**BCA I(Semester 1)**

Subject: Practical of Problem Solving Through C

Sub Title: Lab based on BCA-16-104

Total Marks =50 External= 50

Time will be according to theory paper BCA-16-104

**List of programs to be performed in lab.**

**Section I**

1. [C program to print "Hello World!" / First C program.](http://www.includehelp.com/c-programs/c-program-to-print-hello-world.aspx)  
   This is our first program in C language; this program will print “Hello World” on the screen, it is implemented using simple method as well as using c language user defined function.
2. [Program to find sum and average of two numbers.](http://www.includehelp.com/c-programs/c-program-to-find-sum-and-average-of-two-numbers.aspx)  
   In this program, we will read two integer numbers and find their SUM and Average and then both results will be printed on the screen.
3. [C program to find quotient and remainder.](http://www.includehelp.com/c-programs/find-quotient-and-remainder.aspx)  
   In this program, we will read divisor and dividend and then find the quotient and remainder, results will be printed on the screen.
4. [Program to calculate simple interest.](http://www.includehelp.com/c-programs/c-program-to-calculate-simple-interest.aspx)  
   In this program we will read principle, amount and rate and then calculate simple interest of borrowed principle based on give number of years and rate.
5. Write a c program to print Fibonacci series of given range.
6. Write a c program to generate multiplication table.
7. Write a c program to print ASCII value of all characters.

**Section II**

1. [Program to check whether number is EVEN or ODD.](http://www.includehelp.com/c-programs/c-program-to-check-number-is-even-or-odd.aspx)  
   In this C program, we will read an integer number and program will check whether given integer number is EVEN or ODD.
2. [Program to find largest number among three numbers.](http://www.includehelp.com/c-programs/c-program-to-find-largest-number-among-three-numbers.aspx)  
   In this C program, we will read three integer number from user and print the largest number among them.
3. [Program to find gross salary of an employee.](http://www.includehelp.com/c-programs/c-program-to-calculate-gross-salary-of-an-employee.aspx)  
   In this program, we will read Basic Salary of an employee and calculate HRA, DA, and Provident Fund, based on these parameters we will calculate the gross salary of the employee and print it on the screen.
4. [C program to convert temperature from Fahrenheit to Celsius and vice versa.](http://www.includehelp.com/c-programs/c-program-to-convert-temperature-from-fahrenheit-to-celsius.aspx)  
   This C program is to convert temperature from Fahrenheit to Celsius and vice versa, program will ask the choice for conversion from the user and find the converted temperature based on given input.
5. [C program to calculate X^N (X to the power of N) using pow function.](http://www.includehelp.com/c-programs/c-program-to-calcuate-x-to-the-power-of-n-using-pow-function.aspx)  
   This C program will read two integer number as X and Y and them calculate the X^Y (X to the power Y) and print the result on Screen.
6. [C program to find the difference of two numbers.](http://www.includehelp.com/c-programs/c-program-to-find-the-difference-of-two-numbers.aspx)  
   This C program cannot be used to find the subtraction, in this program we are going to find the differences of two integer numbers. Here, we will check which largest number is and to get the difference, smallest number will be subtracted from largest number.
7. [C program to print size of variables using sizeof() operator.](http://www.includehelp.com/c-programs/c-program-to-print-size-of-variables-using-sizeof-operator.aspx)  
   sizeof() is an operator in C language, which is used to print the occupied size of a variable (or size of a value), in this C program, we will print the size of different declared variables.
8. [C program to demonstrate examples of escape sequences.](http://www.includehelp.com/c-programs/c-program-to-demonstrate-example-of-escape-sequences.aspx)  
   Escape sequences are the set of characters followed by the escape (\), in this program, we will learn to use of different escape sequence like new line character, backspace character etc.
9. [C program to find area and perimeter of circle.](http://www.includehelp.com/c-programs/c-program-to-find-area-and-perimeter-of-circle.aspx)  
   This c program will read radios of a circle and find their perimeter and area of a circle.
10. [C program to find area of a rectangle.](http://www.includehelp.com/c-programs/c-program-to-find-area-of-a-rectangle.aspx)  
    This c program will read length and breadth of a rectangle and calculate its area; area of rectangle will be printed on the screen.
11. [C program to calculate HCF of two numbers.](http://www.includehelp.com/c-programs/c-basic-programs-to-find-hcf-of-two-numbers.aspx)  
    This program will read two integers and print their HCF (Highest Common Factor).
12. [C program to multiply two numbers using plus operator.](http://www.includehelp.com/c-programs/c-basic-programs-to-multiply-of-two-numbers-using-plus-operator.aspx)  
    This C program will read two integer numbers and calculate their multiplication (product) using plus operator, here we will not multiplication (\*) operator.
13. [C program to demonstrate example of global and local scope.](http://www.includehelp.com/c-programs/c-basic-programs-to-demonstrate-example-of-global-and-local-scope.aspx)  
    Basically, variables have two types of scopes, in which they can be accesses. This C program, we will demonstrate use of Global and Local scope of variables.
14. [C program to demonstrate example of floor and ceil functions.](http://www.includehelp.com/c-programs/c-basic-programs-to-demonstrate-example-of-floor-and-ceil-functions.aspx)  
    This C program will find the rounded float values using floor and ceil function, which are the library functions of math.h header file.
15. [C program to convert feet to inches.](http://www.includehelp.com/code-snippets/c-program-to-convert-feet-to-inches.aspx)  
    This C program will read distance in feet and convert the distance in inches. Then program will print converted feet and remaining inches on the screen.
16. [C program to print value in Decimal, Octal, Hexadecimal using printf.](http://www.includehelp.com/code-snippets/printing-value-in-decimal-octal-hexadecimal-using-printf-in-c.aspx)  
    This C program will read an integer value using decimal format and print the values in Octal, Decimal and Hexadecimal format using printf.
17. [C Program to calculate Employee and Employer Provident Fund.](http://www.includehelp.com/code-snippets/calculate-employee-and-employer-provident-fund-using-c-program.aspx)  
    In this C program, we will read BASIC salary of an employee and calculate employee and employer (company) provident fund contribution.
18. [C program to design calculator with basic operations using switch.](http://www.includehelp.com/c-programs/calculator-using-switch.aspx)  
    This program will read two integer numbers and perform basic operations like +, -, \*, / and % using switch case statement in C language (this program is a simple calculator program with basic operations).
19. [C program to check whether number is EVEN or ODD using switch.](http://www.includehelp.com/c-programs/check-even-odd-using-switch.aspx)  
    This program will read an integer number and check whether it is EVEN or ODD using switch case statement in C language.
20. [C program to find number of days in a month using switch case.](http://www.includehelp.com/c-programs/find-number-of-days-in-a-month-using-switch-case.aspx)  
    This program will read month value and print total number of days in input month in C language

