

1 Q - What are the four fundamental parts of computer? 2 Explain it with the help of diagram.

Ans - The four fundamental parts of computer :

- ① Computer Processing unit (C.P.U.)
- ② Memory unit
- ③ Input unit
- ④ Output unit

2 Q - Discuss about the classification of computers based on size and capacity.

Ans on the basis of size there are four types of computer.

- ① Micro Computer
- ② Mini Computer
- ③ Main frame Computer
- ④ Super Computer

Micro Computer - Micro Computer is at the lowest end of the computer range in terms of

Speed and Storage Capacity
It CPU is a Micro first micro computer were built of 8 Bit Microprocessor chips such as PC, Desktop, Laptop, Note Book e.t.c.

② Mini Computer - It is a Medium

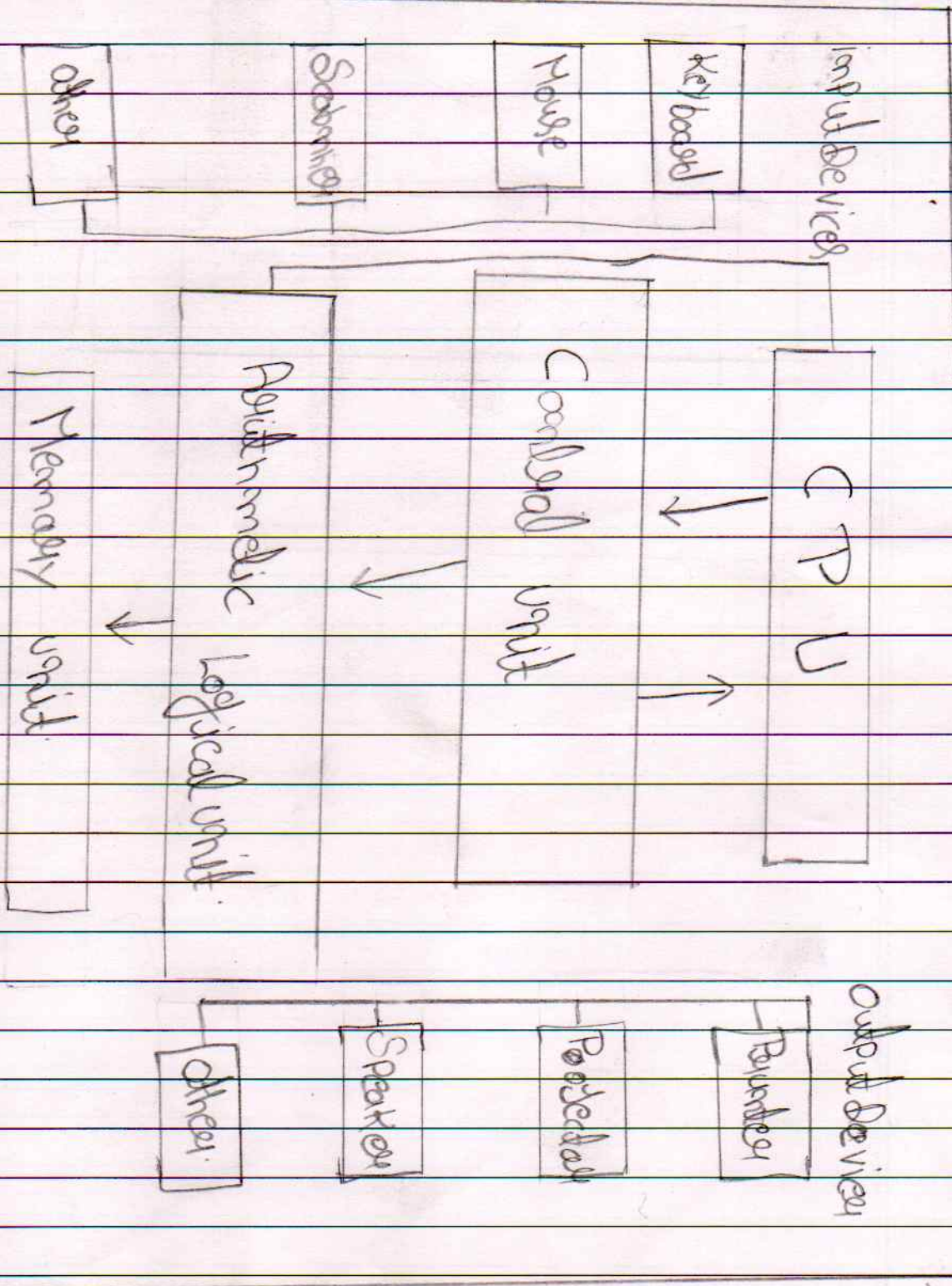
Size of Computer that is a More Powerful than a Micro Computer. It is in fact a scaled Down version of Main frame Computer they are Main used as Departmental Computer in large and Medium size of organization.

