CCA-101: Fundamentals of IT & Programming

Assignment -1

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

- Monitor
- CPU
- Mouse
- Keyboard

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

Micro, Mini, Mainframe and Super computer.

Micro computers are smallest and based on the use of microprocessors. Microprocessor is combined or integrated circuit which contains all the elements of processing. Smaller than mainframe and have low speed, low storage capacity. Basically, used for small business application are known as home computers.

Minicomputers are little larger than micro computes also use same microprocessor but with more speed. They can be lined with other systems to form network.

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

Generation in computer terminology is a change in technology a computer is/was being used. Initially, the generation term was used to distinguish between varying hardware technologies. Nowadays, generation includes both hardware and software, which together make up an entire computer system.

There are five computer generations known till date. Each generation has been discussed in detail along with their time period and characteristics. In the following table, approximate dates against each generation has been mentioned, which are normally accepted.

S.No	Generation & Description
1	First Generation The period of first generation: 1946-1959. Vacuum tube based.

2	Second Generation The period of second generation: 1959-1965. Transistor based.
3	Third Generation The period of third generation: 1965-1971. Integrated Circuit based.
4	Fourth Generation The period of fourth generation: 1971-1980. VLSI microprocessor based.
5	Fifth Generation The period of fifth generation: 1980-onwards. ULSI microprocessor based.

Q4: Differentiate between Volatile & Non- Volatile memories.

Volatile Memory

Volatile Memory is a type of memory who continuously needs power connection to function. When the computer's power is turned off, volatile memory loses its contents. And the information will get erased when the source is out. The most common and well-known form of Volatile Memory we are using in our computers is Random Access Memory (RAM). RAM is necessary to run a program or instruction on a computer or any other electronic device similar to the computer, but it loses the data when power is removed.

Non-Volatile Memory

Non-volatile memory, by contrast, does not lose its contents when power is removed from the computer. Thus, volatile memory is temporary and non-volatile memory is permanent. RAM is the most common type of volatile memory. Examples of non-volatile memory include ROM, flash memory, and CMOS. The following sections discuss these types of memory.

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

S.No.	System Software	Application Software
1.	System software is used for	Application software is used by

	operating computer hardware.	user to perform specific task.
2.	System softwares are installed on the computer when operating system is installed.	Application softwares are installed according to user's requirements.
3.	In general, the user does not interact with system software because it works in the background.	In general, the user interacts with application sofwares.

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.

Creating a new document

- To create a new Word document, you simply click on File and then New or the New Blank Document button on the upper left if you have it available.
- If you go to File and New you get more options compared to just clicking on the New Blank Document toolbar button.

Saving documents

- If you need to save your document so you can access it later or send it to someone else Word makes the process very easy.
- If you are used to saving files in other Windows programs then it is pretty much the same process with Word. There is a Save button on the toolbar which looks like a floppy disk. You can also get to the save option from the File menu.
- If you want to save a copy of your document with a different name then you can choose the Save As option from the File menu.
- From the save dialog box you can browse to where you want to save your document. Most of the time the default location is My Documents.
- In the yourself.docx box you will type the name of your document. If you want to make a new folder to store your document then you can click the New Folder button on the top left.

Q6 b) Write steps regarding followings

1. To change the font style
2. To change the font size
3. To change the font colour
4. To highlight (in yellow) the line that reads “need to get IMS’s address”.

- Open **Word**.
- Click the **Home** tab in the top left corner.
- Under the Fonts block, click the **expand button**. It's a small arrow icon in the bottom right corner. This will open the Font settings window.
- Select your desired **Font**.
- Select your desired **Font style**. Your choices are regular, *italic*, **bold**, or ***bold italic***.
- Click **Set as Default** in the bottom left corner.
- Select your desired **Font Size**.
- Click **Set as Default** in the bottom left corner.
- Click **OK** to confirm your changes.
- Home tab and then click the Text Highlight Color command in the Font group. Select the Yellow box. Select text “need to get IMS’s address”.

Q7. Create a file in MS-Word for the following document and save it with file name ‘ms_word’. Describe all steps involved in it.

