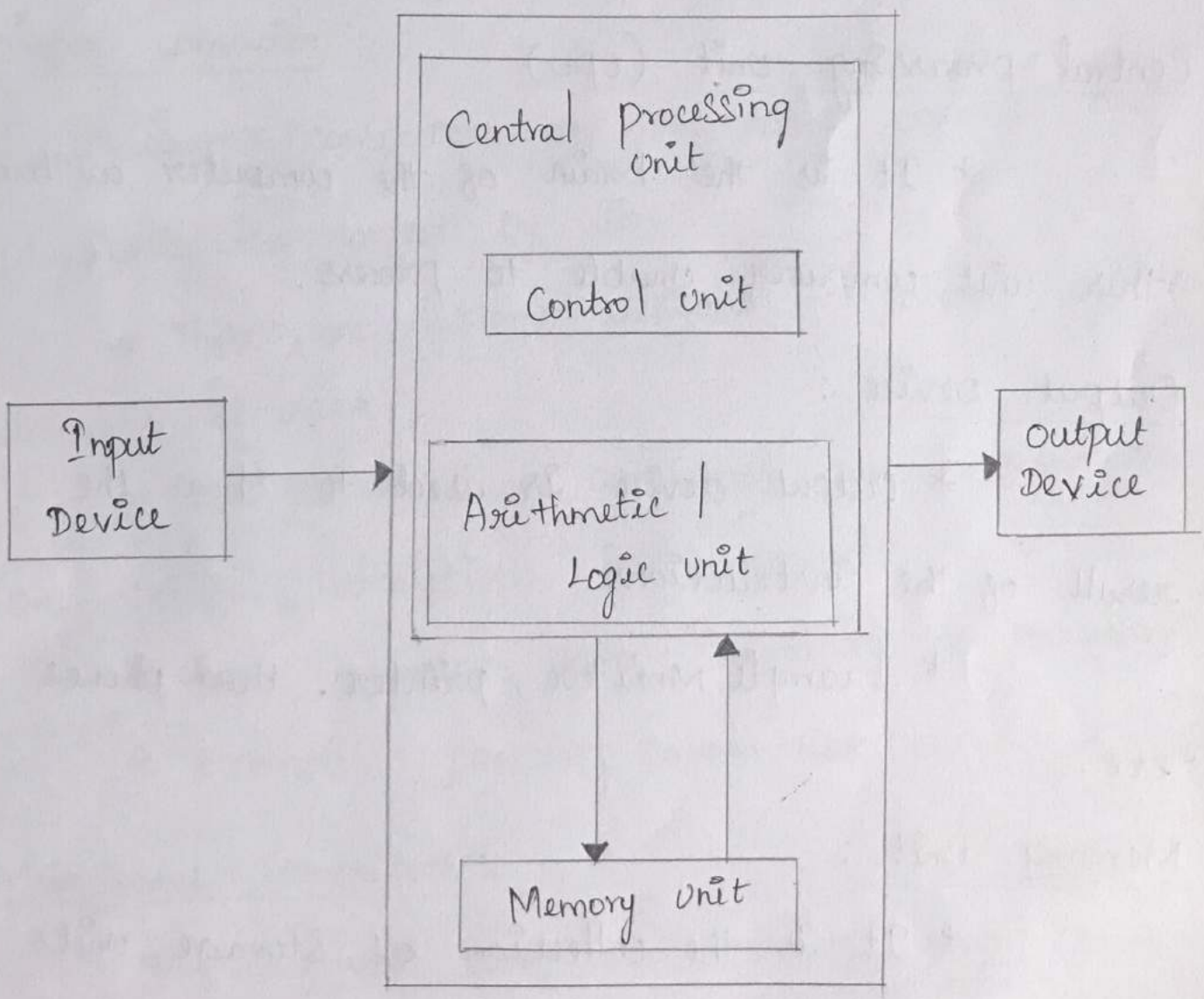
FUNDAMENTALS OF IT & PROGRAMMING

Assignment - 1

Q1. Four fundamental parts of Computer :-

* A computer is a fast system that is organized to accept, store, and process data and produce output results under the direction of a stored program of instruction.



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 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 the instructions.

* Example Monitor, printer, Head phones etc.

Memory unit :

* It is the collection of Storage units or devices together.

* The memory unit stores the binary information in the form of bits.

Q2. Classifications of computers based on size and capacity :-

* Super computers.
* Mainframe computers.
* Mini computers.
* Micro computers.

Super computer :

* Super computers are the most powerful and physically the largest by size.
* These are systems designed to process huge amounts of data.
* The fastest Super computers can perform over one trillion calculations in a second.
* Super computers 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.

* 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:

* Mini computers are much smaller than mainframes.

* Sometimes refferred to as Midrange Server or Midrange computer.

