I BCA C2-Programming In C

(Bold Questions are important Unit wise)

UNIT-I

Chapter-1

1. **What is Algorithm? Explain features of algorithms?(10M)**
2. What is flow chart? Explain the significance of flowcharts?(10M)
3. What is Pseudocode? Explain with examples?(5M)
4. What is programming Language?(5M)
5. **Discuss about generations of programming languages?(10M)**
6. **What is structured programming? Explain with an example?(10M)**

Chapter-2

1. Explain the history of C-language?(5M)
2. What are the characteristics of C-Language?(5M)
3. **Explain the structure of C-program with an example?(10M)**
4. What are the files used in C-program execution?(10M)
5. **Explain compiling and executing C-Programming?(10M)**
6. What are comments in C?(5M)
7. What are the rules of identifiers?(5M)
8. **What is Datatype? Explain different types of datatypes in C?(10M)**
9. **Discuss about a) variables b)Constants(10M)**
10. **Explain about I/O statements in C?(10M)**
11. **What is operator? Explain about different types of operators in C?(10M)**
12. **Explain about Type casting and type conversion?(10M)**

UNIT-II

Chapter-1

1. **Discuss about Decision Control statements in C?(10M)**
2. **Explain about Iterative statements and nested loops in C?(10M)**
3. **Discuss about unconditional(break,continue) statemnets in C?(10M)**
4. Explain the use of goto statement in C?(10M)

Chapter-2

1. Define function? Explain the need of functions in C?(5M)
2. **Define function? How to use functions in C?(function definition,declaration and call)(10M)**
3. Explain about return statement?(5M)
4. **Discuss about passing parameters to functions in C?(main call by value, call by refrence)(10M)**
5. Discuss about scope of variable sin C?(10M)
6. **Explain about Storage classes in C?(10M)**
7. **Define recursion? Explain recursion and its types in C?(10M)**

UNIT-III

Chapter-1

1. **Define an array? Explain how to create,insert and access an array in C?(10M)**
2. How to calculate the length of an array?(5M)
3. **Explain about 1D array operations with examples?(10M)**
4. **Explain passing 1D array to functions in C?(10M)**

5. **Define 2D Array? Explain the operations on 2D arrays?(10M)**
6. Discuss about passing 2D arrays to functions in C?(10M)
7. Explain about Multi-dimentional arrays in C?(5M)

Chapter-2

1. Define String? Explain how string is created in C?(5M)
2. **Explain string reading and writing functions in C?(10M)**
3. Discuss about String Taxonomy?(5M)
4. Explain about character handling functions in C?(10M)
5. **Discuss about string handling functions in C?(10M)**
6. Discuss about array of strings in C? (5M)

UNIT-IV

Chapter-1

1. Explain the representation of computer memory?(5M)
2. **Define pointer? Explain how to use pointers in C? (5M)**
3. **Discuss about importance and limitations of pointers in C?(advantages and drawbacks of poinetrs)(10m)**
4. **Discuss about pointer expressions and Arithmetic?(10M)**
5. Explain about a)NULL pointer b) Generic pointer(5M)
6. **Explain passing pointers as function argumemts in C?(10M)**
7. **Explain how pointers used in arrays(pointers and arrays)(10M)**
8. Explain passing arrays to functions using pointers?(10M)
9. Discuss about memory allocation in C programs?(5M)
10. **Discuss about memory allocation functions in C?(10M)**

Chapter-2

1. **Define structure? Explain the creating and intializing a structure?(5M)**
2. Explain how to access structure members?(5M)
3. **Define structure? Explain nested structure in C?(10M)**
4. Explain about array of structures in C?(10M)
5. **Define union how to access union elements?(10M)**
6. Explain the concept of unions inside structures?(5M)
7. **Explain about Enumarated data tyes in C?(10M)**

