

# STANDARD 10

## COMPUTER SCIENCE

### UNIT 01

### CHAPTER 03

### INPUT OUTPUT FUNCTIONS AND STATEMENTS

1. Explain scanf() and printf() functions in C.

A: scanf() function:  
It is used to read/input values of variables using the standard input devices.  
Syntax: scanf("format string",&variable);  
printf() function:  
It is used to print/display values of variables using the standard output devices.  
Syntax: printf("format string",variable);

2. What is an escape sequence? What is its purpose?

A: An escape sequence is a group of control characters used to move the cursor and print characters such as ?, ", \ and so on. Escape sequences are used in input/output functions to control the position of the cursor and to print certain characters.

3. Give the meaning of the given escape sequences: \a, \b, \f, \n, \r, \t, \v, \\\, \?, \', \", \0.

Escape Sequence/ Character Constant	Meaning
\a	Audible bell (Alert)
\b	Backspace
\f	Form feed
\n	Move to a new line
\r	Carriage return (Enter)
\t	Horizontal tab

\v	Vertical tab
\\	Print backslash
\?	Print question mark
\'	Print single quote
\"	Print double quote
\0	Null character

4. Explain the various character input/output functions in C.

A: The various character input/output functions in C are  
getchar() function: It is used to read one character at a time from the keyboard.  
putchar() function: It is used to display one character at a time on the monitor screen.  
getch() function: It is used to read a character from the keyboard and it does not expect the enter key press.  
putch() function: It is used to display a character on the monitor screen.  
getche() function: It is used to read a character from the keyboard without expecting the enter key press.  
gets() function: It is used to read a string of characters including white space.  
puts() function: It is used to display a character string on the monitor screen.  
clrscr() function: It is used to clear the monitor screen.

5. What is a header file in C? List any two header files.

A: A header file or pre-processor directive is an instruction given to the compiler to perform specific tasks before compiling the main program. #include<stdio.h>, #include <math.h> are two header files.

6. Name any four functions available in stdio.h.

A: getchar(), getch(), gets() and puts().

7. What is an assignment statement? Write the syntax of assignment statement.

A: An assignment is a statement used to assign value to a variable.  
Syntax: variable = value or expression;

8. What is the full form of stdio.h?  
A: stdio.h stands for standard input-output.header.

9. Write the meaning of the following scanf format codes: %d, %f, %e, %c, %s

Code	Meaning
%d	Represent a decimal integer value
%f	Represent a floating-point value
%e	Represent a floating-point value in decimal or exponential form
%c	Represent a single character constant
%s	Represent a string of value of characters

10. Write a C program to find the sum and average of given three numbers.

```
A: #include<stdio.h>
#include<conio.h>
#include<math.h>
void main()
{
    int a, b, c, sum, average;
    printf("Enter three numbers\n");
    scanf("%d %d %d", &a, &b, &c);
    sum = (a + b + c);
    average = sum/3;
    printf("\nSum=%d\nAverage=%d",sum,average);
    getch();
}
```

11. Write a C program to find the value of y using the relation  $y = x^2 + 2x - 1$ .

```
A: #include<stdio.h>
#include<conio.h>
#include<math.h>
void main()
{
    int x, y;
    printf("Enter the value of x\n");
    scanf("%d ", &x);
    y = x * x + 2 * x - 1;
```

```
printf("\ny = %d",y);
getch();
}
```

12. Write a C program to swap (exchange) the values of variables A and B without using a temporary variable.

```
A: #include<stdio.h>
#include<conio.h>
#include<math.h>
void main()
{
    int A, B;
    printf("Enter two numbers\n");
    scanf("%d %d", &A, &B);
    printf("Before swapping A = %d B = %d",A, B);
    A = A + B;
    B = A - B;
    A = A - B;
    printf("After swapping A = %d B = %d",A, B);
    getch();
}
```