* They are typically larger, more powerful and more expensive than desktop computers.

* Example: Apple ipod, CDC 1604.

Microcomputer:

* Microcomputers are the most frequently used type of computer.

* It is also known as personal Computer (pc).

* A microcomputer is small computer system designed to be used by one person at a time.

* Example: Desktop computers, laptops.

Q3. Computer Generation :-

* Computer Generation terminology is a change in technology a computer is used.

Generations of computers :

1. First Generation.
2. Second Generation.
3. Third Generation.
4. Fourth Generation.
5. Fifth Generation.

First Generation : Vacuum Tubes (1940 - 1956) :

* The first computer systems used Vacuum tubes for circuitry and magnetic drums for memory.
* Computers of this generation consumed a lot of electricity and very expensive to operate.
* First generation computers relied on machine language, the lowest - level programming language understood by computers to perform operations.
* They could only solve one problem at a time.
* Input was based on punched cards and paper tape, and output was displayed on printouts.

Second Generation : Transistors (1956 - 1963) :

* Transistors replaced vacuum tubes in the Second generation of computers.

* 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.

Third Generation : Integrated circuits (1964 - 1971) :

* The development of the integrated circuit was the hallmark of the third generation of computers.

* Computers for the first time became accessible to a mass audience because they were smaller and cheaper than their predecessors.

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.

* In 1981, IBM introduced its first computer for the home user.

* In 1984, Apple introduced the Macintosh.

* Fourth generation computers also covered the development of Graphical User Interface (GUIS), mouse and handheld devices.

* Quantum computation and nanotechnology will radically change the face of computers in year to come.

* The goal of fifth-generation computing is to develop devices that respond to natural language input and are capable of learning and Self-organization.

Q4. Volatile and Non-Volatile Memories :-

Volatile	Non-Volatile
i). Volatile Memory is also called as primary Memory.	i). The Non-Volatile Memory is also known as Secondary Memory.
ii). Volatile Memory is a computer Storage that only maintains its data while the device is powered.	ii). Non-Volatile Memory is a type of computer memory that has the capability to hold saved data even if the power is turned off.
iii). Example : RAM	iii). Example : ROM,

iv). When we are working on a document, it is kept in RAM, and if the computer losses power, your work will be lost.	iv). Hard disk and floppy disk also called as example for non-volatile memory.

Q5. System Software :-

* It is a type of software that is designed to run a computer's hardware and application programs.

* Software like operating system, 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 :-

* Open Source Software (OSS) 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 open source Software.

Q6. a). Create a file in MS-word and Save it file name "yourself :-

1. Click the Start icon.
2. Then point to All programs.
3. Click Microsoft office.
4. click Microsoft Word.
5. Select Blank document and click ok.
6. Otherwise Click the Microsoft office button) File tab.
7. Select New. The New document dialog box appears.

8. Select Blank Document.

9. Enter the text and you can insert paragraph about yourself.

10. Click the Microsoft office button / File tab.

11. Select Save AS - Word Document.

12. Select the location where you want to Save the document using the drop-down menu.

13. Enter a file name "yourself". ~~for~~

14. Click the Save button.

b). Write steps regarding followings :-

➤ 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 Style.
* Left-click the font Style you want to use.
* Then font Style will change in the document.

➤ To change the font Size.

* Its same procedure of font Style changed method and one method is changed.

* At the Second bull line, click on font Size box on the Home tab.

* Another method, click on increase / decrease font Size commands in the pont group on Home tab

➤ To change the font color

* Its also Same method to font Sytle and font Size changed method.

* But its small correction that is

* click on the font color box on the Home tab. The font color menu appears.

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

* Select the text is "need to get IMS's address.

* click on the Text Highlight color in front group on the Home tab.

* Various colors will appears and move your curser over the various colors.

* click on yellow color.

* Then text highlight color will changes in the doument.

Q7. Text formatting :

1. Type the text the following document.

2. Select the text MS Word to modify.

3. Click the font size box and the font size drop-down menu appears.

4. Move the cursor over the various font size

5. Left-click on the font size or

6. Click on increase / decrease font size commands.

7. In the first of the text MS word is selected to modify the color.

8. Click the font color box and move the cursor over the various font colour.

9. If you want to change the colour, click the font color box and move the cursor over the various font colors.

10. Left-click the font color you want to use the color like red, blue, black and etc..

11. We can use bold the text. Select the text you want to modify.

12. Click the Bold command in the Font group or Enter the button key Ctrl + B.

13. If we can use the Italic, underline command, the same Font group is used to modify the text.

14. Click the Italic command or Ctrl + I

15. Click the underline command or Ctrl + U

16. Then text will change in the following document.

17. press Ctrl + S key on keyboard

18. Select the location where you want to Save the document.

19. Enter a name "MS_word" for the document.

20. Click the Save button.

Q8. Equations :-

$X_2 + Y_2 = 30$

$Z^3 + Q^4 = 50$

$A_2 + B^8 = X_2 + Y^8$

1. Select the first line of the following document.

2. Click on the SubScript command on the Home tab.

3. Then the line will change the text as SubScript in the document.

4. And we can change the equation of Second line. in Super Script.

5. Click on the Super Script command on the Home tab.

6. Then it will change the text.

7. If you want use both of the commands in single line, you can select the text that you want to modify the text using both commands.

