Micro Computers

Super Computers: Supercomputers are the most powerful and physically the largest by size. These are systems designed to process huge amounts of data and the fastest supercomputers can perform over one trillion calculations in a second. Supercomputers have thousands of processors. Because of their extraordinary speed, accuracy and processing power, supercomputers are well suited for solving highly complex problems and performing tasks that demand huge amounts of calculations.

Mainframe Computer: Mainframe computers are very large often filling an entire room and can process thousands of million 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.

Mini Computers: Minicomputers 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 server. Users connect to the server through a network by using desktop computers.

Microcomputers: Microcomputers are the most frequently used type of computer. Also, known as personal Computer (PC), a microcomputer is a small computer system designed to be used by one person at a time.

Distributed computers: It is a model in which components of a software system are shared among multiple computers to improve efficiency and performance. According to the narrowest of definitions, distributed computing is limited to programs with components shared among computers within a limited geographic area. In distributed computing, each processor has its own private memory (distributed memory). Information is exchanged by passing messages between the processors.

Parallel Computation: It is a type of computation in which many calculations or the execution of processes are carried out simultaneously. Large problems can often be divided into smaller ones, which can then be solved at the same time. In parallel computing, all processors may have access to a shared memory to exchange information between processors.

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

Ans: There are five generations of computers:

- First Generation
- Second Generation
- Third Generation
- Fourth Generation

First Generation: Vacuum Tubes (1940-1956)
Second Generation: Transistors (1956-1963)
Third Generation: Integrated Circuits (1964-1971)
Fourth Generation: Microprocessors (1971-present)

Q4: Differentiate between Volatile & Non- Volatile memories.

Ans:

Volatile memory	Non-Volatile memory
1. It is a computer storage that only maintains its data while the device is Powered.	1. It is a type of computers memory that has the capability to hold saved data even if the Power is turned off.
2. E.g. RAM	2. E.g. ROM, hard disk, floppy disk, etc.
3. Primary memory has limited storage Capacity and is volatile.	3. Secondary memory provides permanent Storage of data and in bulk quantity.

Q5: 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 systems, compilers, editors and drivers etc. come under this category. A computer cannot function without the presence of system software.

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

Examples: word processors, accounting app etc.

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

Examples: the Linux operating system.

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.

b) Write steps regarding followings

- To change the font style
- To change the font size
- To change the font color
- To highlight (in yellow) the line that read "need to get IMS's address".

Ans: "**Yourself**"

My name is Rohit. I am 21 years old. I love to sing and dance. I am a student of science at IMPHAL COLLEGE, IMPHAL, MANIPUR. Currently I am learning CCA course at RGI TRAINING INSTITUTION.

The steps involved are:

1. We click the Microsoft button.
2. We select new. The new document dialog box appears.
3. We select blank document under the blank and recent section. It will be highlighted by default.
4. We select create. A new blank document appears in the word window.
5. To save the document, we click again the Microsoft office button.
6. We select save as⟶ word document. The save as dialog box appears.
7. We select the location where we want to save the document using the drop-down menu.
8. We enter the file name "yourself" for the document.
9. We click the save button.

B) Ans: steps to change the font style:

1. we select the next we want to modify.
2. left click the drop-down arrow next to the font style box on the home tab. The font style drop-down menu appears.
3. We move cursor over the various font styles. A live preview of the font will appear on the document.
4. Left click the font style we want to use. The font style will change in the document.

Steps to change the font size

1. We select the text we want to modify.
2. Left click the drop-down arrow next to the font size box on the home tab. The font size drop-down menu appears.

3. WE move cursor over the various font sizes. A line preview of the font size will appear on the document.
4. Left click the font size we want to use. The font size will change in the document.

Steps to change the font color

1. We select the text we want to modify.
2. Left click the drop-down arrows next to the font color box on the home tab. The font color menu appears.
3. We move cursor on various font colors. A live preview of the color will appear in the document.
4. Lest click the font color we want to use. The font color will change in the document.

Steps to highlight the line

1. We select the line that reads “need to get IMS’s address”
2. We click the highlight command and select yellow color in the font group in the home tab.

Q7. Create a file in MS- Word for the following document and save it with file name **‘m s_ 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,
- **Printing any type of document**

Ans: MS WORD

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

MS word is application software, which is capable of

- Creating,
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The steps involved are:

1. We click the Microsoft office button
2. We select new. The new document dialog box appears.
3. We select blank document under the blank and recent section.it will be highlighted by default.
4. We click create. A new blank document appears in the word window.
5. We create the given documents from the question.
6. We select the text “MS word” and change the font size by clicking on the font size box on the home tab.
7. We select the text “MS word” to change the font color into red by clicking on the font color menu.
8. We select the text word processor and underline it by clicking the underline command in the font group the home tab.

