BASIC QUESTIONS

1. Why we use #include statement in program.

See Answer**Ans:** #include statement is used to include library files required for various library functions. eg. **iostream.h** is needed for **cout** and **cin** objects and **stdio.h** is needed for **printf()** and **scanf()** function.

1. What is main()?

See Answer**Ans:** main() is a function from where program execution starts.

1. Data types available in C/C++?

See Answer**Ans:** int , long int, float, long float(double), long double, char, unsigned int, unsigned char.

1. Size and range of int and long int.

See Answer**Ans:** int :- **Size:** 4 Bytes(window based compilers), **Range:** -231 to 231-1.  
        long int: **Size** 8 Bytes (window based compilers), **Range:** -263 to 263-1.

1. Size and range of float and long double.

See Answer**Ans:** float :- **Size:** 4 Bytes(window based compilers), **Range:** 1.2-38 to 3.438.  
        long double: **Size** 10 Bytes (window based compilers), **Range:** 3.4-4932 to 1.14932.

1. Diff b/w Mod(%)and Divide(/).

See Answer**Ans:** Division(/) used for getting quotient value where as module(%) is used for getting remainder value.

1. What will be the output of:
   1. int x=5/2;

See Answer**Ans:** 2

* 1. float x=5/2;

See Answer**Ans:** 2.000000

* 1. float 5.0/2;

See Answer**Ans:** 2.500000

1. What will be the output of:
   1. int x=8.0%3;

See Answer**Ans:** Error: Mod never works with float.

1. What will be the output of:
   1. float discount=10/100\*8000.0;

See Answer**Ans:** 0. because 10/100 generates 0. **(int/int = int)**.

1. What is hierarchy/precedence of arithmetic operators in C/C++.

See Answer**Ans:** Order of execution of arithmetic operators in an expression is known as hierarchy.

1. What is a Variable?

See Answer**Ans:** A storage location in memory.

1. What is Token?

See Answer**Ans:** A token is the smallest element of a program that is meaningful to the compiler. Tokens can be classified as follows:  
1. Keywords  
2. Identifiers  
3. Constants  
4. Strings  
5. Special Symbols  
6. Operators

1. What will be the output of:
   1. int x=-5%2;

See Answer**Ans:** -1 (The sign of numerator will be the sign of result).

* 1. int y=5%-2;

See Answer**Ans:** 1 (The sign of numerator will be the sign of result).

* 1. int z=-5%-2;

See Answer**Ans:** -1 (The sign of numerator will be the sign of result).

1. What is Explicit type casting?

See Answer**Ans:** In computer science, type conversion or typecasting refers to changing an entity of one datatype into another. There are two types of conversion: implicit and explicit. The term for implicit type conversion is coercion. Explicit type conversion in some specific way is known as casting.

1. What is Printf()and Scanf()?

See Answer**Ans:** printf() and scanf() are functions.

1. Does Printf() return any Value?

See Answer**Ans:** yes printf() return int value.  
       It return no. of characters printed on screen.  
eg. int x=printf("BCE");  
printf("%d",x); //3

## DECISION MAKING STATEMENTS

1. What is need of Decision making statements?

See Answer**Ans:** When we want to make a choice among two or more statements, then decision making statements are needed mostly.

1. How many types of Decision making statements?

See Answer**Ans:** 4 Types.  
   1. Simple If    2. if-else    3. Ladder if-else    4. Nested if-else

1. What is the importance of blocks?

See Answer**Ans:** When more than one statements want to execute in the if condition and else statement then we must need to create blocks.

1. When else blocks become necessary?

See Answer**Ans:** Else blocks are very necessary to create because when more than one statement is made in the else blocks, because if we don't create else blocks then the statements given in the else are treated as common statements except Ist statement.

1. When to use Ladder if-else?

See Answer**Ans:** Generally, When more than two conditions are given we use ladder-if-else.

1. When to use nested if-else?

See Answer**Ans:** When a condition depends on another condition to execute then we use nested if-else.

