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Computer Institute

Back End Developer:- C, C++

C	
C INTRODUCTION	**'C' TOKENS**
● Types of Languages ● Evolution of 'C' Language ● Structure of a 'C' Program ● 'C' Program development life cycle ● Executing and Debugging a 'C' Program	● Keywords and Identifiers ● Operators ● Constants ● Variables ● Data Types ● Precedence of Operators ● Scope and Lifetime of Variables
CONTROL STATEMENT AND EXPRESSIONS	**LOOPING**
● Decision Making using if statement ● Types of if …else block ● Switch case Block ● Arithmetic Expressions ● Evaluation of Expressions ● GOTO statement	● Concept of Loop ● For loop ● While loop ● Do while loop ● Jumping in Loop ● break and continue statement
ARRAYS AND STRING	**FUNCTIONS**
● Introduction of Array ● One - D Array ● Two - D Array ● Multidimensional Array ● Dynamic Arrays ● Implementing String Variables ● String handling Functions	● Concept of Function ● User-defined Function ● System Defined Function ● Types of parameter passing in a function
POINTERS	**STRUCTURE AND UNIONS**
● Need of Pointers ● Types of Pointers ● Pointer Expression ● Arrays of Pointers ● Pointers and Functions	● Need of Structure ● Implementing Structure Variable ● Arrays of Structure ● Structure within Structure ● Introduction of Unions ● Difference between Structure and Unions

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FILE HANDLING USING 'C'	DYNAMIC MEMORY ALLOCATION
● Opening and Closing File ● Input / Output operations on File ● Random Access to Files ● Command Line Arguments	● Concept of Dynamic Allocation ● Implementing Malloc and Calloc Functions ● Releasing the free space
STORAGE CLASSES AND PRE-PROCESSOR	
● Introduction of Storage Class ● Types of Storage Classes ● Introduction of Pre-processor ● Macro Substitution ● File Inclusion	

C++

C++ INTRODUCTION	INTRODUCTION TO OBJECT-ORIENTED PROGRAMMING
● What is C++? ● Why Use C++ ● Difference between C and C++ ● C++ Syntax	● Concept of OOP ● Features of OOP ● Structure of 'C++' program ● Executing and Debugging a 'C++' Program
'C++' TOKENS AND TYPE CASTING	**CLASSES & OBJECTS**
● Keywords and Identifiers ● Operators ● Constants ● Variables ● Data Types ● Precedence of Operators ● Scope and Lifetime of Variables	● Classes & Object Specifier ● Defining data members and member functions ● Array of objects ● Managing console I/O ● 'C++' stream classes ● Formatted and unformatted console I/O ● Usage of manipulators
FUNCTION IN 'C++'	**CONSTRUCTORS AND DESTRUCTOR**
● Call by reference, Return by reference ● Function overloading and	● Concept of Constructor ● Types of Constructors ● Memory allocation (new and delete)

default arguments ● Inline function ● Static class members ● Friend functions ● Virtual Functions	● Usage of destructor
OPERATOR OVERLOADING	**INHERITANCE**
● Overloading Unary and Binary operators ● Overloading using the friend function	● Types of inheritance ● Virtual base classes and abstract base classes ● Constructor and destructor in derived class
WORKING WITH FILES	**EXCEPTION HANDLING**
● File operations ● File pointer and their manipulation ● File updation with random access	● Various Exception Handling classes ● Implementing try and catch block ● Use of throw keyword