9. We select the text “MS word” to change the font style into italic by clicking italic command.
10. We select the text we want to format as a list and click on the bullets command on the home tab.
11. We change the font color of the text “creating” and “saving” into blue and red resp. by clicking on the font color command, again we select the text “and” and click on strikethrough command.
12. We select the text “printing any type of document” and change the font style into bold by clicking in the font style command.
13. We save the file name as “m s- word” by clicking the Microsoft office button and select save as.
14. We select the location where we want to save the document using drop-down menu.
15. We click the save button.

Q8. Create a file in MS-word for the following document and save it with file name ‘**equations**’ Describe all steps involved in it.

Equations

$X_2 + Y_5 = 30$

$Z^3 + Q^4 = 50$

$A_2 + B_8 = X_2 + Y^8$

Ans: Equations

$X_2 + Y_5 = 30$

$Z^3 + Q^4 = 50$

$A_2 + B_8 = X_2 + Y^8$

The steps are:

1. We create the given documents in MS-word
2. We select the text where we want to format and click on the subscript and superscript command on the home tab
3. We select the file name as “equations” by clicking the Microsoft office button and select save as
4. We select the location where we want to save the document using the drop- down menu
5. WE click the save button

Q9. 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 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

Ans: To convert existing text to a table:

1. We select the existing highlight text that we want to convert.
2. We select the insert tab.
3. We click the table4 command.
4. We select convert text to table from the menu. A dialog box appears.
5. We click ok. Then the text appears in a table.

Q10: Create a file in MS-Word to insert a table in the document. Describe all the steps involved in it.
Ans:

The steps are:

1. We place our insertion point in the document where we want our table to appear
2. We select the insert tab
3. We click the table command
4. We drag our mouse over the diagram squares to select the numbers of columns and rows in the table
5. Left click our mouse and the table appears in the document
6. We enter the text into the table.

Q11. 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

Q12. Calculate the following things of a range (C2:C11) of data in the worksheet created in question no 10.

- The sum of the mark using AutoSum in a range of cell (C2:C11)
- Average of the marks in a range of cells (C2:C11)
- Highest marks in a range of cells (C2:C11)

- Minimum marks in a range of cells (C2:C11)

Roll No	Name	Marks	Sum	Average	Maximum	Minimum
1	n1	60	654	65.4	90	40
2	n2	70	594	66	90	40
3	n3	80	524	65.5	90	40
4	n4	90	444	63.42857	90	40
5	n5	40	354	59	88	40
6	n6	50	314	62.8	88	44
7	n7	77	264	66	88	44
8	n8	44	187	62.33333	88	44
9	n9	88	143	71.5	88	55
10	n10	55	55	55	55	55

Q13: a) Describe various steps involved in the following

- To modify column width of a worksheet
- To modify the row height of a worksheet
- To delete rows and columns of a worksheet

Q13: b) Describe the following terms in the worksheet

- Absolute reference and relative reference in formula
- Cell address

a) Ans:

- To modify width of a worksheet:
  1. Select a column or a range of columns.
  2. Select a home tab and in the cell group, select format
  3. Click on Column width and type the width for column
  4. Select OK.
- To modify the row height of a worksheet:
  1. Select a row or a range of rows
  2. Select a home tab and in the cells group, select format
  3. Click on row height and type the height for row
  4. Select OK.
- To delete rows and columns of a worksheet:
  1. Select the cell you want to delete within the column or row
  2. Select home tab. And in cells group click on Delete Sheet Column or Row

  OR

  1. Select the desire roe or column.

b) Ans:

- **Absolute Reference**:
  An absolute in Excel means there is a fixed point of reference applied to a cell or a formula. This is so the return value will always stay the same no matter where the cell or formula moves to- within the same sheet or across different sheet.
  This refers to a fixed point of reference is a constant, and involves the use of dollar sign in the formula (i.e., everyone is to receive the same bonus payout, so the amount 1500 is constant in this situation).
- **Relative Reference**:
  It is the default cell reference in Excel. It is simply the combination of column name and row number without any dollar sign. When you copy the formula from on cell to another the relative cell address changes depending on the relative position of column and row. C1, D2,

E4, etc. are examples of relative cell references. Relative references are used when we want to perform a similar operation on multiple cells and the formula must change according to the relative address of column and row.

This refer to a relative point of reference, is constantly changing and dollar sign is absent in the formula (i.e., when each price and quantity are different variables, there's no constant in the calculation).

- **Cell Address**:
  A cell address is a combination of column letter and a row number that identifies a cell on a worksheet.
  For example, A1 refers to the cell at the intersection of column A and row 1; B2 refers to the second cell in column B and so on.
  When used in formula, cell references help Excel find the values the formula should calculate. For instance,
  - To pull the value of A1 to another cell, you see this simple formula:
    =A1
  - To add up the values in cells A1 and A2, you use this one:
    =A1+A2

Q14.a) What tools are available to customize our PowerPoint presentation?

