

Kadi Sarva Vishwavidhyalaya, Gandhinagar

BCA Semester I

BCA103 – Part 2: Core 1

Programming Paradigm with ‘C’

Rationale:

To develop the basic concepts of programming using world’s most popular Middle Level Language through “C”

Learning outcomes: The Students will be able to . . .

- Create fundamentals of structure programming with basic structure
- Develop program. In such a way that machine can take decision by programming
- Know importance of an array by real life example as well as technical problem solving.
- Develop functions and enrich their skill to library function and user define side.

Teaching Methodology:

- Application and Real life examples
- Theory Method with illustration and presentation
- Models
- Charts
- Practical Implementation Simulators
- Animated video

Teaching and Evaluation Scheme:

| Sub. Code | Sub. Type | Subject Title | Teaching Scheme | | Exam Scheme | | | | |
|-----------|-----------|-------------------------------|-----------------|-------------|-------------|----------|-----------|----------|-------------|
| | | | Cr. | Hrs. / Week | Theory | | Practical | | Total Marks |
| | | | | | Internal | External | Internal | External | |
| BCA 103 | Core | Programming Paradigm with ‘C’ | 4 | 4 | 30 | 70 | - | - | 100 |

Course Content:

Unit-I (25%)

Objective: This reference has been prepared for the beginners to help them understand Logic Development, execution of program.

Introduction to Programming and Tools of Problem Analysis: Concept and need of programming language, Concepts of Algorithm and Flowchart (with example), Translator- Compiler, Interpreter, linker, loader and assembler.

Overview of C: Introduction, History of C, Basic structure of C program, Sample of C program, executing of C program. Character Set, Usage of C tokens, Types of Tokens- Constants, Keywords, Identifiers, Variables (Declaration and Rules), Defining symbolic constants, Back Slash Character.

Text Book Reference Page No: 1 to 30

Unit-II

(25%)

Objective: Get brief idea of operators, data type, formatted and non-formatted input output functions for building block of Programming in C.

Basics Of C Language: Introduction, Need of Operators-Arithmetic Operators, Relational Operators, Logical Operators, Assignment Operators, Increment and Decrement Operators, Conditional Operators, Bit-wise Operators, Special Operators, importance of Data Types, Types of Data Types, Arithmetic Expressions, Evaluation of expressions, Precedence of arithmetic operators, implicit and explicit Type conversions in built-in data type, Operator precedence and associativity, Mathematical functions (pow(), sqrt(), ceil(), floor())

Input Output Functions: Formatted and Non-formatted- Printf(), Scanf(), getchar(), putchar(), clrscr(), getch(), gets(), puts().

Text Book Reference Page No: 31 to 98

Unit-III

(25%)

Objective: Learn about Decision type Control, Looping type control and special control constructs in C and the technique of putting them to use in certain condition or repeat a group of statements.

Control and Iterative Statement: Concept and Application of Decision making Statement - Simple IF statement, IF ELSE statement, Nesting of IF ... ELSE statements, ELSE IF ladder, Switch statement, ternary (? :) Operator, GOTO statement.

Decision Making Looping: Concept and Application of Looping - WHILE statement, DO- WHILE statement, FOR statement, Break and continue, Nested Looping.

Text Book Reference Page No: 114 to 174

Unit-IV

(25%)

Objective: Get brief idea about how to handle large volume of data in terms of reading, processing and printing. Understand what a string function is and how its use benefits in program.

Array and Strings: Concept and Application of Array, Declaration and initialization of One-dimensional arrays, Declaration and initialization of Two-dimensional arrays, Concept of Multidimensional arrays.

Handling of Character strings: Declaring and initializing string variables, Reading strings from terminal, writing strings to screen.

String Operations: Importance of String Handling functions - String Copy, String Compare, String Concatenation and String Length, Table of strings

Text Book Reference Page No: 190 to 252

Text Book: Programming in ANSI C, Balagurusamy, Tata McGraw-Hill 5th Edition

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 Reenathareja Publisher–Oxford

Reference Link:

- www.carrerskill.com www.mcqsets.com
- www.indiabix.com www.sanfoundry.com

Question Paper Scheme:

| | | |
|------------------------------|--------------------|-----------------|
| University Examination | Duration: 3 Hours. | Total marks: 70 |
| Q.1-Unit-I & II | | (11 Marks) |
| Objective / Short Questions | | |
| Q.2-Unit-I | | (12 Marks) |
| Descriptive / Long questions | | |
| Q.3-Unit-II | | (12 Marks) |
| Descriptive / Long questions | | |
| Q.4-Unit-III & IV | | (11 Marks) |
| Objective / Short Questions | | |
| Q.5-Unit-III | | (12 Marks) |
| Descriptive / Long questions | | |
| Q.6-Unit-IV | | (12 Marks) |
| Descriptive / Long questions | | |

Note: Q.2,3,5 and Q.6 must have at least 40% Internal Options (i.e. Attempt Any 3 out of 5)

X ----- X