③ Main frame Computer - They have large Storage Capacity very high

Speed of Capacity and can store

a large number of information.

They are use of Big Company

PART. - 1

Q1) Super computer : It is a fastest and most expensive computer. It can perform 100 and million instructions per second. These included application electronic engg whether forecasting and Nuclear Energy.

Q2) What is the meaning of computer generation? How many computers generations are defined? What technologies were used?

Ans) 1st Generation : (1940 - 1956)

This generation used vacuum tube technology with Machine language and Magnetic Tape Drum as Main Memory.
Ex : IBM 650, ENIAC, UNIVAC.

IInd Generation :- (1956 - 1963)

In this generation we use transistor Machine language and Magnetic core Memory.
ex - DDP-8, IBM-7090 etc.

IIIrd Generation. (1964 - 1971) :-

In this generation used IC) ex - IBM 360, IBM 370, PDP etc.

IVth Generation (1970 - Present)

In this generation used Micro Process with Semi Conductors Memory ex - Apple, Star 1000 etc.

Vth Generation (Time - future) :-

It is the Based on artificial Intelligence

48. Differentiate between Volatile Non-Volatile memories.

Volatile

Non-Volatile

- | | |
|---|--|
| ① Volatile memory is a type of memory in which data is lost as it is powered off. | ① It is the type of memory in which data remains stored even if it is powered off. |
| ② It is faster than Non-volatile memory. | ② It is slower than volatile. |
| ③ Ram is an ex- of Volatile Ram. | ④ Non-volatile memory generally has more storage capacity. |
| ③ is an ex of Non Volatile. | |
| ④ Volatile Memory generally has less storage capacity. | |

5 Q. Distinguish among system software application software and open source software on the basis of their features.

Ans System Software :- System Software.

Include the program that are de to managing the computer. It call such as operating system, file management and disc operating system. The most important features of system software include

- ① closedness. system
- ② Asset Speed.
- ③ Difficult to Manipulate.
- ④ Written in low level language
- ⑤ Difficult to Design.

* Application Software :- Application

Software that help in automation of the task based on the users input. It can perform by single and multiple

Part - II

16Q- What is the difference between Machine language and high level language.

Machine language	high level language
① It is Machine friendly language	① It is Programmer friendly language.
② It is hard to understand.	It is easy to understand.
③ It is non portable.	It is portable.
④ It language is high Memory Storage.	It language is less Memory Storage.
⑤ It is complex and debug.	It is simple to debug.

17Q- discuss about different data types of C programming language.

Ans-① char.
each variable in C has an associate a data type eg. each data

Teacher's Signature _____

task at the same time and time.
The Application Software is usually
divided into main part.

Custom Made Software.

Open Source Software :- It is.

Computer Software that is released
under a license in which copy
right holder grants uses the right
to use.

Type requires different amount of Memory. Such.

Data type Memory(bytes) Range

① Short-int	2	- 32,768 to 32,767
unsigned Short-int	2	0 to 65535
unsigned int	4	0 to 4,294,967,295
int	4	- 2,147,483,648 to 2,147,483,647
long int	4	2,147,483,648 to 2,147,483,647
unsigned long int	4	0 to 4,294,967,295
long long int	8	-(2 ⁶³) to (2 ⁶³)-1
unsigned long long int	8	0 to 2 ⁶⁴ -1
signed char	1	- 128 to 127
unsigned char	1	0 to 255

float 4

double 8

long double 16

18Q Find the output of the following Expressions.

