Dipika Sharma

Part - 1

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

Ans The four fundamental parts of computer are -

1) Central processing unit (CPU)
2) Memory Unit
3) Input Unit
4) Output Unit

Q.2 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) Mainframe Computer
4) Super Computer

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1) Micro Computer => Micro Computer is at the lowest end of the computer range in terms of speed and storage capacity. Its CPU is a micro processor. The first micro computers were built of 8 bits micro processor chips such as PC, Desktop, Laptop, Notbook, etc.

2) Mini Computer => It is medium size a computer that is more powerful than a micro computer. It is in fact a scaled down version of mainframe computer. They are mainly used as departmental computer in large and medium size organization.

3) Mainframe Computer => They have large storage capacity very high speed of processing and can support a large

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number of terminals for use. They are used by big company, bank etc.

4) Super Computer ⇒ It is faster and most expensive computer. It can perform 100 of million instruction per second. These included application electronic petrolium engineering, whether forecasting, medicines and nuclear energy research.

Q.3 What is the meaning of computer generation? How many computer Gendon generations are defined? What technological were/are used?

Ans 1) First generation (1940-1956) ⇒ These generation used vaccum tube technology with machine language and magnetic tape, drum are mean main memory

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ex- IBM650, ENIAC, UNIVAC1.

2) Second generation => (1956-1963)
In this generation use transistors, machine language and magnetic core memory.
ex- PDP-8, IBM-7090 etc.

3) third generation (1964-1971) => In this generation used IC. ex- IBM 360, IBM370, PDP11 etc.

4) Fourth generation (1971-present)
In this generation used microprocessor with semi conductor memory. ex- apple, star 1000 etc.

5) Fifth generation (till and future)
It is based on artificial intelligence.

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Q.4 Differentiate between Volatile & Non-Volatile memories.

Ans

| | Volatile | Non-Volatile |
|---|---|---|
| 1) | Volatile memory is the type of memory in which data is lost as it is powered off. | Non-Volatile memory is the type of memory in which data remain stored even if it is powered off. |
| 2) | It is faster than non-Volatile memory | It is slower than Volatile memory. |
| 3) | RAM is an example of Volatile. | ROM is an example of non-Volatile. |
| 4) | Volatile memory generally has less storage capacity | Non-Volatile memory generally has more storage memory |

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

Ans System software ⇒ System soft
·re includes the prog
that are dedicated to managing the computer itself. such as operating system, file management and dis operating system The most important features o system software includ-

1) closeness to the system.
2) fast speed.
3) difficult to manipute.
4) written in low level langua
5) difficult to designed.

Application Software ⇒ Application software that help in the automation of the task based on the users input. It ca

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perform ~~sig~~ single and multiple task at the same period of time. the application software ~~to~~ is broadly divided into main parts. =>

1) general purpose
2) custom made software

Open source software => It is computer software that is realesed under a lisence in which copyright holder grant users the right to use,

## Part - 2

Q.16 What is the difference between Machine Language and High Level Language.?

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| Ans | Machine Language | High Level Langua |
|---|---|---|
| 1) | It is machine friendly languge. | It is programmer friendly language |
| 2) | It is tuff to understand. | It is easy to understand. |
| 3) | It is non-portable | It is portable. |
| 4) | It languages is high memory storage | It is language is less memory storage |
| 5) | It is complex to debug. | It is simple to debug. |

Q.17 Discuss about different data type of C programming Language.?

