**B.C.A. Semester – I**

**BCA-101 : Fundamentals of Programming Language 'C'**

| Teaching Scheme (Per week) | | Teaching Scheme (Per semester) | | Examination Scheme | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | INT | | EXT | | TOTAL | |
| Th. (hours) | Pr. (hours) | Total Hours | Credit | Th. (marks) | Pr. (marks) | Th. (marks) | Pr. (marks) | Th. (marks) | Pr. (marks) |
| 4 | -- | 40 | 4 | 30 | -- | 70 | -- | 100 | -- |

**Unit - I** **[18 Marks]**

**Introduction to Programming:**

Concepts of Algorithm and Flowcharts, problem solving examples using algorithm and flowchart, Types of Programming languages, Characteristics of higher level language, Compiler and Interpreter

**Overview of C:**

Introduction, Importance of C, Sample C programs, Basic structure of C programs, Programming style, executing of C program.

**Constants, Variables and data Types:**

Introduction, Character Set, C tokens, Keywords and Identifiers, Constants, Variables, Data types, Declaration of Variables, Defining symbolic constants.

**Unit - II** **[17 Marks]**

**Operators and Expression :**

Introduction, Arithmetic of Operators, Relational Operators, Logical Operators, Assignment Operators, Increment and Decrement Operators, Conditional Operators, Bit-wise Operators, Special Operators, Arithmetic Expressions, Evaluation of expressions, Precedence of arithmetic operators, Type conversions in expressions, Operator precedence and associativity, Mathematical functions.

**Managing Input and Output Operators :**

Introduction, reading a character, writing a character, formatted input, formatted output.

**Unit - III** **[18 Marks]**

**Decision making branching:**

Introduction, Decision making with IF statement, Simple IF statement, the IF ELSE statement, Nesting of IF … ELSE statements, The ELSE IF ladder, The switch statement, the turnery (? :) Operator, the GOTO statement.

**Decision Making Looping:**

Introduction, the WHILE statement, the DO statement, The FOR statement, Jumps in loops Break and continue.

**Unit - IV** **[17 Marks]**

**Array :**

Introduction, One-dimensional, arrays, Two-dimensional arrays, Initialization of two-dimensional arrays, Concept of Multidimensional arrays

**Handling of Character strings :**
Introduction, Declaring and initializing string variables, Reading strings from terminal, Writing strings to screen, Arithmetic operations on characters, Putting string together, String Operations: String Copy, String Compare, String Concatenation And String Length, String Handling functions, Table of strings.

**Text Book:**

1. **Programming in ANSI C**, Balagurusamy, Tata McGraw-Hill

**Reference Books:**

1. Programming in C, by Pradip Dey & Manas Ghosh, Publisher – Oxford
2. The Complete Reference, Herbert schildt Fourth Edition
3. Let Us C , Yashwant Kanetkar, BPB Publications
4. Programming in C, by Reena thareja Publisher – Oxford

**Question Paper Scheme:**

**University Examination Duration: 3 Hours.**

Q.1 - Unit-I (12 Marks)
A. Objective/ Short Questions.
B. Descriptive/ Long questions.
Q.2 - Unit-II (12 Marks)
A. Objective/ Short Questions.
B. Descriptive/ Long questions.
Q.3 - Unit-III (12 Marks)
A. Objective/ Short Questions.
B. Descriptive/ Long questions.
Q.4 - Unit-IV (12 Marks)
A. Objective/ Short Questions.
B. Descriptive/ Long questions.
Q.5 - Programs
A. Unit I & II (10 Marks)
B. Unit III & IV (12 Marks)

Note: All Objective/ Short Questions are compulsory, no option will be given.