$$\begin{aligned}
 \text{(a)} \quad x &= 20/5 * 2 + 30 - 5 \\
 &= 20/5 \times 2 + 30 - 5 \\
 &= 4 \times 2 + 30 - 5 \\
 &= 8 + 30 - 5 \\
 &= 38 - 5 \\
 &= 33
 \end{aligned}$$

$$\begin{aligned}
 \text{(b)} \quad y &= 30 - (40/10 + 6) + 10 \\
 &= 30 - \frac{40}{10} - 6 + 10 \\
 &= 26 - 6 + 10 \\
 &= 20 + 10 \\
 &= 30
 \end{aligned}$$

$$\begin{aligned}
 \text{(c)} \quad z &= \frac{40 \times 29}{105} - 2 + 10 \\
 &= \frac{408}{5} - 2 + 10 \\
 &= \frac{408}{5} - 6 + 10 \\
 &= \frac{408}{5} + 4
 \end{aligned}$$

Teacher's Signature _____

190 Describe the Syntax of the following Statements.

Ans: a If - else Statement :-

An if Statement can be follow true and false value an if Statement can be followed else. Statement which Execute when boolean expression is false.

If (Boolean Expression)

Print f (" exp _ _ _ _ ")

Else

Print f (" _ _ _ _ _ false

⑤ for loop :-

A for loop is a control Statement which allow us to write a loop that is executed a specific number of time.

for (i = 0, i <= 10, i++)

{
 Print (" Statement")
}

(5) While loop :- While loop are used in situation where we do not know the no. of loop execution is terminated the basis of test expression.

{
 // statements
 update expression
}

(d) Do while loop :- In do while execution loop also the loop is terminated on the basis of test condition.

{
 // statements
 update - Expression
 while (test Expression);
}

Q-1 Write a program in C to display your name and address on computer screen.

Ans: #include <stdio.h>
 void main ()
 {
 printf("I'm Sheelesh Kumar Sharma")
 printf("In IMS Ghaziabad");
 }

Output

I'm Sheelesh Kumar Sharma IMS Ghaziabad

Q-2 Write a program in C to add two integers.

Ans: #include <stdio.h>
 void main ()
 {
 int n1, n2, sum; printf("Enter two integer
 numbers: "); scanf("%d", &n1); scanf("%d", &n2);
 sum = n1 + n2;
 printf("Sum = %d", sum);
 }

Output

Enter two integer numbers: 10 20
 Sum = 30

Q-3 Write a program in C to compute the value of x in this expression:

$$x = 20 / (8 - 4) * 8 - 2.$$

Ans

```
#include <stdio.h>
void main () {
    int x;
    x = 20 / (8 - 4) * 8 - 2;
    printf ("x = %d", x);
}
```

output:

x = 38

Q-4 Write a program in C to compute a quotient and remainder

Ans

```
#include <stdio.h>
void main () {
    int dividend, divisor, quotient, remainder;
    printf ("Enter dividend: ");
    scanf ("%d", &dividend);
```

```
    printf ("Enter divisor: ");
```

```
    quotient = dividend / divisor;
    remainder = dividend % divisor;
    printf ("Quotient = %d", quotient);
    printf ("Remainder = %d", remainder);
}
```


output

Enter dividend : 20
 Enter divisor : 3
 Quotient = 6
 Remainder = 2

Q-5 Write a Program in C to compute a Quotient and remainder.

Ans - Swap numbers using temporary variable

```
#include <stdio.h>
void main () {
    int h1, h2, temp;
    h1 = 10;
    h2 = 20;

    temp = h1;
    h1 = h2;
    h2 = temp;

    printf ("1) After Swapping, h1 Number = %d\n", h1);
    printf ("2) After Swapping, h2 Number = %d\n", h2);
}
```

Output.

After Swapping, h1 Number = 20
 After Swapping, h2 Number = 10

In the above Program the temp variable is assigned the value of the h1 variable.

Then, the value of the h1 variable is assigned to the h2 variable. Finally the temp (which holds the initial value of h1) is assigned to h2. This completes the swapping process.

Swap numbers without using temporary Variables.

```
#include <stdio.h>
void main () {
```

```
int h1, h2;
```

```
h1 = 40;
```

```
h2 = 10;
```

```
printf (" /n After Swapping, h1 Number = %d", h1);
```

```
printf (" /n After Swapping, h2 Number = %d", h2);
```

Output:

After Swapping, h1 Number = 10
After Swapping, h2 Number = 40

Q-6 Write a program to find the largest of three numbers.