- To create a new Word document, you simply click on File and then New or the New Blank Document button on the upper left if you have it available.
- There is a Save button on the toolbar which looks like a floppy disk. You can also get to the save option from the File menu.
- If you want to save a copy of your document with a different name then you can choose the Save As option from the File menu.
- From the save dialog box you can browse to where you want to save your document. Most of the time the default location is My Documents.

- In the ms_word.docx box you will type the name of your document.

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

- To create a new Word document, you simply click on File and then New or the New Blank Document button on the upper left if you have it available.
- Type the given equation.
- There is a Save button on the toolbar which looks like a floppy disk. You can also get to the save option from the File menu.
- If you want to save a copy of your document with a different name then you can choose the Save As option from the File menu.
- From the save dialog box you can browse to where you want to save your document. Most of the time the default location is My Documents.
- In the equation.docx box you will type the name of your document.

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.

- To create a new Word document, you simply click on File and then New or the New Blank Document button on the upper left if you have it available.
- Type the given text and select the text and click on insert table.
- There is a Save button on the toolbar which looks like a floppy disk. You can also get

  to the save option from the File menu.

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

- **Open Word or the document where you wish to put a table.** You can insert

tables into any version of Word.

- **Position the cursor on the area where you want the table to be inserted.** Click the “Table” button that is located under the “Insert” tab.
  For best formatting results, place the table between paragraphs or on its own line.
- **Choose your method of inserting your table.** In Word 2007, 2010, and 2013, you have a few different choices when it comes to inserting a table into your document.

- Use the Grid to make a table. You may insert the table by using the grid where the squares represent the number of rows or columns you can have on your table. Simply drag your mouse over the grid and click after highlighting the number of squares needed.
- Open the “Insert Table” menu. This menu allows you to specify the number of rows and columns that you want your table to have, as well as the width of the columns. You can set the width to AutoFit to your cell’s contents or have a fixed width. Click “OK” to insert the table.
- Insert an Excel spreadsheet. Click on Excel Spreadsheet if you want to insert a table which allows you to manipulate data like Excel (for example: formulas and filters). Click outside the table if you want to work on the document itself.
- Use prebuilt table templates. On newer versions of Word you can click “Quick Table” if you want to use built-in table templates. Simply replace the sample data with your own.

Q11. Create a following worksheet in MS-excel and save it with name ‘book1’.

This is the Home Page of Excel, where you can click on Blank Workbook, and the screen that appears is nothing but your Excel Workbook.

First thing to notice here, is the Name of the Workbook. Excel by default saves it as Book1.

In the extreme Right Corner, we have three options:

- **Minimize** – to minimize your screen
- **Restore** – Let’s see what happens when you press the restore button.

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

- the sum of the marks using AutoSum in a range of cells (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)

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

Select Cells and type formula in =SUM (C2:C11)

2.average of the marks in a range of cells (C2:C11)

Select cells marks and select target cell type formula =avg (C2:C11)

3. highest marks in a range of cells (C2:C11)

Select range and select target cell =Max (C2:C11)

4.minimum marks in a range of cells (C2:C11)

Select range and select target cell =Min (C2:C11)

Q13 a) Describe various steps involved in the following

1. To modify column width of a worksheet
2. To modify the row height of a worksheet
3. To delete rows and columns of a worksheet

1.To modify column width of a worksheet

1. Position the mouse over the column line in the column heading so the cursor becomes a double arrow.
2. Click and drag the mouse to increase or decrease the column width.
3. Release the mouse. The column width will be changed.

2.To modify the row height of a worksheet

1. Position the cursor over the row line so the cursor becomes a double arrow.
2. Click and drag the mouse to increase or decrease the row height.
3. Release the mouse. The height of the selected row will be changed.

3.To delete rows and columns of a worksheet

1. Select the row you want to delete.
2. Click the Delete command on the Home tab.
3. The selected row will be deleted, and those around it will shift.

Q13 b) Describe following terms in the worksheet

1. Absolute reference and relative reference in formula
2. Cell address

A cell reference in Excel is a cell address. It tells Microsoft Excel where to look for the value you want to use in the formula.