UNIT-5

1. Define File? Explain Text stream and File Streams in C?(5M)
2. What is file ? What are the types of files in C?(5M)
3. **Define File ?How to use files in C-Programming?(10M)**
4. **Discuss about reading and writing functions of files in C?(10M)**
5. **How to detect the end of the file?(10M)**
6. **Explain Error handling in file operations?(10M)**
7. Explain about Command Line arguments in C?(10M)

PROGRAMMING IN C

Semester	Course Code	Course Title	Hours/Week	Hours	Credits
I	C2	PROGRAMMING IN C	4	60	4

Course Objectives:

- Provides knowledge on Algorithms, Flow chart and different programming languages.
- To train the students with basic concepts of programming using C.
- Provides complete knowledge of C language.
- Helps to develop logics which will help them to create program and applications in C.
- Learning the basic programming constructs, they can easily switch over to any other language in future.

Course Outcomes:

Upon successful completion of this course, students will be able to-

- Understand the basic terminology used in computer programming.
- Write, compile and debug programs in C language.
- Use different data types in a computer program.
- Design programs involving decision structures, loops and functions.
- Understand the dynamics of memory by the use of pointers and Structures.
- Apply different operations in File handling.

Syllabus

UNIT - I:

Introduction to Algorithms and Programming Languages: Algorithm - Key features of Algorithms - examples of Algorithms,Flow Charts– Pseudo code, Programming Languages – Generation of Programming Languages – Structured Programming Language.**Introduction to C**: Introduction – Structure of C Program, Writing the first C Program, File used in C Program – Compiling and Executing C Programs, Using Comments – Keywords – Identifiers, Basic Data Types in C, Variables – Constants, I/O Statements in C, Operators in C, Programming Examples, Type Conversion and Type Casting.

UNIT - II:

Control Structures and Functions: Decision Control and Looping Statements: Introduction to Decision Control Statements, Conditional Branching Statements, Iterative Statements, Nested Loops, Break and Continue Statement – Goto Statement.**Functions**: Introduction, Using functions – Function declaration/ prototype – Function definition, Function call – Return statement – Passing parameters, Scope of variables, Storage Classes, Recursive functions.

UNIT - III:

Arrays and Strings: ***Arrays*****:** Introduction, Declaration of Arrays, Accessing elements of the Array – Storing Values in Array, Calculating the length of the Array, Operations that can be performed on Array, One dimensional array, Accessing one dimensional array, Passing one dimensional array to function, Two dimensional Arrays, Accessing two dimensional arrays, Passing two dimensional arrays to functions. ***Strings:*** Introduction, String Operations using String functions.

UNIT - IV:

Pointers, Structures and Unions: ***Pointers:*** Understanding Computer Memory – Introduction to Pointers, Declaring Pointer Variable, Pointer Expressions and Pointer Arithmetic – Null Pointers, Passing Arguments to Functions using Pointer, Pointer and Arrays – Passing Array to Function, Memory Allocation in C Programs, Memory Usage – Dynamic Memory Allocation, Drawbacks of Pointers. ***Structures***: Introduction to structures, Nested Structures. ***Union, and Enumerated Data Types***:Introduction to Union – accessing union elements, Enumerated Data Types.

UNIT – V:

File Handling: ***Files*****:** Introduction to Files, Using Files in C, Reading Data from Files, Writing Data from Files, Detecting the End-of-file, Error Handling during File Operations.

PRESCRIBED TEXT BOOKS:

Computer Fundamentals and Programming in C by REEMA THAREJA from OXFORD UNIVERSITY PRESS

<u>REFERENCE BOOKS:</u>

1. E. Balagurusamy, COMPUTING FUNDAMENTALS & C P ROGRAMMING – Tata McGraw-Hill, Second Reprint 2008, ISBN 9 78-0-07-066909-3.
2. Ashok N Kamthane: Programming with ANSI and Turbo C, Pearson E dition Publ, 2002.
3. Henry Mullish&HuubertL.Cooper: The Sprit of C, Jaico Pub, House,1996.
4. Teach your C Skills-Kanithker