Ans

```
# include < Stdio.h >
```

```
void main () {
```

```
int h1, h2, h3, largest;
```

```
printf ("Enter three different numbers: ");
```

```
scanf ("%d %d %d", &h1, &h2, &h3);
```

```
if (h1 > h2)
```

```
largest = h1;
```

```
else
```

```
largest = h2;
```

```
if (h3 > largest) largest = h3;
```

```
printf ("Largest number is %d", largest);
```

Output:

Enter three numbers : 30 20 40
Largest number is 40

Q-7 Write a program to check whether a integer number is even or odd.

Ans

```
# include < Stdio.h >
```

```
void main () {
```


int num;

printf (" %d " , num);
if (num % 2 == 0)

printf (" Even number "); else
printf (" odd number ");

Output:

Enter a number : 12
Even number.

Output 2:

Enter a number : 11

odd number

Q-8 Write a program to display table
of any integer number

Ans #include <stdio.h>
void main ()

{ int n, i;

printf (" Enter an integer : ");

scanf ("%d" , &n);

For $(i = 1, i \leq 10; ++i)$ &
 Print $(i \% d * \% d = \% d/h, h, i,$
 $* i),$

Output

Enter an integer : 9

$$9 * 1 = 9$$

$$9 * 2 = 18$$

$$9 * 3 = 27$$

$$9 * 4 = 36$$

$$9 * 5 = 45$$

$$9 * 6 = 54$$

$$9 * 7 = 63$$

$$9 * 8 = 72$$

$$9 * 9 = 81$$

$$9 * 10 = 90$$

Q.9 Write a program to display first ten terms of Fibonacci Sequence.

Ans. ~~The~~ The Fibonacci Sequence 0, 1, 2, 3, 5, 8, 13, 21, 34,

The Fibonacci Sequence is a sequence where the next term is the sum of the previous two terms.

* The first two terms of the fibonacci sequence are 0 followed by 1
 # include <stdio.h>

int i, h, d1 = 0, d2 = 1, next Term
 Print ("Enter the num bs of terms")

scanf ("%d", &h);

Print f ("fibonacci Series: ");

for (i=1; i<=h; ++i) {

Print f ("%d", d1);

Next Term = d1 + d2;

d1 = d2;

d2 = next Term;

}

output

Enter the number of term S: 10
 fibonacci Series: 0, 1, 2, 3, 5, 8, 13,
 21, 34,

Q-10

Write a program to calculate the sum of digits of integer number

ans

```
#include <stdio.h>
void main () {
    int n, sum = 0, digit;
    printf ("Enter an integer: ");
    scanf ("%d", &n);
    while (h != 0) {
        digit = h % 10;
        sum = sum + digit;
        h = h / 10;
    }
    printf ("Sum of the digit S = %d", sum);
}
```

Output

Enter an integer : 142
Sum of the digits = 7

The program takes an integer input from the user 142. The while loop is used until $h \neq 0$ is false. In each iteration of the loop, each digit (using $\text{digit} = h \% 10$) is calculated and the value of h is reduced by 10 times ($h = h / 10$). Inside the loop, the sum of

digits of an integer number is
computed using $sum = sum \cdot 10 + digit$

Q11 Write a program to reverse an
integer number.

Ans

```
#include <stdio.h>
void main() {
    int n, rev = 0, digit;
    printf("Enter an integer: ");
    scanf("%d", &n);
    while (n != 0) {
        digit = n % 10;
        rev = rev * 10 + digit;
        n = n / 10;
    }
    printf("Reversed number = %d", rev);
}
```

Output

Enter an integer : 345
Reversed number = 543

the program takes an integer input from the user & the while loop is used until $n \neq 0$ is false. In each iteration of the loop the digit ($\text{digit} = n \% 10$) when n is divided by 10 is calculated and the value of n is reduced by 10 times ($n = n / 10$). Inside the loop the reversed number is computed using: $\text{rev} = \text{rev} * 10 + \text{digit}$

Q12

Write a program to calculate factors of a positive integer

Ans

```
#include <stdio.h>
void main () {
    int num = 1;
    printf ("Enter a positive integer: ");
    scanf ("%d", &num);
    printf ("Factors of %d are:", num);
    for (i = 1; i <= num; ++i)
        if (num % i == 0)
            printf ("%d ", i);
```

Output -

Enter a positive integer: 10
Factors of 10 are: 1 2 5 10