

# Assignment - 1

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- 1) Who invented C Language?  
Dennis Ritchie
- 2) For 16-bit compiler allowable range for integer constants is  
-32768 to 32767
- 3) C is — type of programming language  
Procedural
- 4) C language was invented in which laboratories?  
AT&T bell labs
- 5) C language was invented to develop which operating system  
Unix
- 6) A C program is a combination of  
All the options given here
- 7) Correct way of commenting a single line is  
// printf("Hello C...");
- 8) What is an Identifier in c language  
All the options given here
- 9) What is length of an identifier that is unique for Non Global and Non Function  
Names.  
63
- 10) Number of Key words present in C language  
32
- 11) Each statement in a C program should end with  
Semicolon (;)
- 12) Identify wrong C Keywords below  
char,extern,intern,return
- 13) Types of Integers are  
All the options given here { long, int, short }

- 14) Range of signed char and unsigned char are  
-128 to 127, 0 to 255
- 15) Which escape character can be used to begin a new line in c?  
\n
- 16) Which escape character can be used to beep from speaker in c  
\a
- 17) Character constants should be enclosed between  
Single quotes
- 18) String constants should be enclosed between  
Double quotes
- 19) Which of the following is an example of compounded assignment statement?  
 $a += 5$
- 20) The operator & is used for  
Bitwise AND
- 21) What will be the output of the expression 11&5  
None of these (14)
- 22) p++ executes faster than p+1 because  
p++ is a single instruction
- 23) Header file in c contains  
operators for files
- 24) The printf() function returns which value when an error occurs  
Negative value
- 25) Identify the wrong statement  
putchar(65)
- 26) Which of the following is character oriented console I/O function  
getchar() & putchar()
- 27) Symbolic constants can be defined using  
#define
- 28) What is output of this statement printf("%d", (0++)) ?  
The current value of a

Q1) How many characters can a string hold when declared as follows  
char name[10];

10

Q2) What keyword is used to prevent any changes in the variable  
within a C program?  
const

## Assignment - 2

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- 1) Choose a C conditional operator from the list  
?:
- 2) Choose a syntax for C Ternary operator from the list  
Condition ? Expression 1 : Expression 2
- 3) What is the output of the following program  
SRM
- 4) What is the output of following program  
41
- 5) choose a statement to use C if else statement  
Else or Elseif is optional with if statement
- 6) What is the output of the C Program  
Yes
- 7) What is the output of the C Program  
Only second statement is printed
- 8) What is the output of the C Program  
Compilation Error
- 9) What is the output of the C Program  
S1
- 10) What is the output of the C Program  
FALSE
- 11) What is the output of C Program  
it doesn't matter
- 12) What will be the output of following program  
Hai Bye
- 13) What will be the output of following program  
Loop Loop Loop Loop
- 14) What will be the output of following program  
8 10 15
- 15) What is the right choice, if the following loop is implemented?  
The loop will run infinitely many times
- 16)

16) Write a program to print all even numbers from 0 to 100.

```
#include <stdio.h>
```

```
int main() {
    int n;
    for (n=0; n<=100; n++) {
        if (n%2==0)
            printf("%d", n);
    }
    return 0;
}
```

17) Write a program to check whether entered number is prime or not

```
#include <stdio.h>
```

```
int main() {
    int n, i, prime=0; scanf("%d", &n);
    if (n==1) {
        printf("%d is not prime nor composite number", n);
    }
    else {
        for (i=2; i<n; i++) {
            if (n%i==0) {
                prime=1;
                break;
            }
        }
        if (prime==0) printf("%d is a prime number", n);
        else printf("%d is not a prime number", n);
    }
    return 0;
}
```

## Assignment - 3

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- 1) Select the appropriate syntax for C ternary operator from the list  
Condition ? Expression1 : Expression2
- 2) What will be the output of following program  
0
- 3) What will be the output of following C program  
+  
7
- 4) What will be the output of following program  
hi hello
- 5) What is the output of C program with switch case statement  
Hai bye
- 6) Which loop is faster in C language , for, while or do while  
All work at same speed
- 7) How many times the following for loop will be executed  
11
- 8) Which loop is guaranteed to execute at least one time  
While
- 9) What is the output of the below program  
Infinite iteration of infinite loop
- 10) Find the odd one out  
strcpy
- 11) Match the items of two columns  
1-B, 2-D, 3-A, 4-C
- 12) What is the output of the following two dimensional Array program  
14
- 13) In C , if you pass an array as an argument to a function, what actually gets passed?  
Base address of the array
- 14) Which of the following is format specification for printing string in printf()?  
%s
- 15) What is the output of the below program  
Hello world

- 16) what is the limit of the number of functions that can be used in C program  
No limit
- 17) Point out the line in the following code segment which would result in a compilation error  
line 8
- 18) The Keyword used to transfer control from a function back to the calling function is  
Return
- 19) what is the error in the following program  
Prototype declaration
- 20) What will be the output of the following C code?  
24.

