**Short Q/A**

**1- Preprocessor directive?**

ANS-(Before a C program is compiled in a compiler, source code is processed by a program called preprocessor. This process is called preprocessing.

Commands used in preprocessor are called preprocessor directives and they begin with “#” symbol.)

**2-Three rules of writing an identifier in c program?**

ANS-(The rules for naming identifiers are as follows –

Identifier names are unique.

Cannot use a keyword as identifiers.

Identifier has to begin with­­ a letter or underscore (\_).

It should not contain white space.)

**3-Difference b/w for and while loop?**

Parameter of Comparison: **For loop** **While loop**

Command The structure of for loop is –

For(initial condition; number of iterations){//body of the loop } Structure of while loop is-

While(condition){statements;//body}

**For Loop** **While Loop**

Iterations: Iterates for a preset number of times. Iterates till a condition is met.

Condition: In the absence of a condition, the loop iterates for an infinite number of times till it reaches break command. In the absence of a condition, while loop shows an error.

Initialization: Initialization in for loop is done only once when the program starts. Initialization is done every time the loop is iterated.

Use Used to obtain the result only when the number of iterations is known. Used to satisfy the condition when the number of iterations is unknown

**4-Primitive data types and explain one?**

ANS-(A data type in a programming language collects data with its values having predefined characteristics such as integers and) characters.explain int???

**5-Difference b/w prefix and postfix operators?**

Comparison between Prefix and Postfix Operators:

Prefix Operators

Postfix Operators

Location

Added before the operand

Added after the operand

Related to

Increment (++) and decrement (--) operators

Used in

Imperative programming languages such as Java and C-like languages, especially C++

**6-Fatal errors?**

ANS-(In computing, a fatal exception error or fatal error is an error that causes a program to abort and may therefore return the user to the operating system. When this happens, data that the program was processing may be lost.)

**7-Difference b/w prototype and definition of a function?**

ANS-(Function Prototype vs Function Definition in C

The function prototype specifies the function name, return type, parameters but omits the function body. The function definition specifies the function name, return type; parameters include a function body.

Implementation

(The function prototype does not have the function implementation. The function definition has the function implementation.)

**8-Purpose of getch()?**

ANS-(We use a getch() function in a C/ C++ program to hold the output screen for some time until the user passes a key from the keyboard to exit the console screen. Using getch() function, we can hide the input character provided by the users in the ATM PIN, password, etc. Syntax: int getch(void); )

**9-Difference b/w 1-D and 2-D array?**

ANS-(The main difference between 1D and 2D array is that the 1D array represents multiple data items as a list while 2D array represents multiple data items as a table consisting of rows and columns. A variable is a memory location to store data of a specific type.)

**10-Pointer?**

ANS-(A pointer is a variable that stores a memory address. Like all other variables, it also has a name, has to be declared, and occupies some spaces in memory. It is called a pointer because it points to a particular.)

**11-Names two escape sequence and their functions?**

**\*(**\n is a escape sequence and used for go to the next line.)

**\*(**\t is a escape sequence and use for more spaces.)

**12-Give one example of implicit and explicit typecasting?**

**13-Scope and lifetime of static variable?**

**14-Difference between while and do while loop?**

**15-Define an int variable and pointer to int In a single statement?**

**16-Write a prototype function that passes an int value, an int reference and return double value?**

**17-What is variable? How to declare legal variable?**

**Ans-**(A variable is a name provided to a storage space that will be used by our programs.

The range of values that can be accommodated within that memory and the set of operations can be applied to the variable.

Every variable in C has a specific data type, and it identifies the size and layout of the variable’s memory.)

**18-Difference between high level and low level language?**

**Ans- High level language Low level language**

High level language is a language which is Low level language is a language which

close to human language and far from computer is close to computer and far from

language. human language.

(High-level languages require the use of a compiler or an interpreter for their translation into the machine code. Low-level language requires an assembler for directly translating the instructions of the machine language. These languages have a very low memory efficiency.)

**19-How many main() functions can be declared in an c program? Justify your answer?**

Ans-(No, you cannot have more than one main() function in C language. In standard C language, the main() function is a special function that is defined as the entry point of the program.)

**20-Syntax error?**

**Ans-(**Syntax error are also called compile error and compile time errors. A syntax error occur when the compiler cannot recognize a statement because it violates the rules of the language. The compiler issues an error message to help you to locate and fix incorrect statement.)

