Lab	Program
1	a. Motivational videos on Programming b. Introduction to Turbo C++ IDE c. WAP to print "Hello World" d. WAP to print your address **i)** using single printf **ii)** using multiple printf
2	a. WAP to print addition of 2 numbers (without scanf) b. WAP to calculate and print average of 2 numbers (without scanf) c. WAP to print addition of 2 numbers (with scanf) d. WAP to calculate and print average of 2 numbers (with scanf) e. WAP to calculate Area of Circle f. WAP to calculate Simple Interest
3.	a. WAP to convert temperature from Fahrenheit to Celsius (**Formula**: f = 1.8 * c + 32) b. WAP to convert temperature from Celsius to Fahrenheit c. WAP to find percentage of 5 subjects d. WAP to convert seconds into hours, minutes & seconds and print in HH:MM:SS **[**e.g. 10000 seconds mean 2:46:40 (2 Hours, 46 Minutes, 40 Seconds)**]** e. WAP to convert number of days into year, week & days **[e.g**. 375 days mean 1 year, 1 week and 3 days**]**
4.	Using simple if a. WAP to check whether the given number is positive or negative b. WAP to check whether the given number is odd or even c. WAP to find out largest number from given two numbers d. WAP to find out largest number from given three numbers using Logical Operator (&&) e. WAP to perform Addition, Subtraction, Multiplication and Division of 2 numbers as per user's choice f. WAP to enter basic salary of an employee and calculate Gross salary according to given conditions: Basic Salary >= 10000 : HRA = 20% of basic, DA = 80% of basic Basic Salary >= 20000 : HRA = 25% of basic, DA = 90% of basic Basic Salary >= 30000 : HRA = 30% of basic, DA = 95% of basic g. WAP to determine the roots of the equation $ax^2+bx+c=0$
5.	Using if…else… a. WAP to check whether the given number is positive or negative b. WAP to check whether the given number is odd or even c. WAP to find out largest number from given two numbers Using nested if a. WAP to find out largest number from given three numbers without using Logical Operator (&&) b. WAP to enter basic salary of an employee and calculate Gross salary according to given conditions: Basic Salary >= 10000 : DA = 80% of basic salary, HRA = 20% of basic salary+ DA Basic Salary >= 20000 : DA = 90% of basic salary, HRA = 25% of basic salary+ DA Basic Salary >= 30000 : DA = 95% of basic salary, HRA = 30% of basic salary+ DA
6.	Using if…else if… else a. WAP to check whether the given year is leap year or not. **[**If a year can be divisible by 4 but not divisible by 100 then it is leap year but if it is divisible by 400 then it is leap year**]** b. WAP to perform Addition, Subtraction, Multiplication and Division of 2 numbers as per user's choice c. WAP to find out largest number from given 3 numbers d. WAP to read marks of five subjects. Calculate percentage and print class accordingly. *Fail* below 35, *Pass Class* between 35 to 45, *Second Class* between 45 to 60, *First Class* between 60 to 70, *Distinction* if more than 70 e. WAP to enter basic salary of an employee and calculate Gross salary according to given conditions:

	Basic Salary >= 10000 : DA = 80% of basic salary, HRA = 20% of basic salary+ DA Basic Salary >= 20000 : DA = 90% of basic salary, HRA = 25% of basic salary+ DA Basic Salary >= 30000 : DA = 95% of basic salary, HRA = 30% of basic salary+ DA f. Three sides of a triangle are entered through the keyboard, WAP to check whether the triangle is isosceles, equilateral, scalene or right angled triangle g. WAP to determine the roots of the equation $ax^2+bx+c=0$
7.	Using Conditional operator (expr1?expr2:expr3) a. WAP to find out largest number from given 2 numbers b. WAP to find out largest number from given 3 numbers c. WAP to read 3 numbers, multiply largest number from first two numbers to third one Using Switch statement d. WAP to print day name based on day number e. WAP to print number of days in the given month
8.	Discuss while loop a. WAP to print 1 to 10 b. WAP to print 1 to n c. WAP to print odd numbers between 1 to n d. WAP to print numbers between two given numbers which is divisible by 2 but not divisible by 3
9.	a. WAP to print sum of 1 to n numbers b. WAP to print sum of series 1 + 4 + 9 + 16 + 25 + 36 + …n c. WAP to print sum of series 1 – 2 + 3 – 4 + 5 – 6 + 7 … n d. WAP to print sum of series $1+\frac{1}{2}+\frac{1}{3}+\frac{1}{4}+\cdots+\frac{1}{n}$
10.	a. WAP to calculate x^y without using power function b. WAP to find factorial of the given number c. WAP to find factors of the given number d. WAP to check whether the given number is perfect or not. [Sum of factors including 1 excluding number itself] e. WAP to find whether the given number is prime or not using break f. WAP to find whether the given number is prime or not using flag
11.	a. WAP to print digits of given number b. WAP to print sum of digits of given number c. WAP to print given number in reverse order d. WAP to check whether the given number is palindrome or not e. WAP to check whether the given number is Armstrong or not
12.	Discuss for loop Do all programs of while loop using for loop **[**practical number 9 to 12**]**