A cell reference, or cell address, is an alphanumeric value used to identify a specific cell in a spreadsheet. Each cell reference contains one or more letters followed by a number. The letter or letters identify the column and the number represents the row.

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

1. Crop Pictures to Fit Shapes
2. Play Music in the Background During a Presentation
3. Combine Shapes to Create a Custom Shape
4. Add Sound Effects to Animations
5. Remove the Background from a Picture
6. Insert a Screenshot or Screen Clipping
7. Embed YouTube Videos

Q14 b) Write the steps for the following action for creation of power point presentation

1. Open a Blank presentation
2. Save the presentation as Lab1.pptx

Open a Blank presentation

Step 1: Launch the PowerPoint Program

Step 2: Choosing a Design

Step 3: Create Title Page

Save the presentation as Lab1.pptx

1. In PowerPoint 2010 (or a newer version), on the File tab, click Save.
2. In the Save dialog box, type Lab1.pptx
3. Click save.

Q15. 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

1. Title slide &bullet list
2. Inserting Excel Sheet
3. Clip art and Text
4. Slide show effect

1.Create a New Slide

- Click on New Slide from the Home tab. A list of thumbnails appears, outlining your various slide content options to choose from.
- Click once on the appropriate thumbnail to bring up the next slide.

Entering bullets:

- Bullets appear automatically on each line.
- Pressing Enter brings up the next bullet.
- To erase an unwanted bullet, click next to that bullet and press the Backspace key.
- To indent a bullet (to make a sub-point), press Tab.
- To undo an indent, press Shift together with the Tab key

2.Inserting Excel Sheet

- Click once anywhere inside the chart to select it. This launches a Chart Tools contextual command tab that doesn't appear on the normal editing screen.

- Make sure the Design tab under Chart Tools is selected and then click on Edit Data from the Data group.

Clip art and Text

- Right-mouse click inside the shape.
- Select Edit Text (with the left mouse button).
    - Enter your text.
    - Click on the Insert tab and choose Clip Art from the Illustrations group.

4.Slide show effect

- Click on the Animations tab.
- Glide your mouse over each of the transition effects located in the Transition to This Slide group to preview them on your slide.
- Note the vertical scroll bar to the right; there are more effects to preview than are currently in view.
- Click once on an effect to select it.
- To apply the transition to the entire presentation, click on Apply to All.

Part -2

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

COMPARISON	HIGH-LEVEL LANGUAGE	LOW-LEVEL LANGUAGE
Basic	Programmer amiable	Machine-friendly
Speed of execution	Fast	Slow
Translation	Requires compiler or an interpreter.	Assembler is required while machine language is directly executed.

COMPARISON	HIGH-LEVEL LANGUAGE	LOW-LEVEL LANGUAGE
Memory efficiency	Low	High
Comprehensibility	Understandable	Hard to understand
Portability and machine dependency	Portable and runnable in any platforms.	Non-portable and machine dependent.
Debugging and maintenance	Simple	Quite complex

Q17. Discuss about different data types of C programming Language.

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 pointer.

Q18. Find the output of the following expressions

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

b) Y=30 – (40/10+6) +10

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

a) 33

b) 30

c) 16

Q19. Describe the syntax of the following statements

1. If – else statement

The syntax of the if-then-else statement is: if (expression) { // codes } else { // some other code }. Here, our program will do one task (task inside if block) if the test expression is true and another task (task inside else block) if the test expression is false.

2. for loop

for-loop (or simply for loop) is a control flow statement for specifying iteration, which allows code to be executed repeatedly.

3. while loop

The while statement, in C#, is an iteration statement that allows for the execution of an embedded statement conditionally for zero or more times. The embedded statement implies the code block that contains single or multiple statements to be executed within the while statement.

4. do-while loop

Definition and Usage The while statement creates a loop that is executed while a specified condition is true. The loop will continue to run as long as the condition is true. It will only stop when the condition becomes false.

Q20. Find the output of the following program segments.

1.

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

getchar();
return 0;
}
```

Output : IMS Ghaziabad

2.

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

getchar();
return 0;
}
```

```
Output:
IMS Ghaziabad
IMS Ghaziabad
IMS Ghaziabad
```

3.

```
#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