**21-Define and explain the break statement?**

**Ans-**( The break statement (when executed in while, for, do-while and switch statement) causes an immediate exit from that statement. Program execution continues with the next statement. Common uses of the break statement are to escape early from a loop or to skip the remainder of a switch statement.)

**22-What is structure? Write syntax of structure?**

***Ans-(Keyword:***

keyword struct is used to define a structure.

***Size:***

When a variable is associated with a structure, the compiler allocates the memory for each member. The size of structure is greater than or equal to the sum of sizes of its member

***Memory:***

Each member within a structure is assigned unique storage area of location

***Value Altering:***

Altering the values of a member will not affect other members of the structure.

***Accessing Members:***

Individual member can be accessed at a time.

***Initialization of Members:***

Several member of a structure can initialize at once.)

**23-What is a pointer? Write an example of initialization of an pointer?**

Ans-(A pointer is a variable that stores a memory address. Like all other variables, it also has a name, has to be declared, and occupies some spaces in memory. It is called a pointer because it points to a particular location.

‘&’ = Address of operator

‘\*’ = Value at address operator or ‘indirection’ operator

&I return the Address of the variable i.

\*(&i) return the value stored at a particular address printing the value of \*(&i) is the same as printing the value of i.)

**24-Relationship between array and pointer?**

**\***(Array in C is used to store elements of same types whereas Pointers are address variables which stores the address of a variable.)

**Ans-**(Arrays and pointers intimately related in C and often may be used interchangeably. An array name can be thought of as a constant pointer. Pointers can be used to do any operations involving array subscripting. Pointers can be subscripting exactly as array can. This is referred to as pointer/subscript notation. A parameter of type const char\* typically represent a constant string.)

**25-Associativity of operator? Write name of right associativity Operator?**

Ans-(Right-associative operators of the same precedence are evaluated in order from right to left. For example, assignment is right-associative.

The operators which have right associativity are:

* Unary operators
* Conditional operators
* Assignment operators

**26-Implicit typecasting?**

Ans-(An implicit type conversion is automatically performed by the compiler when differing data types are intermixed in an expression. An implicit type conversion is performed without programmer's intervention.)

**27-Object code?**

**Ans-**(Object code is a set of instruction codes that is understood by a computer at the lowest hardware level. Object code is usually produced by a compiler that reads some higher level computer language source instructions and translates them into equivalent machine language instructions.)

**28-Comments and how to use them?**

1. **Ans-**(Single-line Comments in C. In C, a single line comment starts with // . It starts and ends in the same line. ...
2. Multi-line Comments in C. In C programming, there is another type of comment that allows us to comment on multiple lines at once, they are multi-line comments.

**29-Why we use do while loop?**

Ans-(Using the do-while loop, we can repeat the execution of several parts of the statements. The do-while loop is mainly used in the case where we need to execute the loop at least once. The do-while loop is mostly used in menu-driven programs where the termination condition depends upon the end user.)

**30-What is variable initialization and its importance?**

Ans-(Initializing a variable means specifying an initial value to assign to it. A variable that is not initialized does not have a defined value, hence it cannot be used until it is assigned such a value.)

**31-Low level language?**

Ans-(Low-level languages are languages that sit close to the computer's instruction set . A low-level language is a language that is close to computer and far from human. An instruction set is the set of instructions that the processor understands. Two types of low-level language are: machine code. assembly language.)

**32-List different types of control structure in c ?**

Ans-(“C” SUPPORTS MAINLY THREE TYPES OF CONTROL STATEMENTS**.**

* Decision making statements.
* Loop control statements.
* Unconditional control statements.)

**33-What is function prototype?**

Ans-(A function prototype is simply the declaration of a function that specifies function's name, parameters and return type. It doesn't contain function body. A function prototype gives information to the compiler that the function may later be used in the program.)

* The compiler uses function prototypes to validate function calls.

**34-Purpose of struct keyword in c ?**

Ans-(A structure is a keyword 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. 'struct' keyword is used to create a structure.)

**35-What is an advantage of an array over individual variable?**

Ans-(One of the major advantages of an array is that they can be declared once and reused multiple times. It represents multiple values by making use of a single variable. This helps in the improvement of the reusability of code and also improves the readability of the code.)

**36-Escape sequence?**

Ans-(An escape sequence in C language is a sequence of characters that doesn't represent itself when used inside string literal or character. It is composed of two or more characters starting with backslash \.)