13. Discuss nested for loop

a. WAP to find the sum of 1 + (1+2) + (1+2+3) + (1+2+3+4)+ …+(1+2+3+4+….+n)

b. WAP to estimate the value of the mathematical constant e by using the formula

$$e = 1 + \frac{1}{1!} + \frac{1}{2!} + \frac{1}{3!} + \frac{1}{4!} + \cdots$$

c. WAP to compute the value of e^x by using the formula

$$e^x = 1 + \frac{x}{1!} + \frac{x^2}{2!} + \frac{x^3}{3!} + \frac{x^4}{4!} + \cdots$$

d. WAP to find out prime numbers between given two numbers

e. WAP to print Multiplication Table up to n

1	2	3	4	5	6	7	.	.
2	4	6	8	10	12	14	.	.
3	6	9	12	15	18	21	.	.
4	8	12	16	20	24	28	.	.
5	10	15	20	25	30	35	.	.
.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.

14. a. WAP to display following patterns

```
1          1          1                    1              1          1          *
1 2        2 3        2 3                  0 1          2 2        A B        * *
1 2 3      3 4 5      4 5 6                1 0 1      3 3 3      2 3 4      * * *
1 2 3 4    4 5 6 7    7 8 9 10             0 1 0 1  4 4 4 4    C D E F    * * * *
```

```
* * * * *    * * * * * *    * * * * * * * * * * *              *
*     *      * * * * *        * * * * * * * * *              * *
*     *      * * * *            * * * * * * *              * * *
*     *      * * *                * * * * *              * * * *
* * * * *    * *                    * * *              * * * * *
           *                          *              * * * * * *
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a. WAP to draw Pascal's triangle

15.

a. WAP to count number of positive or negative number from an array of n numbers

b. WAP to count number of even or odd number from an array of n numbers

c. WAP to read n numbers in an array and print them in reverse order

d. WAP to find Max, Min, Sum, Avg of given numbers from an array

e. WAP to count numbers higher than the average of an array

f. WAP to sort elements of an array in an ascending order

16.

a. WAP to read values in two-dimensional array and print them in matrix form

b. WAP to count number of positive, negative and zero elements from 3 X 3 matrix

c. WAP to read and store the roll no and marks of 20 students using array.

d. WAP to print Transpose of a matrix

e. WAP to perform Addition of two matrices

f. WAP to perform Multiplication of two matrices

17. a. WAP to use all string handling functions **(**strlen, strcmp, strcpy, strcat, strchr, strstr, strrev, strlwr, strupr, strncpy, strncat, strncmp, strrchr**)**

18.

a. WAP to count simple interest using function

b. WAP to find maximum number from given two numbers using function

	c. WAP to generate Fibonacci series of N given number using function name fibbo. **(e.g.** 0 1 1 2 3 5 8…**)** d. WAP to find the factorial of a given number using recursion e. WAP to convert decimal number into binary using recursion
19.	a. WAP to create structure of book with book title, author name, publication, and price. Read data of n books and display them b. WAP to read data of student in structure and print it.
20.	a. WAP to print value and address of a variable b. WAP to calculate sum of two numbers using pointer c. WAP to swap value of two numbers using pointer d. WAP to calculate sum of elements of an array using pointer e. WAP to swap value of two variables using function
21.	a. WAP to display content of a file b. WAP to copy source file to destination file c. WAP to count number of spaces, tabs & newlines in a file