B.Sc. I YEAR Computer Science (For Regular Students)

Paper	Subjects	Internals			Theory	Total (B)	Total A+B	Practical	Grand Total
		3 Months	6 Months	Total (A)					
I	Computer Fundamentals and PC-Packages	10	10	20	40	80	100	50	150
II	Programming in C				40				

Learning outcomes of BSc Computer Science

PLO-1. Demonstrate the aptitude of Computer Programming and Computer based problem solving skills.

PLO-2. Display the knowledge of appropriate theory, practices and tools for the specification, design, and implementation

PLO-3. Ability to link knowledge of Computer Science with other two chosen auxiliary disciplines of study.
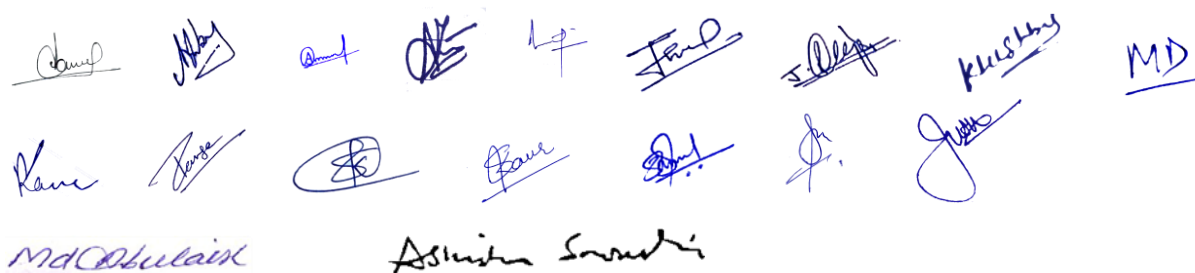
PLO-4. Ability to understand, design, and analyses precise specifications of algorithms, procedures, and interaction behaviour.

PLO-5. Ability to apply mathematics, logic, and statistics to the design, development, and analysis of software systems

PLO-6. Ability to be equipped with a range of fundamental principles of Computer Science that will provide the basis for future learning and enable them to adapt to the constant rapid development of the field.

PLO-7. Ability of working in teams to build software systems.

PLO-8. Ability to identify and to apply relevant problem-solving methodologies

B.Sc. I YEAR COMPUTER SCIENCE
PAPER I
COMPUTER FUNDAMENTALS AND PC-PACKAGES

Course Objective: This course is designed to understand the basic terminologies of computer. PC-Software focuses on providing basic training of Office Automation Software. The course provides a comprehensive coverage of computer architecture. It discusses the main components of the computer and the basic principles of its operation. It demonstrates the relationship between the software and the hardware and focuses on the foundation concepts that are the basis for current computer design.

Course Outcome: After completing the course students will be able to understand the basic operations of computer and will be able to opt for jobs as an Office Automation Clerk, Support Assistant. Understand the fundamentals of different instruction sets architecture and their relationship to the CPU design. Understand the principles and the implementation of computer arithmetic. Understand the operation of modern CPU's including memory systems and buses.

UNIT-I
Introduction to Computers: Evolution, Capabilities, Limitations, Classification of Computer, Block Diagram of Computer, Generations of Computer, Input and Output Devices, Memory Organization: Primary & Secondary Memory and its types, Cache memory, Virtual memory, Hardware, Software, and Firmware.

UNIT-II
Number System: decimal, binary, octal, hexadecimal, conversions from one base to another base. Codes: ASCII code, EBCDIC code, Gray code. Linux: Features of Linux, Workspace, The Panel, shutting down the system, date and time, file manager, folders, Trashcan, Graphic image access, Creating and managing folders, introduction to LibreOffice.

UNIT-III
Writer: Introduction to Writer, Parts of main window, working with documents, Text and character Formatting, Formatting pages, working with graphics, mail- merge, working with Tables, printing documents.
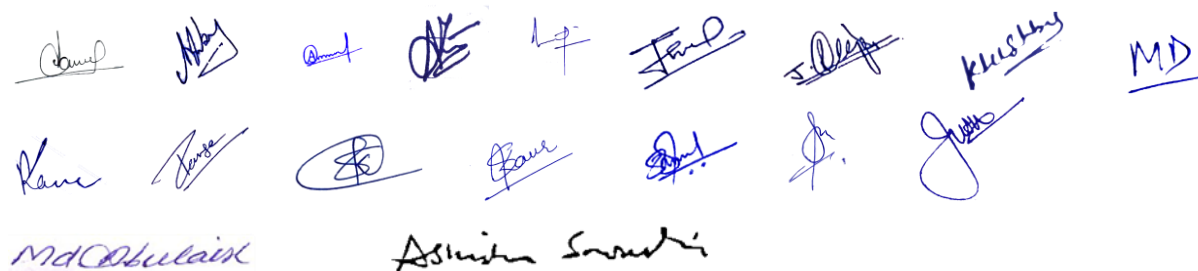
UNIT-IV
Introduction to Calc: Introduction of spreadsheet using LibreOffice Calc, spreadsheet, sheets & cells, Editing & formatting data, conditional formatting, creating formulas, Mathematical & Logical functions.