* For example: \n represents new line.

**37-Linker?**

Ans-(In computing, a linker or link editor is a computer system program that takes one or more object files (generated by a compiler or an assembler) and combines them into a single executable file, library file, or another "object" file.)

**38-Control structure?**

Ans-(Control Structures are the blocks that analyze variables and choose directions in which to go based on given parameters. The basic Control Structures in programming languages are: )

* Sequence structure
* Selection structure
* Repetition structure

**39-Difference between pre-increment and post-increment?**

Ans-( Pre increment operator is used to increment variable value by 1 before assigning the value to the variable. Post increment operator is used to increment variable value by 1 after assigning the value to the variable.)

**40-What is logical error and how it is difficult to find?**

Ans-(Logical errors are more difficult to locate because they do not result in any error message. A logical error is a mistake in reasoning by the programmer, but it is not a mistake in the programming language. An example of a logical error would be dividing by 2.54 instead of multiplying to convert inches to centimeters.

 Because logic errors are often hidden in the source code, they are typically harder to find and debug than syntax errors.)

**41-Difference between compiler and interpreter?**

**Ans-(**Interpreter translates just one statement of the program at a time into machine code. Compiler scans the entire program and translates the whole of it into machine code at once. An interpreter takes very less time to analyze the source code. However, the overall time to execute the process is much slower.)

**42-What are comments also mention their types?**

Ans-(In computer programming, a comment is a programmer-readable explanation or annotation in the source code of a computer program. They are added with the purpose of making the source code easier for humans to understand, and are generally ignored by compilers and interpreters.)

**43-What is the right type to use for Boolean in c?**

In C, Boolean is a data type that contains two types of values, i.e., 0 and 1. Basically, the bool type value represents two types of behavior, either true or false. Here, '0' represents false value, while '1' represents true value.

C does not have Boolean data types, and normally uses integers for Boolean testing. Zero is used to represent false, and One is used to represent true.

**44-Use of compiler in c program?**

Ans-(Compiler, computer software that translates (compiles) source code written in a high-level language (e.g., C++) into a set of machine-language instructions that can be understood by a digital computer's CPU. Compilers are very large programs, with error-checking and other abilities.)

**45-Define flowchart?**

Ans-(A flowchart is a graphical representation of an algorithm or of a portion of an algorithm. Flowchart are drawn using certain special-purpose symbols such as rectangles, diamonds, rounded rectangles and small circles, these symbols are connected by arrows called flowlines.)

**46-What is continue statement?**

**Ans-**(The continue statement (when executed in while loop, for or do-while loop), skips the remaining statements in the body of that control statement and perform the next iteration of the loop.)

**47-What is switch statement?**

Ans-(The switch statement is different from all other control statements, in that braces are not required around multiple actions in a case of a switch. The switch statement consists of case labels, an optional default case and statements to execute for each case. It is also called multiple selection statement.)

**48-What is pass by reference in c? also give an example?**

Ans-(Passing by reference refers to a method of passing the address of an argument in the calling function to a corresponding parameter in the called function. In C, the corresponding parameter in the called function must be declared as a pointer type.)

**49-Give 2-d array declaration types?**

Ans-(To declare a 2D array, specify the type of elements that will be stored in the array, then ( [][] ) to show that it is a 2D array of that type, then at least one space, and then a name for the array.)

**50-What is meant by “equivalence of pointer and array “in c?**

\*(The cornerstone of the equivalence is that whenever we mention an array in an expression where it might seem that the array's ``value'' is needed, the compiler automatically generates a pointer to the array's first element. Other parts of the equivalence are that the array subscript notation [] works on both pointers and arrays, that an array can seemingly be assigned to a pointer, that when an array is seemingly passed to a function, a pointer to its first element is passed instead, and that when a function parameter is seemingly declared as an array, the compiler quietly declares it as a pointer, instead.)

**51-Describe the function header in c?**

**\*(**A header file is a file with extension. h which contains C function declarations and macro definitions to be shared between several source files. There are two types of header files: the files that the programmer writes and the files that comes with your compiler.)

**52-What are counter controlled repetition requirements?**

Ans-(Counter-controlled repetition is often called definite repetition because the number of repetitions is known before the loop begins executing. Counter-controlled repetition uses a variable called counter to specify the number of times a set of statements should execute. Counter variable are normally initialized to zero or one, depending on their use. And a total variable used to accumulates the sum of series of values and should normally be initialized to zero.)