Programme: B.C.A   **Semester: I**

C PROGRAMMING & PC SOFTWARE LAB

Course Code: 18BCAIP1   **No. of Hours: 60**

COURSE OBJECTIVES:

- To analyze the program step by step and be able to represent it graphically using a flowchart.
- Recognize and understand the syntax and construction of C program.
- It aims to train the student in writing, compiling and execution of the C program.
- Practically apply all the concepts that have been covered in the theory course.

LEARNING OUTCOMES:

- Analyze the problem and understand the flow using design techniques.
- To get familiarized with the syntax and to apply efficiently in solving the problem.
- To get the hands on experience in designing, writing and implementing efficient programs using the concepts learnt.
- To learn problem solving techniques using C

PART- A

1. Write a C program to demonstrate the usage of operators and data types by converting temperature in Fahrenheit scale to Celsius and vice versa
2. Write a C program to demonstrate while loop to print the Fibonacci Series.
3. Write a C program to demonstrate switch case by accepting a string and finding the number of vowels in it.
4. Write a C program to implement character handling functions by counting the number of numerals, upper case, lower case and special characters in a given string.
5. Write a C program to implement string handling functions by checking whether the given string is palindrome or not.
6. Write a C program for finding the factorial of an integer using recursion.
7. Write a C program to compute sum of the elements in an array using pointers.
8. Write a C program to demonstrate macro with arguments by finding the area of a circle.
9. Write a C program to add two numbers using command line arguments.

PART- B

10. Write a C program to demonstrate if else statement to find the roots of a quadratic equation.
Description: Nature of root of quadratic equation can be known from the quadrant: b^2-4ac.
       If $b^2-4ac>0$ then roots are real and unequal.
       If $b^2-4ac=0$ then roots are real and equal.
       If $b^2-4ac<0$ then roots are imaginary.

11. Write a C program to implement nesting of for loops to arrange numbers in ascending order.

12. Write a C program to calculate the Mean, Variance and Standard Deviation of list of values by using one dimensional array.

Description:
Mean= Average of the numbers
Variance=(Summation((Xi-average of numbers)*(Xi-average of numbers))) / total no of elements. Where i=1 to n is the total no. of elements
Standard Deviation=Square root of the Variance.

13. Write a menu driven program in C to read two matrices and compute their sum and product using functions.

14. Write a C program to show the difference between 'call by value' and 'call by reference' by swapping two numbers.

15. Write a C program to demonstrate the difference between structure and union using employee details.

16. Write a C program to demonstrate nested structures using student and book details.

17. Write a C program to access the structure members through pointers using dynamic memory allocation.

18. Write a C program to copy contents from one text file to another text file.

PC SOFTWARE LAB

COURSE OBJECTIVES:

- To make the students get familiar with the computer.
- To learn the basic tools and applications in MS OFFICE.

LEARNING OUTCOMES:

- The students will be able to present their ideas and work using MS OFFICE tools.
- To use MS EXCEL tool to learn statistical techniques.

1. Design an invitation with cover page for college day celebration. Add program schedule using list, include college logo. Use appropriate color, font size and style.

2. Prepare a Timetable in word document. Apply cell alignment, merge cell where ever is needed. Table should be bordered and shaded. Choose appropriate font size, color and style.

3. Prepare a newspaper layout which includes the following format. Include the headline for the news. Include the content in 3 columns and add an appropriate picture.

4. Prepare a word document containing mathematical equations.

5. Using mail merge prepare a letter inviting parents of students in a class, to attend Parent – mentor meeting in your college. Include acknowledgement slip also. Include college name in the header section and address in the footer section.

6. Draw a picture using paint. Use at least 5 tools to draw the picture . Insert picture into a word document. Apply formatting features for the image (shading, scaling, rotate).

7. Prepare a spreadsheet to compute measures of central tendency, dispersion, correlation and testing of statistical hypothesis.

8. Prepare a spread sheet indicate sales details with columns product and sales per year for 5 years. Use freeze pane and merge cells for title. Project the details using any graph of your choice. Rename the worksheet with an appropriate name.

9. Using an excel sheet prepare an electricity bill for 10 customers. The data should include name, bill no, RRno, Previous Reading, Current reading, tariff, interest and calculate unit consumed & amount to be paid.

10. Prepare a pay-slip using a worksheet. The worksheet should contain Employee ID, Name, Basic Pay, House Rent Allowance percentage, Dearness Allowance percentage, provident fund Percentage, and tax percentage. Calculate the net pay. Write a macro that sets worksheet name as salary slip, title, and font type and font color.

11. Prepare a Power Point presentation on the course details for various courses in the college with 10 slides. Apply different animation options.

12. Prepare a presentation on current trends in Information Technology with 10 slides. Apply formatting and slide transition.