

## Department of Technical Education

Diploma Programme

SECOND SEMESTER

SUBJECT : 'C' Programming Lab

Common to E&C, CS&E & IS&E

Contact Hrs / Week: 6

Contact Hrs / Semester: 96

### General Objectives :

After the completion of the study of this subject students should be able to

- Analyse the given problem
- Think the logic to solve the given problem
- Know the various data types, operators and expressions in C
- Know the various control structures in C
- Understand Arrays, Strings, Structures and Unions in C
- Write programs to solve the given problem in C
- Write structured programs using functions

### Graded Exercises

- 1 WAP to swap the values of two variables without using third variable
- 2 WAP to find the largest/smallest of 3 numbers (using conditional operator)
- 3 WAP to calculate the total interest based on the following  

principal amount (Rs)	rate of interest
$\geq 10000$	20%
$\geq 8000$ & $\leq 9999$	18%
$< 8000$	16%
- 4 WAP to find whether the given character is vowel or not (Use Switch)
- 5 WAP to calculate the roots of a quadratic equation (consider all possible cases) ( Using Nested If and Switch)
- 6 WAP to sum & reverse a given integer
- 7 WAP to check whether the given number is prime or not
- 8 WAP to find the number of and sum of all integers greater than 100 and less than 200 that are divisible by 7.
- 9 WAP to detect the Armstrong numbers in three digits from 100 to 999.  
  
note:- if sum of the digits of the number is equal to number itself, then the no. is called armstrong no
- 10 WAP to evaluate sine series
- 11 WAP to generate fibonacci series
- 12 WAP to convert binary to decimal & vice versa
- 13 WAP to calculate factorial of a given number using function
- 14 WAP to find GCD of two numbers using function
- 15 WAP to find sum and count of positive and negative numbers in an array
- 16 WAP to search for a given number in an array
- 17 WAP to find the transpose of a given matrix
- 18 WAP to addition two matrices
- 19 WAP to multiply two matrices
- 20 WAP to sort a list of names
- 21 WAP to check whether the given string is palindrome or not
- 22 WAP to create a structure with employee details and display the same

- 23 WAP to process student structure containing roll number, class and age as members. The program must read 5 student record in an array of structure and display the details of a student who is eldest. Use a function to find the eldest for which array of structure is an argument.
- 24 WAP to count the number of constants, vowels, digits, white space & special characters in a given sentence.
- 25 WAP to demonstrate # define function.

Scheme of evaluation	
1. Record	05
2. Writing two programs	30
3. Entering one program	10
4. Executing one program	25
5. Print out with results	10
6. Viva voce	20
Total	100 marks

**Reference Books:**

1. Programming in C - E.Balaguruswamy
2. Let Us 'C' - Yashavant Kanetkar
3. Programming with ANSI and Turbo C --- Ashok N. Kamthane
4. The Spirit of 'C' - MULLISH COOPER
5. Basics of Computers and Applications with C programming - Rajesh Hongal
6. A computer Laboratory Referral for Diploma and Engineering Students, Universities Press, T R Jagadeesh et al



