C- PROGRAMMING

1. **Who developed C Programming language and when?**
   Dennis M. Ritchie developed C Programming in the early 1970s at Bell Laboratories (Now AT & T)

2. **Explain the functions of "char" in C Program.**
   The char data type holds a single alphanumeric value at a time. The char type can hold a one byte binary number, a single alphanumeric or special character, or each bit has its own individual value.

3. **What are floating point (float) types?**
   This data types holds the numbers with decimal points (floating point value). By default data type has 6-digits of precision. The decimal points can occur anywhere within the 6-digits. Floating point objects can hold very large and small values that are beyond the range of its data type.

4. **What is an assignment Operator?**
   Before looking into the other operators, it's necessary to discuss the assignment operator i.e. equal to(=). It is the most common operator which is used in C language. As per the name, assignment operator is used to assign a value to a variable.

5. **What is the use of comma Operator?**
   The Comma Operator is used to string together several expressions. The expression on the right side becomes the value of the total comma separated expression. This will be clearer with following output:

   ```
   #include<stdio.h>
   Void main ()
   {
   int a,b;    /*variable declaration*/
   a= (b=5,b+2); /*variable get assigned */
   printf("\n a is %d and b is %d",a,b); /*if the test returns true*/
   }
   ```

6. **Write short note on "Nesting if ………. Else statement?**
   While the IF construct is used to specify some action or set of actions when some condition is met, the IF……… ELSE construct allows us to even specify some action or set of actions if the condition is not met.

7. **Where do you usually used "the for Loop"?**
   The FOR LOOP statement is very useful looping construct . In C, FOR loop is the most commonly used
   looping constructs which offers an initialization part, an expression evaluation for terminating loop, and part to prepare for the next iteration of the loop.

8. What is an operator?

Operator is a symbol n which is used to specify some action which has to be perform on some set of data called operands .In C, There are each set of operators to specify the data manipulation actions Operands may be any value, constant variable etc.

9. What is a structure ?

A structure is a collection of simple variables. The structure can have variables of different types . The collective information about customer is called structure.

10. Explian the history of C programming Language and it advantages.

The C Language was developed at Bell Laboratories (AT& T)in the early 1970s by Dennis M. Ritchie. The need behind the invention of C was a high level language which would be suitable for writing an operating system, which would manage the I/O device, allocates its storage and schedules the running of other programs.

Before C,there was a language called BCPL (Basic combined programming language), which was the most popular language at that time . Ken Thompson ,another Bell Laboratories system engineer dubbed the BCPL into B languge.After some time when the language was modified and improved to its present state it was named as C.Fortunately , B and C are also in alphabetical order . The first C which was developed by Dennis Ritchie is currently known as K&RC.In 1978, C became the most popular programming language.

In recognition of C's growing use the ANSI(American National Standard Institute) has established a committee in 1993, called C's house of quirks , conflicts and ambiguities and added some selected features based on the suggestion which they received during the evaluation period.

11. Explain about variables?

A variable is any entity that can take on different value. Anything that can vary can be considered a variable . For instance, age can be considered a variable because age can take different value for different people or for the same person at different time . similarly, country can be considered a variable because a person's country can be assigned a value.

Let us considered memory as a box containing many inner divided blocks as shown in the slide. each block has a separate address , using which data can be stored into it, as well as accessed from it. However instead of numbering   memory spaces by these numerical addresses, a name can be used , each of these named   locations in memory is called a variable. Therefore, a simple statement like a=15 allocates a space in memory which can be accessed by the name 'a' and stores 15 in it.

12. Explain about local, Global and External variable.

Local Variable : These variables are declared in the function definition . We can't use these variable outside the function.

Example: void main( )

```
{
    int a, b;
    ……………
}
```

Global variables: These variables are declared outside from the 'main( )'. We can use these variables anywhere in the program.

Example :int x,y;

```
        Main ( )
```

13. what are Arithmetic operators?

These types of operators are used to perform general mathematical functions such as add, subtract, multiply or divide. Further we may classify the arithmetic operators into two categories:-

(a) Binary Operations   (b) Unary Operators

Binary operators are those types of operators which require two operands .Whereas, unary operators work on single operand.

Operator	Description	Action performed	Order of execution	Example
+	Add	Add two operands	4	X+Y
-	Subtract	Subtract Operands2 from Operands1	5	X-Y
*	Multiply	Multiply Operands1 with Operand2	1	X*Y
/	Divide	Divide Operand1 with Operand2	2	X/Y
%	Modulus	Return the remainder after dividing Operand1 with operand2	3	X%Y

14.what is pointer?

Pointer is a special feature included in C language which make C a very powerful programming language .It is a special type of variable which contains the address of another variable. If one variable containing the address of another variable , the first variable is said to be pointer to the second variable. Consider the following example:

Int a=300/* Suppose a is stored in memory at 2000 location*/

Int*p; /* Suppose a is stored in memory at 3000 location*/

P=&a;   /* Now p store the address of variable a i.e 2000*/

Pointers can point to variables of other fundamental data type's variables like int, char, or double or data collection like arrays and structures.

15.what is strcpy and strncat?

Strcpy: this function is used in copying of one string to another string.

        The syntax of the function is:

        Strcpy (S1, S2)

Where,

S1 refers to the first string

And S2 refers to the second string

To understand clearly, consider the following C program:

```
/*program to copy one string to another.*/
#inside<stdio.h>
Void main()
{
Char s1[1],s2[10];
Printf("\n enter a string for s1:");
Gets(s1);
Printf(:\n the value of S1 is %", S1);
Strcpy(s2,s1);
Printf("\n the value of S2 is %",s2);
}
```

The output of the above program will look like:

      Enter a string for S1: Rakesh

      The value of S1 is Rakesh

      The value of S2 is Rakesh

Strcat: This function is used for concatenating two strings. The syntax of the function is:

Strcat(s1,s2)

Where,

S1 refers Madhya to the first string and s2 refers to PRADESH to the second string.

Example: strcat(s1,s2);

Printf(%',s1) MADHYA PRADESH.