Programme: MCA
Semester:I
Subject code ITA419
Course name: Programming in C and Algorithm Design L T P C 3 0 2 4

Cycle sheet I
Unit I &II

Sr No	Name of Program
1	Program to Find Sum and Average of Three Real Numbers
2	Program to Find Area of Square and Circumference of a Circle
3	Program to find Sphere Surface Area and Volume of a Sphere
4	Program to Find Area of a Triangle using Hero Formula
5	Program to Find Simple Interest and Compound Interest
6	Program to Convert Temperature from Degree Centigrade to Fahrenheit
7	Program to Convert Time in Seconds to Hours Minutes and Seconds
8	Program to Swap Values of Two Variables using Third Variable
9	Program to Swap Values of Two Variables Without using Third Variable
10	Program to Calculate the Net Salary

Control Statements

1 Program to Find Largest of Three Numbers
2 Program to Check Whether a Character is Vowel or not by using switch Statement
3 Program to Find the Sum of First 100 Positive Integers
4 Program to Find the Sum of Even and Odd Numbers from First 100 Positive Integers
5 Program to Find the Sum of Digits of a Positive Integer
6 Program to Find Whether the Given Number is a Prime Number
7 Program to Print First N Prime Numbers
8 Program to Print a Table of any Number
9 Program to Check Whether the Given Number is an Armstrong Number
10 Program to Print the Numbers Which are Divisible by 3 and 5 from First 100 Natural Numbers
11 Program to Find Whether a Number is Palindrome or Not
12 Program to Find Factorial of a Number without using Recursion
13 Program to Find Factorial of a Number using Recursion
14 Program to Print Fibonacci Series without Recursion
15 Program to Print Fibonacci Series using Recursion
16 Program to Reverse a Given Number
17 Program to Find Value of sinx using Expansion Series given below:
sin(x) = x - x3/3 + x5/5 - x7/7.....
18 Program to Print the Pattern:

1
121
12321
1234321
123454321
12345654321
1234567654321
123456787654321
12345678987654321

19 Program to Find HCF of Two Numbers using Recursion
20 Program to Find HCF of Two Numbers Without Recursion
21 Program to Find Vowels in a String
22 Program to Count Number of Words and Number of Characters in a String
23 Program to Implement break Statement
24 Program to Implement continue Statement

Array

1 Program to Print Transpose of a Matrix
2 Program to Add Two Matrices
3 Program to Multiply Two Matrices
4 Program to Find Smallest Among N Numbers
5 Program to Illustrate the Concept of Passing 1-D Array to Function
6 Program to Illustrate the Concept of Passing 2-D Array to Function
Program to Sort an Array Using Bubble Sort
Program to Sort an Array Using Selection Sort
Program to Search an Array using Linear Search

Strings

1 Program to Concatenate Two Strings using strcat( )
2 Program to Concatenate Two Strings without using strcat( )
3 Program to Compare Two Strings using strcmp( )
4 Program to Compare Two Strings without using strcmp( )
5 Program to Copy String using strcpy( )
6 Program to Copy String without using strcpy( )
7 Program to Find Length of a String using strlen( )
8 Program to Reverse a String using strrev( )
9 Program to Reverse a String without using strrev( )
10 Program to Input-Output Strings using Character Functions
11 Program to Input-Output Strings using gets( ) and puts( )
12 Program to Input-Output Strings using printf( ) and scanf( )
13 Program to Find Length of a String Without using strlen( )

Additional programs:

1. Write a C program to evaluate the following expression:
$$\frac{(7 \times 10^{7} + 8 \times 10^{-3})}{(12 \times 10^{5} - 2 \times 10^{7})}$$
2. Write a C program to find the following:
   a. Volume of a sphere
   b. Volume of a circle
   c. Volume of a cylinder
3. Code a program to print the memory sizes of all data types (with qualifiers).
4. Accept your name, sex and age. Print it in the following manner based on the sex.
   Name=Mr./Ms. Your Name

Age= your age

5. Calculate the EB bill for a customer ,given the number of units consumed during a particular month.

Nr of units	Charge
<100	Rs.1.50
>=100 and <200	Rs. 3.00 per unit
>=200and <300	Rs. 4.00 per unit
>=300	Rs. 5.75 per unit

6. Write a C program to calculate the area of a cylinder for which the radius and height are given below using a **function**.

Radius(cm)	Height(cm)
3.8	4.5
6	10
11.25	3
0.2	1

7. Write a C program to declare a one dimensional array containing the following 8 values

   18.4, 24, 9, 30.23, 11.78, 29.1, 13.0, 1.1, 2.8.

   Find the maximum and minimum values. Use two functions, one should return the maximum number and the other one should return the minimum number. Print the output in the main program.
8. Write a C program that will find the number of occurrences of the text "copy" (not case sensitive) in the following paragraph.

   Congratulations! You have successfully completed the IEEE Electronic Copy right Form. A copy of the copy right Form is attached here for your records. Kindly sent a copy of the copy right form to all the authors of this paper.
9. Write a C program to replace the number 100 with 0 in the following array of numbers.

   10, 20, 100, 30, 40, 100, 20, 30, 40, 51, 43, 20, 100, 200, 100, 100 *.

   Get the elements from the user till the user gives a *.

   Find the sum of the array before and after replacements.
10. Write a C program to find the row and column totals of a matrix. Print the output as given below.

			Row total
1	2	3	6
2	4	2	8
6	2	1	9
Col Total: 9	8	5	

11. Write a C program that declares 2 one dimensional character arrays and merge them. Sort the merged array and print the characters in alphabetical order.
12. Write a C program to find the no.of occurrences of the letter 'e' in the sentence given below.

    Hello how are you. I'm fine.
13. Write a C program to check whether the given number is Armstrong number or not.
14. Generate all the prime numbers between the two given ranges.
15. Write a program to compute sum of the following series
    i) 1+2+4+7+……+ n terms
    ii) 1+ 1/8 +1/27+…..