8. Select Save from the menu.

9. Select the location where you want to save the document.

10. Enter the name "equations" for the document.

11. Click the Save button and finally Save document.

Q9. Text to table :-

1. Select the text you want to convert.
2. Select the insert tab.
3. Click on Table command. A dialog box appears.
4. Click on Convert Text to table, a new dialog box appears.
5. Here Set number of columns 2 and number of rows 3.
6. Click OK. Finally Selected text convert in a table.
7. press Ctrl+S key on Keyboard, a new dialog box appears.
8. Select the location where you want to Save the document.
9. Enter a name 'text_to_table' for the document.
10. Click the Save button.
11. Finally Save the text_to_table document is Saved.

Q10. Insert a table :-

* place your insertion point in the document where you want to insert table.

* Select the Insert tab.

* click the Table command.

* Drag your mouse over the diagram squares to select the number of columns and rows in the table.

* left - click your mouse, and the table appears in the document.

* Enter text into the table.

Q11. Insert a text in MS- excel :-

1. Left - Click a cell to select it. As we Select a cell the cell address appears in the Name Box.

2. Enter the text into the cell using keyboard.

3. press the Tab key to move to the right of the selected cell.

4. Press the Shift key then the Tab key to move to the left of the Selected cell.

5. Use the page up and page down keys to navigate the worksheet.

6. Use the arrow keys.

7. Click the Microsoft office button or file tab.

8. Select Save as

9. Select the location where you want to Save.

10. Enter a name "book1" for the worksheet.

11. Click the Save button.

Q12. i). The Sum of the marks using AutoSum in a range of cells (C2 : C11)

* Select the cell (C2 : C11)

* Select the drop-down arrow next to the AutoSum command on home tab.

* Select Sum or use formula =Sum(C2:C11)

* press the Enter key.

ii). Avarage of the marks in a range of cells (C2:C11)

* Select the cells (C2 : C11)

* Click the drop-down arrow next to the Autosum command.

* Select Average.

iii). Highest Marks in a range of cell (C2:C11)

* Select the cell (C2:C11)

* Select the AutoSum command on Home tab.

* Select Max.

* Then the highest marks in a range of cell (C2:C11) go will appear.

iv). Minimum marks in range of cell (C2:C11)

* Select the cell (C2:C11)

* Select the AutoSum command on Home tab.

* Select Min.

Q13. a).

i). To modify column width of a worksheet :-

* position the cursor over the column line in the column heading, and a double arrow will appear.

* Left-click the mouse, then drage the cursor to right to increase or to left to the decrease the column width.

* Release the mouse button.

* Another way, Left-click the column heading of a column.

* click the format command in the cell group.

* Select column width to enter a specific column measurement.

* Select Autofit column width to adjust the column so all the text will fit.

ii). To modify the row height of a worksheet:-

* position the cursor over the row line.

* Left-click the mouse; then drag the cursor upward to decrease or downward to increase the row height.

* Release the mouse button. OR

* click the format command.

* Select the Row Hight to enter a specific row measurement.

iii). To delete row and columns of a coorksheet:-

* Select the row or column you want to delete.

* click the Delete command.

b). i). Absolute reference and relative reference in formula:-

* Relative reference is formula automatically adjust to new location when the formula is pasted into different cells.

* =F2* C2

* Absolute Reference ; cell reference in a formula always refers to the same cell or cell range and use $ Symbol.

* Formula : =F3* C2.

ii). Cell address :-

* Each rectangles in the worksheet is called a cell.

* Each cell has a name, or a cell address, based on column and row where it is located.

Q14. a). Tools are available to customize our powerpoint presentation:-

* Home : The Home tab holds the cut and paste features, Font and paragraph options, and what

you need to add and organize slides;

* Insert : Click insert to add something to a slide. This includes pictures, shapes, charts, links, text boxes, video and more.

* Design : Add a theme or color scheme, or format the slide background.

* Transitions : Gallery of the possible transitions in transition to slide group.

* Animation : To choreograph the movement of things on your slides.

* Slide show : Set up the way that you want to show your presentation to others.

* Review : Run Spell-check, or compare one presentation with another.

* View : Creation or delivery process.

b). > <u>open a Black presentation</u> :-

* Select office button.

* Click New option. The New presentation appears.

* In the left side of the New presentation window, click installed Templates.