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

- Open a blank presentation
- Save the presentation as Lab1.pptx
- Add a Title to the first slide: the name of your college
- Type your first name and last name in the Subtitle section
- Add a new slide which has a Title and content

Ans a):

Tools available to customize our PowerPoint presentation are:

a) Perspector
b) Pivot Viewer
c) Autodesk 3DS Max
d) VisualBee PowerPoint Add-in
e) SmartArt
f) Animations and Transition
g) Wordle
h) CA coo
i) Oomfo
j) Clip champ

b). Ans:

- To open blank presentation:
  1. Open PowerPoint presentation using 'Run' command (window key+ R).
  2. Select the 'Blank Presentation'. It is opened.
- Save the Presentation as Lab1.pptx.:
  1. Select the 'File' on Tab bar.
  2. Click on 'Save As' option.
  3. Click on document/Desktop as your choice.
  4. Type the name 'Lab1.pptx'.
  5. Click the 'Save' button.

- Add a title to the first slide; the name of your college.
  1. Left click on the 'Click to Add Title' section on the first slide.
  2. Type the name of your college.
- Type your first name and last name in the subtitle section.
  1. Left click on the 'Click to Add Subtitle' section.
  2. Type your first name and last name.
- Add a new slide which has a title and content.
  1. Select the home tab.
  2. Click on the dropdown button of the 'New Slide' on toolbar.
  3.Select the slide having 'Title and Content'. It is added.

Q15: Write the steps for creation of a set of PowerPoint slides that demonstrate your skill to use the tools of PowerPoint. It should include the following things

- Title slide& bullet list
- Inserting Excel Sheet
- Clip art and text
- Slide show effects

Ans:

- Title slide and bullet list:
  1. open PowerPoint Presentation.
  2. Select the home tab
  3.Click at the dropdown button on 'New slide' at toolbar.
  4. Select the slide having Title slide and Bullet list.
- Inserting Excel Sheet
  1. Open the slide where you want to insert the Excel sheet.
  2. Select the 'Insert Tab'. And click on 'Object' on tool bar.
  3. Select the 'Microsoft Excel Worksheet' object type.
  4. Click the 'OK' button.
- Clip art and text
  1. Select the insert tab.
  2. Select the 'Pictures' or 'Online pictures' on tool bar.
  3. choose the appropriate art for the topic.
  4. Click on the 'Insert' button.
- Slide show effects:
  1. Select 'Design Tab' for themes, Variants and Slide size.
  2. Select 'Transition Tab' for Cut, Fade, Push, Wipe, Split, Reveal, Shape, Flash, etc. for slide effects.

Q16: What is the difference between Machine Language and High- Level Language?

Ans:

Machine language	High- level language
1. A computer programming language consists of binary instructions which a computer can respond to directly 2. It requires no translator to translate the code. It is directly understood by the computer. 3. This language makes fast and efficient use of the computer.	1. It is a programming language that enables development of a program in a much more user- friendly programming context. 2. It takes additional translation time to translate the source code to machine code. 3. They are programmer friendly.

Q17: Discuss about different data types of C programming Language.
Ans: The different types of C programming language are:
Char: the most basic data type in C. It is store a single character and requires a single bit of memory in almost all computers.
Int: As the name suggest, an int variable is used to store an integer.
Float: It is used to store decimal numbers
Double: it is used to store decimal numbers (numbers with floating point value but its range of values is high in comparison to float).

Q18. Find the output of the following expressions
a) X= 20/5*2+ 30- 5 b) Y=30- (40/ 10+ 16) + 10 c) Z= 40*2/ 10- 2 + 10
Ans: A) X= 33
B) Y= 30
C) C = 16

Q19: Describe the syntax of the following statements
A) if – else statement b) for loop c) while loop d) do – while loop
Ans: a) if – else statement:

If statements can be followed by an optional else bloc of statement, which executes when the Bootcan expression is false.
Syntax

```
If (expression)
{
True block of statements;
}
else
{
else block of statements;
}
```

B) For loop is similar to while loop. Basic syntax of for loop is as follows:

```
For (expression 1; expression 2; expression 3)
{
Block of statement
}
```

In the above syntax
Expression1- initializes variables.
Expression2- conditional expression as long as this condition is true, loop will keep executing.
Expression3- it 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
    }
```

D) Do- while loop.

Do- while loop is just like a while loop except that the text condition is checked at the end of the loop rather than the start. This has the effect that the body of the loop are always executed at least once

Basic syntax of do- while loop is as follows

```
Do
{
Single statement
  Or
Block of statements
} while (condition);
```

Q20. Find the output of the following program segments

A)	B)	C)

#include <stdio.h>
Int main ()
{
Int I;
For (i=1:i<2;i++)
{
Printf(“IMS Ghaziabad\n”);
}
}
	#include <stdio.h>
	Int main ()
	{
	Int I=1;
	For (i<= 2)
	{
	Printf(“IMS Ghaziabad\n”);
	I=I + 1;
	}
	}
		#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);
		}

Ans: A) 1

B) 2

C) b= 100