**Section III**

**One Dimensional Array Programs / Examples in C**

1. [C program to read and print One Dimensional Array of integer elements.](http://www.includehelp.com/c-programs/c-program-to-read-and-print-one-dimensional-array.aspx)
2. [C program to calculate Sum, Product of all elements.](http://www.includehelp.com/c-programs/c-program-to-calculate-sum-and-product-of-array-elements.aspx)
3. [C program to find Smallest and Largest elements from One Dimensional Array Elements.](http://www.includehelp.com/c-programs/c-program-to-find-largest-and-smallest-element-among-array-elements.aspx)
4. [C program to replace all EVEN elements by 0 and Odd by 1 in One Dimensional Array.](http://www.includehelp.com/c-programs/c-program-to-replace-even-and-odd-elements-by-1-and-0.aspx)
5. [C program to merge Two One Dimensional Arrays elements.](http://www.includehelp.com/c-programs/c-program-to-merge-two-arrays.aspx)
6. [C program to Add and Subtract of Two One Dimensional Array elements.](http://www.includehelp.com/c-programs/c-program-to-add-and-subtract-elements-of-two-arrays.aspx)
7. C program to sort an one dimensional array in ascending order.
8. C program to sort an one dimensional array in descending order.
9. C program to delete given element from one dimensional array.
10. C pointers Programs
11. Program to create, initialize, assign and access a pointer variable.
12. Program to swap two numbers using pointers.
13. Program to change the value of constant integer using pointers.
14. Program to print a string using pointer.
15. Program to count vowels and consonants in a string using pointer.
16. Program to read array elements and print with addresses.
17. Program to read and print student details using structure pointer, demonstrate example of structure with pointer.
18. Program to print size of different types of pointer variables.
19. Program to demonstrate example of double pointer (pointer to pointer).
20. Program to demonstrate example of array of pointers.

**Section IV**

1. Write a C program to find length of a string.
2. Write a C program to copy one string to another string.
3. Write a C program to concatenate two strings.
4. Write a C program to compare two strings.
5. Write a C program to convert lowercase string to uppercase.
6. Write a C program to convert uppercase string to lowercase.
7. Write a C program to toggle case of each character of a string.
8. Write a C program to find total number of alphabets, digits or special character in a string.
9. Write a C program to count total number of vowels and consonants in a string.
10. Write a C program to count total number of words in a string.
11. [C program to find number of lines in a file.](http://www.includehelp.com/c-programs/find-number-of-lines-in-a-file.aspx)  
    This program will read a file and find the total number of file in it using C program.
12. [C program to create, open and close a file.](http://www.includehelp.com/c-programs/c-program-to-create-a-file-file-handling-programs.aspx)  
    This C file handling program will create, open a file and then close the file.
13. [C program to write text (characters) into file and print.](http://www.includehelp.com/c-programs/c-program-to-create-and-write-read-text-in-a-file-file-handling-programs.aspx)  
    This C file handling program will create a file in write mode and write the text characters (character by character) into the file and then read character by character from the file.
14. [C program to compare contents of two files.](http://www.includehelp.com/c-programs/c-program-to-compare-contents-of-two-files.aspx)  
    This C program will read the content of two file and compare them, content will be read character by character and compare by the same way (character by character).
15. [C - Read Content of a File using getc() using C Program.](http://www.includehelp.com/code-snippets/read-content-of-a-file-using-getc-using-c-program.aspx)

ANJALI JOLLY

ASSTT. PROF. COMPUTER DEPTT.