**TI preparation**

1. When was C language developed?

ANS = in the early 1970s

2. Who is the founder of C language?

ANS = Dennis Ritchie

3. Why is C called a mid-level programming language?

ANS = C has the features of both assembly level

i.e. low-level languages and higher level languages.

So that's why C is generally called as a middle-level Language.

4. Why is C known as a mother language?

ANS = C programming is considered as the base for other programming languages,

that is why it is known as mother language.

5. What is C language?

ANS = C is a general-purpose, procedural computer programming language supporting structured

Programming, lexical variable scope, and recursion, with a static type system.

6. What is the use of the function in C?

ANS = By using functions, we can avoid rewriting same logic/code again and again in a program.

We can call C functions any number of times in a program and from any place in a program.

We can track a large C program easily when it is divided into multiple functions.

Reusability is the main achievement of C functions.

7. What is the use of a static variable in C?

ANS = Static variables have a property of preserving their value even after they are out of their

scope Hence, static variables preserve their previous value in their previous scope and are

not initialized again in the new scope

8. What is the difference between the local variable and global variable in C?

ANS = The main difference between Global and local variables is that global variables can be

accessed globally in the entire program, whereas local variables can be accessed only within the function or block in which they are defined.

9. What is the use of printf() and scanf() functions?

ANS = The printf() and scanf() functions are used for input and output in C language.

Both functions are inbuilt library functions, defined in stdio. h (header file).

10. What are the features of the C language?

ANS = C is the widely used language. It provides many features that are given below.

1.Simple

2.Machine Independent or Portable

3.Mid-level programming language

4.structured programming language

5.Rich Library

6.Memory Management

7.Fast Speed

8.Pointers

9.Recursion

10.Extensible

11. What is the usage of the pointer in C?

ANS = The Pointer in C, is a variable that stores address of another variable. A pointer can also

Be used to refer to another pointer function. A pointer can be incremented/decremented,

i.e., to point to the next/ previous memory location.

The purpose of pointer is to save memory space and achieve faster execution time

12. What is a pointer in C?

ANS = Pointer is a variable that holds a memory address of another variable of same type.

13. What is an array in C?

ANS = An array is a collection of data items, all of the same type, accessed using a common name

14. What is recursion in C?

ANS = When a function calls itself, and this process is known as recursion. The function that calls

itself is known as a recursive function.

Recursive function comes in two phases:

1.Winding phase

Winding phase: When the recursive function calls itself, and this phase ends when the condition is reached.

2.Unwinding phase: Unwinding phase starts when the condition is reached, and the control returns to the original call.

15. What is the difference between call by value and call by reference in C?

ANS = In Call by value : a copy of the variable is passed whereas in Call by reference, a variable

itself is passed. In Call by value, actual and formal arguments will be created in different

memory locations

in Call by reference : actual and formal arguments will be created in the same memory

location.

16. What is static memory allocation?

ANS = The final size of a variable is decided before running the program, it will be called as

static memory allocation.

Static variable defines in one block of allocated space, of a fixed size. Once it is allocated, it can never be freed.

Memory is allocated for the declared variable in the program.

The address can be obtained by using ‘&’ operator and can be assigned to a pointer.

The memory is allocated during compile time.

It uses stack for maintaining the static allocation of memory.

In this allocation, once the memory is allocated, the memory size cannot change.

It is less efficient.

17. What is pointer to pointer in C?

ANS = A pointer which store the address(reference) of another pointer is known as pointer to

pointer.

18. What is dangling pointer in C?

ANS = Dangling pointers arise when an object is deleted or de-allocated, without modifying the

value of the pointer, so that the pointer still points to the memory location of the

de-allocated memory. In short, a pointer pointing to a non-existing memory location is

called a dangling pointer.

19. What is a far pointer in C?

ANS = A pointer which can access all the 16 segments (whole residence memory) of RAM is

known as far pointer. A far pointer is a 32-bit pointer that obtains information outside the

memory in a given section

20. What is a NULL pointer in C?

ANS = A pointer that doesn't refer to any address of value but NULL is known as a NULL pointer.

When we assign a '0' value to a pointer of any type, then it becomes a Null pointer

21. What is a union?

ANS = Union is an user defined datatype in C programming language. It is a collection of variables of different datatypes in the same memory location. We can define a union with many members, but at a given point of time only one member can contain a value.

22. What is the structure?

ANS = A structure is a key word that create user defined data type in C/C++. A structure creates a data type that can be used to group items of possibly different types into a single type.

23. What is the difference between malloc() and calloc()?

ANS = malloc() and calloc() functions are used for dynamic memory allocation in the C programming language. The main difference between the malloc() and calloc() is that calloc() always requires two arguments and malloc() requires only one.

What is malloc()?

The malloc is also known as the memory allocation function. malloc() dynamically allocates a large block of memory with a specific size. It returns a void type pointer and is cast into any form.What is calloc()?

The calloc() function allocates a specific amount of memory and initializes it to zero. The function can be cast to the desired type when it returns to a void pointer to the memory location

24. What functions are used for dynamic memory allocation in C language?

ANS = The C malloc() function stands for memory allocation. It is a function which is used to allocate a block of memory dynamically. It reserves memory space of specified size and returns the null pointer pointing to the memory location

25. What is dynamic memory allocation?

ANS = Dynamic memory allocation is the process of assigning the memory space during the execution time or the run time.

26. What is command line argument?

ANS = Command line arguments are nothing but simply arguments that are specified after the name of the program in the system's command line, and these argument values are passed on to your program during program execution

27. What is a token?

ANS = A token is the smallest unit used in a c rogram. Each and every punctuation and word that you come across in a C program is token. A compiler breaks a program into tokens and then proceeds ahead to the next stages used in the compilation process.

28. Can we compile a program without main() function?

ANS = We can write c program without using main() function. To do so, we need to use #define preprocessor directive.

Let's see a simple program to print "hello" without main() function.

#include<stdio.h>

#define start main

void start() {

printf("Hello"); } //OUTPUT = Hello

29. What is the purpose of sprintf() function?

ANS = In C programming language, it is a file handling function that is used to send formatted output to the string. Instead of printing on console, sprintf() function stores the output on char buffer that is specified in sprintf.

30. What is an auto keyword in C?

ANS = Auto is a storage class/ keyword in C Programming language which is used to declare a local variable. A local variable is a variable which is accessed only within a function, memory is allocated to the variable automatically on entering the function and is freed on leaving the function.