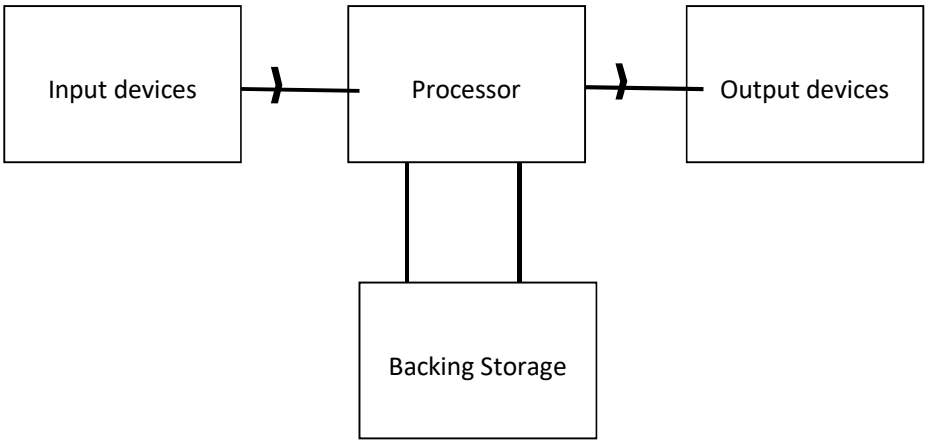
- Q1: What are the four fundamental parts of the computer? Explain it with the help of diagram.

Ans:- The four fundamental parts of the computer are

1) Input devices 2) Processor (CPU) 3) Output Device 4) Backing Storage



1) Input Device

- 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.

2) **Processor (CPU)**

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

3) **Output devices**

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

4) **Backing Storage**

- Backing storageis the collection of storage units or devices together. The baking storage 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**

- 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.
- Because of their extraordinary speed, accuracy and processing power, supercomputers are well suited for solving highly complex problems & huge amounts of calculations.

- Example: JAGUAR, ROADRUNNER etc

- **Mainframe Computer**
  - 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.
  - 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
  - Example: IBM mainframes Z13, IBM System z9 mainframe
- **Mini Computer**
  - 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 servers
  - Users connect to the server through a network by using desktop computers.
  - Example: Apple iPod, CDC 160A
- **Micro Computers**
  - Microcomputers are the most frequently used type of computer.
  - It is also, known as Personal Computer (PC)
  - A microcomputer is a small computer system designed to be used by one person at a time.
  - Example: Desktop computers, laptops

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

Ans:- Meaning of computer generation is the evolution of digital computing.

Four generation of computer are defined they are

- **First Generation: Vacuum Tubes (1940-1956).**
  - First Generation Computer used **Vacuum Tubes** for circuitry and **Magnetic drums** for memory
  - It's relied on **machine language**
  - Input was based on **punched cards** and **paper tape,** and output was deplayed on **printouts**
- **Second Generation: Transistors (1956-1963).**
  - Second Generation used **Transistors**
  - It's used **symbolic,** or **assembly language**
  - **Punched cards for input** and **printouts for output**
- **Third Generation: Integrated Circuits (1964-1971).**
  - Second Generation used **integrated circuit**
  - **Keyboards and monitors** start using for **inputs** and **outputs**
- **Fourth Generation: Microprocessors (1971-Present).**
  - Fourth Generation start to use **microprocessor**

- It starts to use **Graphical User Interface (GUIS), mouse** and **handheld devices**
- **Quantum computation** and **nanotechnology**

Q4: Differentiate between Volatile & Non- Volatile memories.

Ans:-

Volatile	Non- Volatile
a computer storage that only maintains its data while the device is powered	a type of computer memory that has the capability to hold saved data even if the power is turned off.
Example: 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.	Example: 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.

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 software created for a specific purpose, used by end users. It can be called an application or simply an app.
  - Examples: Word processor, accounting application, a web browser, an email client, media player 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 users rights to study, change and distribute the software to anyone and for any purpose.

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

Ans:- a) 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 documents appear 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) Steps to change the font style:

1. we select the text 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 in 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 style:

1. we select the text 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 in 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 colour:

1. We select the text we want to modify.

2. Left click the drop-down arrows next to the font colour box on the home tab. The font colour menu appears.

3. We move cursors on various font colours. A live preview of the colour will appear in the document.

4. Left click the font colour we want to use. The font colour will change in the document.

Steps to highlight the line:

1. We select the line that reads “needs to get IMS’s address”

2. We click the highlight command and select yellow colour in the font group on the home tab.

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.

MS Word

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

MS word is a application software, which is capable of

- creating,
- editing,
- saving, ~~and~~
- **printing any type of document**

Ans:- 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 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 on the font style command.

13. We save the file name as “ms-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:- 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 save 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 dialogue box appears.