* click a template to Select it.

* click create.

➤ Save the presentation as Lab 1. pptx :-

* Locate and Select the Save command on the Quick Access Toolbar.

* lab 1. pptx is a file name is entered.

* Finally lab1. pptx Saved.

➤ Add a Title to the first Slide : the name of your college :-

* click on the Title placeholder.

* Type the name of your college. That Yadava college text is entered.

➤ Type your first name and last name in the Subtitle Section :-

* click on the Subtitle Section.

* Type the text is Swetha dhanasekaran.

➤ Add a New Slide which has a Title and content :-

* click the New Slide in the Slide group or press Ctrl + M.

Q15. i). Title Slide and bullet list :-

* The Title Slide is the default layout when you open a black presentation in power point.

* It comprises two text place holder :

- The first is title and
- The second for subtitle.

* The Bullet lists to help organize your text or show a sequential process in your power point presentation.

ii). Inserting Excel Sheet :-

* Select the insert tab.

* click the insert tab.

* Click the object command in the Text group and a dialog box will appear.

* Locate and Select the desired Excel file, then click insert.

iii). clip art and Text :-

* clip Art is a collection of media files (images, video, audio, and animation files)

that Microsoft includes with the power point application.

* Select insert > picture > From online.

* In the online pictures dialog box, type words describing the kind of picture you want (such as roses), and then press Enter.

* Then select clipart under the Type Category.

* Select the image you want to insert, then click the insert button.

iv) Slide Show effects :-

* To start the presentation at the first slide, in the Start Slide Show group, click from Beginning.

* For starting the presentation from where you are, click From current Slide.

Part - 2

Q16. 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.	A high-level language is a programming language that enables development of a program in a much more user-friendly programming context.
2. It is reffered to as machine code or object code. Machine language is a collection of binary digits or bits that the computer reads.	High level language as grouped in two categories based on execution model - compiled or interpreted language.
3. A computer cannot directly understand the programming languages used to create computer programs, so the program code must be compiled.	The language is a programming language with strong abstraction about the details of computer in contrast to low-level programming language (Assembly language).
4. Example : 01001000, 01100101, 01101100, 01101100 etc.	Example : C, C++, Java

5. This language makes fast and efficient use of the computer.	They are easy to write, debug and maintain.
6. It requires no translator to translate the code.	It provide higher level of abstraction from machine language.

Q17. Data Types :-

* Data type represent a type of the data which we can process using our computer program.

* It can be numeric, alphanumeric, decimal, etc..

Data types in C :-

* Each data type requires different amounts of memory and has some specific operations which can be performed over it.

1. Char : The most basic data type in C. It stores a single character and requires a single byte of memory in almost all compilers.

2. int : As the name suggests, an int variable is used to store an integer.

3. float : It is used to store decimal numbers (numbers with floating point value).

4. Double : It is used to store decimal numbers (numbers with floating point value but its range of value is high).

Data types in c with range :-

Type	Keyword	Value range which can be represented by this data types.
Character	char	-128 to 127 or 0 to 255
Number	int	-32,768 to 32,767 or -2,147,483,648 to 2,147,483,647
Small number	short	-32,768 to 32,767
long number	long	-2,147,483,648 to 2,147,483,647.
Decimal Number	float	1.2E-38 to 3.4E+38 fill 6 decimal places.

Q18. Find the output :-

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

X = 20/5 * 2 + 30 - 5

X = 4 * 2 + 30 - 5

X = 8 + 30 - 5

. $x = 38 - 15$

$\boxed{x = 33}$

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

$y = 30 - (40 / 10 + 6) + 10$

$y = 30 - 10 + 10$

$y = 20 + 10$

$\boxed{y = 30}$

c). $z = 40 * 2 / 10 - 2 + 10$

$z = 40 * 2 / 10 - 2 + 10$

$z = 80 / 10 - 2 + 10$

$z = 8 - 2 + 10$

$z = 6 + 10$

$\boxed{z = 16}$

Q19. a). <u>If-else Statement Syntax</u> :-

```
if (expression)
 {
   true Block of Statements;
 }
else
 {
   else Block of Statements;
 }
```

c). ~~While~~ loop Syntax :-

```
while (condition)
    Single Statement;
OR
while (condition)
 {
  block of Statements;
 }
```

b). ~~While~~ for loop Syntax :-

```
for (expression 1 ; expression 2 ; expression 3)
 {
  Block of Statements;
 }
```

d). do-while loop Syntax :-

```
do
 {
  Single Statement
OR
  do
   {
    Block of Statements;
   } while (condition);
```

Q20. Find the output :-

a).

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

Output :

IMS Ghaziabad

b).

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

Output :

IMS Ghaziabad
IMS Ghaziabad

c)

```
#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

* ——— * ——— * ——— *