PGDCA SEMESTER – I
DCA-101 : Logic Development using Programming Language 'C'

University Examination Duration: 3 Hours.

UNIT : I (17 Marks)

Overview of C:

Importance of C, sample C programs, basic structure of C programs, programming style, executing C program.

Constants, Variables and Data Types:

Character set, C tokens, keywords and identifiers, constants, variables, data types, declaration of variables, assigning value to variable, defining symbolic constants.

Operators and Expression:

Operators - arithmetic, relational, logical, assignment, increment-decrement, conditional, bit-wise and special.

Arithmetic expressions, evaluation of expressions, precedence of arithmetic operators, type conversions in expressions, operator precedence and associativity, mathematical functions.

Managing Input and Output Operators:

Reading and writing a character, formatted input-output.

UNIT : II (17 Marks)

Decision Making and branching:

Decision making with IF statement, simple IF statement, the IF-ELSE statement, nesting of IF … ELSE statements, the ELSE IF ladder, the switch statement.

Decision Making and Looping:

Looping statements - WHILE, DO and FOR. Nesting and Jumps in loops.

Arrays:

One-dimensional, two-dimensional and multidimensional arrays.

Handling of Character Strings:

Declaring and initializing string variables, reading string from terminal, writing string to screen, arithmetic operations on character, putting string together, comparison of two strings, string handling functions, table of strings.

UNIT : III (18 Marks)

User-Defined Functions:

Need for user-defined functions, the form of c function, return values and their types, calling a function, category of functions, no arguments and no return values, arguments with return values, handling of non-integer functions, nesting of functions, recursion, functions with arrays, the scope and lifetime of variables in functions.

Structures and Unions:

Structure definition, giving values to members, structure initialization, comparison of structures, arrays of structures, arrays within structures, structures within structures, structures and functions, unions, size of structures, bit fields.

UNIT : IV (18 Marks)

Pointers:

Definition, accessing the address of variable, declaring and initializing pointers, accessing a variable through its pointer, pointer expressions, pointer increments and scale factor, pointers and arrays, pointers and character strings, pointers and functions, pointers and structures.

File Management in C:

File concept, various operations on files – Defining, opening,, closing and input/ output. error handling during I/O operations, random access files, command line arguments.

BOOKS :

ANSI C E. Balaguruswami - TMH Publications

Mastering Turbo C Stan Kelly-Bootle - BPB Publications

Question Paper Scheme:

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: Options should be given in all questions.