## Assignment - 4

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Q1 Find the Second largest Element. You are given a sequence of integer as input, terminated by a ' -1 ' which is not considered as part of input.

```
#include <stdio.h>
void main() {
    int max, smax, n; scanf ("%d", &max);
    for (;;) {
        scanf ("%d", &n);
        if (max == n)
            continue;
        if (smax > n)
            max = n; n = smax; smax = max; break;
        break;
    }
    for (;;) {
        scanf ("%d", &n);
        if (n == -1) break;
        if (max > n)
            smax = n; n = max; continue;
        if (max > smax) {
            if (max == n) continue;
            else smax = max;
        }
    }
    printf ("%d", n);
```

Q2 LCM of N Numbers

Write a C program that calculate the LCM of 'n' numbers

2) #include <stdio.h>

```

int lcm(int num1, int num2) {
    if (num1 == 0)
        return num1;
    return lcm(num2, num1 % num2);
}

int main() {
    int arr[10], i, n, l;
    scanf("%d", &n);
    for (i = 0; i < n; i++) {
        scanf("%d", &arr[i]);
    }
    l = arr[0];
    int gcd = arr[0];
    for (i = 1; i < n; i++) {
        gcd = lcm(arr[i], l);
        l = (l * arr[i]) / gcd;
    }
    printf("%d", l);
}

```

Q3 Lexicographically preceding permutation

Given an integer  $n$  and a permutation of numbers  $1, 2, \dots, n-1, n$  where write a program to print the permutation that lexicographically precedes the given input permutation. If the given permutation is lexicographically least permutation, then print permutation itself.

3)

```

#include <stdio.h>
#include <string.h>

int swap (inf*a, inf*b) {
    inf temp;
    temp = *a;
    *a = *b;
    *b = temp;
    return 0;
}

void per (inf*a, inf*l, inf*q) {
    inf i;
    if (*l == q)
        printf ("%d", *a);
    else {
        for (i=1, i<=q, i++)
            swap (a+i), (a+i));
        per (a, l+1, q);
        swap (a+l), (a+q));
    }
}

int main () {
    int n, arr[2] = {7, 1}, i, l;
    scanf ("%d", &n);
    for (i=0; i<n; i++)
        scanf ("%d", arr[i]);
    l = strlen (arr);
    per (arr, 0, l-1);
    return 0;
}

```

## 1) Pointers to array Elements and strings

- \* An array of pointers `sol` stores the address of all the elements of an array and an array of string pointers stores the address of the strings present in the array. The array contains the base address of every string in the array.
- \* It occupies less space in the memory. An array of pointers to strings allow greater ease in manipulating strings & performing different operations on strings.
- \* Infact if the strings array using `scanf()` function is not possible because the memory allocation of contains garbage value and it is not feasible to send garbage-value to `scanf()`. Therefore, considering this, the input as already given Example `char * strings [J] = R`

## 2) Function pointers - Array of function pointers

Pointers can be defined using built-in function as parameter and given the use of the function by declaring the "\*" symbol, which represents the variable to be a pointer same as individual pointers, we can also use them in array function pointers

Ex:- `Void swap (int*a, int*b)`

```

    { int temp;
      temp = *a;
      *a = *b;
      *b = temp; }
```

## 3) Accessing array of function pointers

Same as defining pointer function, we can also access them using only a pointers not a variable or other types. This is much quicker than the normal databases types as this only uses memory location mainly. The function can be accessed by calling it in the program with pointers as parameters

```

Void swap (int*a, int*b) {
    int temp; temp = *a;
    *a = *b; *b = temp; }
```

```

int main () {
    int n, m;
    scanf ("%d %d", &n, &m);
    swap (&n, &m);
    printf ("n is %d, m is %d", n, m);
    return 0;
}
```

## Assignment - Python

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Q1 Explain how to create a dictionary in python? Give the features of python dictionaries.

Features of dictionaries :-

- 1) Unordered set
- 2) Indexed by Keys
- 3) Keys are unique
- 4) Mutable

Creation of a dictionary

- 1) dict()
- 2) {dictionary}[key] > value

Q2 What are the three types of import statement in Python? Explain

1) Absolute import

>>> import <module/packagename>

2) Relative import

>>> from <module> import <package>

3) import <module> as <variablename>

Q3 Write a program to enter a number in python and print its octal & hexadecimal equivalent.

```
num = int(input("Enter a Number :-"))
print("Octal Equivalent :-", oct(num))
print("Hexadecimal Equivalent :-", hex(num))
```