1. How logical operator AND(&&)works?

See Answer**Ans:** In AND(&&) Operator, If all conditions are true then the result wiil be true. When one othe given conditions is false, the result will become false. When, one condition is false then any other condition will not be check in AND(&&) operator.

1. What is the difference between =(Assignment Operator) and ==(equality operator).

See Answer**Ans:** Assignment operator(=) assign the values from left to right eg. x=5; Equality operator(==) check the equality whether a value is equal to another value or not? eg. if(a==b) or not?

1. What will be the output of:
   * if(!7<=10)  
     printf("Banglore Computer");  
     else  
     printf("Education");

See Answer**Ans:** Bangalore Computer

1. What will be the output of:
   * if(7)  
     printf("Hello");  
     else  
     printf("Hi");

See Answer**Ans:** Hello

1. What will be the output of:
   * if(2==3);  
     printf("Real");  
     else  
     printf("Java");

See Answer**Ans:** Error at if(2==3);

1. What will be the output of:
   * if(2==3)  
     printf("Real");  
     else  
     printf("Java");

See Answer**Ans:** Java

1. What will be the output of:
   * if(printf("Hello"))  
     printf(" Real");  
     else  
     printf(" Java");

See Answer**Ans:** Hello Real

## LOOPS

1. Why we use Loops and its types.

See Answer**Ans:**Repeats a statement or group of statements while a given condition is true. It tests the condition before executing the loop body. Execute a sequence of statements multiple times and abbreviates the code that manages the loop variable.

1. Is there any diff. b/w while() and for()loop?

See Answer**Ans:**Both for loop and while loop are used to excute one or more lines of code certain number of times. The main differences are as follows.  
    **Syntax:**  
    **While loop:**     while(condtion) {  
    //statements to excute.  
    }  
    **For loop:**     for(intialization; condition; Increment or decrement){  
    // statements to be excuted.  
    }

1. Diff. b/w while() and do-while()loop?

See Answer**Ans: While Loop:**Condition is checked first and also known as entry-control loop. Since condition is checked first, statements may or may not get executed.  
**Do-while Loop:**Condition is checked last and also known as exit-control loop. Since condition is checked later, the body satements will execute at least once.

1. What happen if we use ; at the end of loop?
   * eg:  
     for(i=1;i<=2;i++);  
     {  
     printf("%d",i);  
     }

See Answer**Ans:**The loop will execute without executing any body statement and answer is: **3**.

1. What is Palindrome Number?

See Answer**Ans:**when a number remains same after the reverse is known as palindrome no. **eg.** 121

1. How to check no. is Palindrome or not?

See Answer**Ans:**First calculate the reverse of a number the check weather it matches with original number or not. if it matches then the no is palindrome otherwise not.  
**eg.** Rev=0;  
N1=N;  
while(N!=0){  
R=N/10;  
Rev=Rev\*10+R; N=N/10;  
}  
if(N1==Rev){  
cout<<"Palindrome";  
else  
cout<<"not Palindrome";

1. Explain Break Statement

See Answer**Ans:**When a break statement is encountered inside a loop, the loop is immediately terminated and the program control resumes at the next statement following the loop. It can be used to terminate a case in the switch statement.

1. Explain Continue Statement

See Answer**Ans:**The continue statement in C programming works somewhat like the break statement. Instead of forcing termination, it forces the next iteration of the loop to take place, skipping any code in between. For the for loop, continue statement causes the conditional test and increment portions of the loop to execute.

1. How to create infinite for() loop?

See Answer**Ans:**for(;;)  
   cout<<"hello";

1. When to use nested loops?

See Answer**Ans:**Nested loops are used where you have to repeat a set of statement repeatedly.

## ARRAY

1. What is an Array?

See Answer**Ans:**An array is a data structure that contains a group of elements. Typically these elements are all of the same data type, such as an integer or string. Arrays are commonly used in computer programs to organize data so that a related set of values can be easily sorted or searched.

