Aditya Institute of Technology and Management (Autonomous), Tekkali

II Year B.Tech (Electronics and Communication Engineering) – 1st Sem.

PROGRAMMING FOR PROBLEM SOLVING LAB

Subject Code: 18ESL202 **Internal Marks:40**
Credits: 1.5 **External Marks:60**

Course Objectives:

- To gain experience about structured programming
- To help students to understand the implementation of C language
- To understand various features in C

Course Outcomes:

At the end of the course students will be able to

CO1: Solve the given problem using the syntactical structures of C language.
CO2: Design programs involving decision structures and loops.
CO3: Apply programming to solve different operations on arrays and strings.
CO4: Develop modularity concept using functions and write programs for allocating memory dynamically.
CO5: Construct C program that uses structures and unions and implement file operations on given application.

List of Experiments

1. Write the C programs to calculate the following
   a) Area of triangle when sides are given.
   b) Program for Type Casting.
   c) Interchanging values of two variables.
2. Write the C programs to perform the following
   a) Read lower case character and convert into upper case.
   b) Find maximum of 3 values using conditional operator.
   c) Calculate area and perimeter of circle.
3. Write C programs for the following using decision making statements
   a) Program to find roots of quadratic equation.
   b) Find the Largest among 3 values.
   c) Calculate the grades of a student.
4. a) Arithmetical operations using switch-case.
   b) Read a number and display in reverse.
   c) Check for Armstrong number property
5. a) Check for strong number property
   b) Generate Fibonacci series.
   c) Generate Prime numbers between two numbers.
6. Implement the following using arrays
   a) Largest and smallest from a list of elements.
   b) Program for Linear Search.
   c) Program for Bubble Sort.

7. Implement the following using arrays
   a) Matrix addition.
   b) Matrix Multiplication.
   c) Program using string handling functions.
8. Implement C Program using any Numerical methods
9. a) Factorial using recursion and non recursion.
   b) GCD using recursion and non recursion.
10. a) Find the sum and average of list of elements using DMA Functions
    b) Implementation of call by reference and call by valve.
11. a) Implementation of array of structure.
    b) Demonstration of Union.
12. a) Copy the contents of one file into another.
    b) Count the number of characters, words and lines in a file.

Text Books

1. B. W Kernighan, Dennis M. Ritchie. The C – Programming Language. 2nd Edition, PHI.
2. A Structured Approach Using C by Behrouz A. Forouzan, Richard F. Gilberg 3 rd Edition.

References

1. Yashwant Kantikar. 2012. Let Us C, 8th Ed.. PBP Publications.
2. E. Balagurusamy. 2011. C Programming. Tata Mc Graw Hills, New Delhi, India.
3. https://www.tutorialspoint.com › Cprogramming › C – Home
4. https://www.programiz.com/c-programming