UNIT-V
Introduction to Impress: features of Impress, starting Impress, Impress window, workspace views, create presentation using wizard, formatting a presentation, working with graphics & animation, printing a presentation, page notes & audience handouts.

Text Books
1. Fundamental of computers by P.K. Sinha
2. Libre Office5

Practical List

1. Write steps for creating a formatted CV having the following fields objective, name, father's name, mother's name, date of birth, address, email-id, qualification, hobbies etc. using templates & wizard.

2. Create a formatted table using Table Menu and do all the operation of the table.

3. Send an invitation letter to your ten friends for birthday party using Mail Merge.

4. Create a formatted "Appreciation Certificate" and "Certificate of Proficiency" for the best student.

5. Do the following things
   a. Use Header & Footer to insert a header, including your last name and the page number, positioned at the top right side of the page.
   b. Use Roman numerals (i, ii, iii, etc.) for the page numbers for the Table of Contents, List of Figures, and List of Tables pages.

6. Do the following things with tables
   a. Maximize row width and height.
   b. Centre text in cells.
   c. Change text color and cell color

7. Create a formatted pay slip of 10 employees having following fields: Employee No, Employee Name, Designation, Phone No, Address, Basic Pay, DA (60% of basic), HRA (40% of basic), Gross Pay.

8. Create a formatted Mark-sheet with 10 records and also prepare a chart.

9. Create a presentation on topic "My Goal" with background and slide layout.

10. Create a presentation on any one topic of your choice based on college assembly.

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PAPER II

PROGRAMMING IN C

Course Objective: The course aims to provide exposure to problem-solving through programming. It aims to train the student to the basic concepts viz. conditional and decision making, file handling of the C-programming language. This course involves a lab component which is designed to give the student hands-on experience with the concepts.

Course Outcome: After the course the students will be able to identify and abstract the programming task, will be able to write pseudo-code of the task, choose the right data representation formats based on the requirements of the problem and hence use the language to efficiently solve the task.

UNIT-I
Classification of programming language: procedural languages, problem-oriented languages, nonprocedural languages. Structured programming concepts: modular programming: top down analysis, bottom up analysis, structured programming. Problem solving using computers: program definition and analysis, program design, coding, compilation, debugging and testing, documentation, implementation and maintenance.

UNIT–II
Introduction to C language: constants, variables, keywords, data types, operators, expressions, operator precedence associativity. Structure of C program: variable declaration, declaration of variable as constant.

UNIT-III
Managing input and output operators: formatted and unformatted. Control statements: branching, jumping & looping, scope rules and storage classes. Arrays (one and two dimensional).

UNIT-IV
String: Declaration and Initialization of Strings, Array of Strings, Built-in String Functions strlen, strcpy, strcmp, strcat, strlwr, strrev function, other String functions.Functions: user defined functions, stored functions, categories in functions, passing arguments to functions, recursion.

UNIT-V
Pointers: operators, declarations, pointer to arithmetic, array of pointers. Structures: declaring, accessing, initializing array of structures. File handling in C: opening and closing a data file, inserting data to data file. modes of file (read, write and append).

Text Books-
1. Programming in C by S.S. Bhatia
2. How to solve it by computers by R.G. Dromy, PHI
3. Let us C by Yashwant Kanetkar
4. ANSI C by E. Balagurusamy

Reference Books-
1. How to design programs-An Introduction to programming and computing-Felleisen et al, PHI publication.
2. Introduction to algorithms by cormen, PHI.
3. Programming in C by Dennis Richie.

Practical List

1. Program to Print First N Prime Numbers

2. Program to Find Whether the Given Number is a Prime Number

3. Program to Find Largest of Three Numbers

4. Program to Find Factorial of a Number without using Recursion

5. Program to Find Sum and Average of Three Real Numbers

6. Program to Print a Table of any Number

7. Program to Reverse a Given Number

8. Program to Find Factorial of a Number using Recursion

9. Program to Print Fibonacci Series

10. Program to Print the Following Output:

```
            1
           121
          12321
         1234321
        123454321
       12345654321
      1234567654321
     123456787654321
```

11. Write a Program to calculate simple interest.

12. Basic salary of an employee is input through the keyboard. The DA is 25% of the basic salary while the HRA is 15% of the basic salary. Provident Fund is deducted at the rate of 10% of the gross salary(BS+DA+HRA). Program to Calculate the Net Salary.

13. Program to Find Area of Square & Circumference of a   Circle

14. Program to Show Call by Reference

15. Program to Show Call by Value

16. Program to Check Whether a Character is a Vowel or not by using *switch* Statement.

17. Program to Check Whether the Given Number is an Armstrong Number

18. Write a Program to convert temperature. (Fahrenheit –Centigrade and vice-versa)

19. Program to Implement *continue* Statement

20. Program to Implement *break* Statement

21. Program to Implement Structure

22. Program to Implement Structure with Array

23. Program to Write and Read a Character from a File

24. Program to Write and Read an Integer from a File