

# **B. Tech.(CSE) Semester-II**

## **BTPS102-18:Programming for Problem Solving**

### **Lab Assignment Part- II**

**Note:** Last Date of Submission of Complete Assignment is **28<sup>th</sup> April, 2023.**

36. Write a program to implement binary search.
37. Write a program to sort the list of numbers using
  - a. Bubble sort
  - b. Insertion sort
  - c. Selection sort
  - d. Merge sort
  - e. Quick sort
38. Write a function to design a calculator, which can perform addition, subtraction, multiplication, and division.
39. Write a function prime that returns 1 if its argument is a prime number and returns zero otherwise.
40. Write a program to find largest number from a list using function.
41. Write a program to represent the concept of nested functions.
42. Write a recursive program to compute factorial of a number.
43. Write a program to print fibonacci series using recursion.
44. Write a program to compute HCF/GCD using recursion.
45. Write a program to compute Ackerman function using recursion.
46. Write a program to solve the problem of Tower of Hanoi using recursion.
47. Design a structure student\_record to store name, roll no, and marks of 5 subjects. Develop a program to read data for 10 students in a class and list them rank wise.
48. Design a structure that contains three members: name of the country, name of the capital, and per capita income. Using this structure, write a program to list the countries along with their capitals in the decreasing order of their per capita income.
49. Design a structure employee that contains three elements: emp\_code, name, and salary. Write a program for 50 employees that outputs the details of the employee having highest salary.
50. Write a program to illustrate the use of simple pointers.
51. Write a function exchange to interchange the values of two variables, say, x and y. By using both call by value and call by reference.
52. Write a program to illustrate the use of pointers with arrays.
53. Write a program to illustrate the use of functions returning pointers (alike call by reference).
54. Write a program to create a linked list.
55. Write a program to open, read, write, and append a file.
56. Write a program to copy the contents of one file into another.

**Subject Teacher**  
**Dr. Pooja Sharma**