Click on **Convert Text to Table, a new** dialogue 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 dialogue box appears	Click on **Convert Text to Table, a new** dialogue
Here set numbers of columns	Click on OK Finally Selected text to 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 table 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

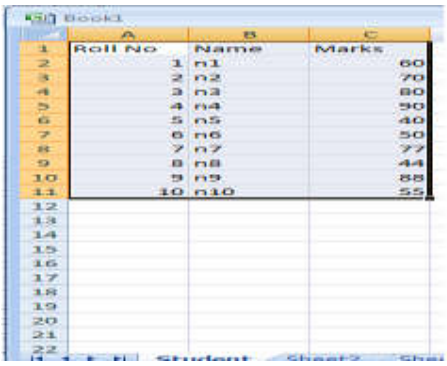
Q10. Create a file in MS-Word to insert a table in the document. Describe all steps involved in it.

Ans:-

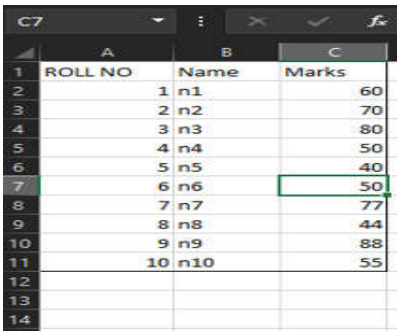
the steps are:

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'.



Ans:-



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)

Ans:-

No	Name	Marks	Sum	Average	Maximum	Minimum
1	n1	60	654	65.4	90	40
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				

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

b) Describe following terms in the worksheet

- Absolute reference and relative reference in formula
- Cell address

Ans:-(a)

- To modify column width of a worksheet:
  I. Select a column or a range of columns.
  II. Select a Home tab and in the Cells group, select Format.
  III. Click on Column width and type the width for column.
  IV. Select OK.
- To modify the row height of a worksheet.
  I. Select a row or a range of rows.
  II. Select a Home tab and in the Cells group, select Format.
  III. Click on Row Height and type the height for row.
  IV. Select OK.
- To delete rows and columns of a worksheet.
  I. Select the cell you want to delete within the column or row.
  II. Select Home tab. And in cells group click on Delete Sheet Column or Row.

OR

I. Select the desire row or column**.**

(b)

- Absolute Reference:

An absolute reference 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 one 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 refers to a relative point of reference, is constantly changing and dollar sign ($) is absent in the formula (i.e., when each unit price and quantity are difference 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 use 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)

- To open blank presentation:
  I. Open PowerPoint presentation using 'Run' command (window key + R).
  II. Select the 'Blank Presentation'. It is opened
- Save the Presentation as Lab1.pptx.:
  I. Select the 'File' on Tab bar.
  II. Click on 'Save As' option.
  III. Click on document/Desktop as your choice.
  IV. Type the name 'Lab1.pptx'.
  V. Click the 'Save' button.
- Add a Title to the first slide: the name of your college.
  I. Left click on the 'Click to Add Title' section on the first slide.
  II. Type the name of your college.
- Type your first name and last name in the subtitle section:
  I. Left click on the 'Click to Add Subtitle' section.
  II. Type your first name and last name.
- Add a New slide which has a Title and content.
  I. Select the Home tab.
  II. Click on the dropdown button of the 'New Slide' on toolbar.

III. Select the slide having 'Title and Content'. It is added.

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

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

Ans:-

- Title slide and bullet list:
  - **I.** Open PowerPoint Presentation.
  - **II.** Select the Home tab.
  - **III.** Click at the dropdown button on 'New Slide' at toolbar.
  - **IV.** Select the slide having Title slide and Bullet list.
- Inserting Excel sheet:
  - **I.** Open the slide where you want to insert the Excel Sheet.
  - **II.** Select the 'Insert tab'. And click on 'Object' on tool bar.
  - **III.** Select the 'Microsoft Excel Worksheet' object type.
  - **IV.** Click the 'OK' button.
- ClipArt and Text:
  - **I.** Select the Insert Tab.
  - **II.** Select the 'Pictures' or 'Online pictures' on tool bar.
  - **III.** Choose the appropriate art for the topic.
  - **IV.** Click on the 'Insert' button.
- Slide show effects:
  - **I.** Select 'Design Tab' for Themes, Variants and Slide size.
  - **II.** 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?

Machine language	High level language
1. A computer programming language consisting 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 data types of C programming language are:

Char: the most basic data type in C.it store a single character and requires a single bite of memory in almost all compilers.

Int: as the name suggests, 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 (number 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+6) +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 block of statements, 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; expression3)
{
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;
	while (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) **IMS Ghaziabad**
b) **IMS Ghaziabad**
IMS Ghaziabad
c) **100**