1. When to use Arrays?

See Answer**Ans:**when you have to use multiple variable with same data type and at contigous location.

1. How will to find the size of array?

See Answer**Ans:**You can use sizeof operator to find the size of array.

1. What is Subscript?

See Answer**Ans:**An array is a collection of like variables that share a single name. The individual elements of an array are referenced by appending a subscript, in square brackets, behind the name. The subscript itself can be any legitimate C expression that yields an integer value, even a general expression.

1. How the array can be initialize?

See Answer**Ans:**You can use for loop to initialize the array.

1. What happen if we declare array using Keyword "static"?

eg:  
static int a[4];See Answer**Ans:**Because static variables are initialized once, you should initialize the array and then it will retain the value from previous call.

1. How to declare 2-D Array?

See Answer**Ans:**datatype variable\_name [no. of rows][no. of columns]

1. What is logic of greatest element of array?

See Answer**Ans:**To find the greatest element in array, first intialize the variable with the first element of array.  
int max,a[100],n,i;  
max=a[0];  
for(i=0;i<n;i++){  
if(max<a[i])  
max=a[i];  
}  
cout<<"Max="<<max;

1. What is logic of search element in array?

See Answer**Ans:**1.) Input size and elements in array from user. Store it in some variable say size and arr.  
2.) Input number to search from user in some variable say toSearch.  
3.) Define a flag variable as found = 0. I have initialized found with 0, which means initially I have assumed that searched element does not exists in array.  
4.) Run loop from 0 to size. Loop structure should look like for(i=0; i<size; i++).  
5.) Inside loop check if current array element is equal to searched number or not. Which is if(arr[i] == toSearch) then set found = 1 flag and terminate from loop. Since element is found no need to continue further. Outside loop if(found == 1) then element is found otherwise not.

1. How many loops are used while multiplication of 2 matrix?

See Answer**Ans:**3

1. How bubble sort works?

See Answer**Ans:**Bubble sort, sometimes referred to as sinking sort, is a simple sorting algorithm that repeatedly steps through the list to be sorted, compares each pair of adjacent items and swaps them if they are in the wrong order. The pass through the list is repeated until no swaps are needed, which indicates that the list is sorted. The algorithm, which is a comparison sort, is named for the way smaller or larger elements "bubble" to the top of the list. Although the algorithm is simple, it is too slow and impractical for most problems even when compared to insertion sort.

1. Diff. b/w Array and Structure.

See Answer**Ans:**1.) An array is a collection of related data elements of same type. Structure can have elements of different types.  
2.) An array is a derived data type. A structure is a programmer-defined data type  
3.) Any array behaves like a built-in data types. All we have to do is to declare an array variable and use it. But in the case of structure, first we have to design and declare a data structure before the variable of that type are declared and used.  
4.) Array allocates static memory and uses index / subscript for accessing elements of the array. Structures allocate dynamic memory and uses (.) operator for accessing the member of a structure.

## POINTER

1. What is Pointer?

See Answer**Ans:**A pointer is a variable whose value is the address of another variable, i.e., direct address of the memory location. Like any variable or constant, you must declare a pointer before using it to store any variable address.

1. What is indirection operator?

See Answer**Ans:**The indirection operator is a unary operator represented by the symbol (\*). The indirection operator can be used in a pointer to a pointer to an integer, a single-dimensional array of pointers to integers, a pointer to a char, and a pointer to an unknown type.

1. What is void Pointer?

See Answer**Ans:**The void pointer, also known as the generic pointer, is a special type of pointer that can be pointed at objects of any data type! A void pointer is declared like a normal pointer, using the void keyword as the pointer's type: 1. void \*ptr; // ptr is a void pointer

1. What is Generic Pointer?

See Answer**Ans:**When a variable is declared as being a pointer to type void it is known as a generic pointer. Since you cannot have a variable of type void, the pointer will not point to any data and therefore cannot be dereferenced. It is still a pointer though, to use it you just have to cast it to another kind of pointer first.