Ans.1) Each varible in C has an associa data types. each data type requires differ amount of memory. such as -

| | Data type | Memory | Range |
|---|---|---|---|
| 1) | Short Int | 2 | -32,768 to 32,7 |

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| | | | |
|---|---|---|---|
| 2) | unsigned short int | 2 | 0 to 65,535 |
| 3) | unsigned int | 4 | 0 to 4,294,967,295 |
| 4) | int | 4 | -2,147,483,648 to 2,147,483,647 |
| 5) | long int | 4 | -2,147,483,648 to 2,147,483,647 |
| 6) | unsigned long int | 4 | 0 to 4,294,967,295 |
| 7) | long long int | 8 | -(2^63) to (2^63)-1 |
| 8) | unsigned long long int | 8 | 0 to 18,446,744,073,709,551,615 |
| 9) | signed char | 1 | -128 to 127 |
| 10) | unsigned char | 1 | 0 to 255 |

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Q.18 Find the output of the following expression -

a) $X = 20/5 \times 2 + 30 - 5$

$= 4 \times 2 + 30 - 5$

$= 8 + 30 - 5$

$= 38 - 5$

$= 33$

b) $Y = 30 - (40/10 + 6) + 10 = 30 - \frac{40}{10} - 6 + 10$

$= 30 - (4 + 6) + 10$

$= 26 - 6 + 10$

$= 20 + 10$

$= 30$

c) $Z = 40 \times 2/10 - 2 + 10$

$= 20 \times 2 / 10 - 2 + 10$

$= 8 - 2 + 10$

$= 18 - 2 = 16$

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Q-19 Describe the syntax of the following statements -

Ans a) If - else statement

An if statement can be follow true and false value and if statement can be followed an optional else statement which excute, when bulion expression is false.

Ex-
```
if (bulion expression)
{
    Printf(" exp... ")
else
{ Printf(" .... false")
}
```

b) for loop

A for loop is repeatation control structure which allow us to write a loop that is excuted a specific numbers of times.

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Q.1 Write a programme in ~~in~~ C to display your name and address on computer screen?

Ans -
```
#include <stdio.h>
void main(){
    printf("\n Dr. Sheelesh Kumar Sh
printf("\n IMS Ghaziabad");
}
```

Output

Dr Sheelesh Kumar Sharma
IMS Ghaziabad

Q.2 Write a program in C to add two integer numbers.

Ans -
```
#include <stdio.h>
void main(){
int n1, n2, sum;
printf("Enter two integer number
scanf ("Enter two
scanf ("%d", &n1, &2);
```

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```
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

$x = 20/(8-4) \times 8 - 2$

Ans-

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

Output

x = 38

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

Ans

```
# include <stdio.h>
  void main () {
int dividend, divisor, quotient, remai
printf("Enter dividend:");
scanf("%d", & dividend);
printf("Enter divisor");
scanf("%d", & divisor);
quotient = dividend / divisor;
remainder = dividend % divisor;
printf("Quotient = %d\n", quotient);
printf("Remainder = %d", remainder)
}
```

Output

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

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Q.5 Write a program in C to swap the value of two integer numbers.

Ans- Swap numbers using temporary variable

```
#include <stdio.h>
void main (){
int n1, n2, temp;
n1= 10;
n2 = 20;
temp = n1;
n1 = n2;
n2 = temp;
printf ("\n After swapping, n1 Number
= %d", n1);
printf("\n After swapping, n2 Number
= %d", n2);
}
```

Output

After swapping, n1 Number = 20
After swapping, n2 Number = 10

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3

Output

Enter an integer: 142
Sum of the digits = 7

This program takes an integer input from the user 142. The while loop is used until n!=0 is false. In each iteration of the loop, each digit (using digit = n%10) when n is divided by 10 is ~~to~~ calculated and the value of n is reduced by 10 times (n=n/10). Inside the loop, the sum of digits of an integer number is computed using sum = sum + digit.

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Q.11 Write a program to reverse an integer number.

Ans
```
#include <stdio.h>
void main(){
int n, rev = 0, digit;
printf("Reversed number = %d", rev);
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

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This program takes an integer input from the user 345. The while loop is used until n! = 0 is false. In each iteratio of the loop, the digit (digit = n% when n is divided by 10 is calcul and the value of n is reduce by 10 times (n = n/10). Inside the loop, the reversed number is computed using: rev = rev * 10 + dig

Q.12 Write a program to calculate fact of a positive integer.

Ans

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