



MAHARISHI VIDYA MANDIR PUBLIC SCHOOL



SITAPUR ROAD LUCKNOW

Class – XII

Subject – COMPUTER SCIENCE (CODE 083)

(Session: 2018-2019)

Month	Topic/Content
APRIL -18	<p>PROGRAMMING IN C++: REVIEW: C++ covered In Class -XI, Defining a symbol name using typedef keyword and defining a macro using #define directive;</p> <p>ARRAYS AND FUNCTIONS Need for User defined data type; Structures: Defining a Structure, Declaring structure variables, Accessing structure elements, Passing structure to Functions as value and reference argument/parameter, Function returning structure, Array of structures, passing an array of structure as an argument/ a parameter to a function;</p> <p>PRACTICAL PROGRAMMING IN C++</p>
MAY-19	<p>Object Oriented Programming: Concept of Object Oriented Programming – Data hiding, Data encapsulation, Class and Object, Abstract class and Concrete class, Polymorphism (Implementation of polymorphism using Function overloading as an example in C++); Implementation of Object Oriented Programming concepts in C++:</p> <p>Definition of a class, Members of a class - Data Members and Member Functions Member function definition: inside class definition and outside class definition using scope resolution operator (::); Declaration of objects as instances of a class; accessing members from object(s)</p> <p>PRACTICAL:PROGRAMS FOR PROJECT FILE BASED ON OOP'S</p>
JULY-18	<p>Constructor and Destructor: Constructor: Special Characteristics, Declaration and Definition of a constructor, Default Constructor, Overloaded Constructors, Copy Constructor, Constructor with default arguments; Destructor: Special Characteristics, Declaration and definition of destructor;</p> <p>Inheritance: Using Private and Public visibility modes, default visibility mode (private); Inheritance (Extending Classes): Concept of Inheritance, Base Class, Derived Class, Defining derived classes, protected visibility mode; Single level inheritance, Multilevel inheritance and Multiple inheritance, Privately derived, Publicly derived and Protected derived class, accessibility of members from objects and within derived class(es);</p>
	<p>DATABASES AND SQL Database Concepts:</p>



MAHARISHI VIDYA MANDIR PUBLIC SCHOOL



SITAPUR ROAD LUCKNOW

Class – XII

Subject – COMPUTER SCIENCE (CODE 083)

(Session: 2018-2019)

AUG-18

Relational data model: Concept of domain, tuple, relation, key, primary key, alternate key, candidate key; Relational algebra: Selection, Projection, Union and Cartesian product; Structured Query Language: General Concepts: Advantages of using SQL, Data Definition Language and Data Manipulation Language;

Data types: NUMBER, CHARACTER, DATE; SQL commands: CREATE TABLE, DROP TABLE, ALTER TABLE, UPDATE...SET..., INSERT, DELETE; SELECT, DISTINCT, FROM, WHERE, IN, BETWEEN, GROUP BY, HAVING, ORDER BY; SQL functions: SUM, AVG, COUNT, MAX and MIN;

Note: Implementation of the above mentioned commands could be done on any SQL supported software.

COMMUNICATION AND NETWORK CONCEPTS

Evolution of Networking: ARPANET, Internet, Interspace;

Data Communication terminologies

Network devices

Different Topologies

WebPages

PRACTICAL: PROJECT FILE CREATION WITH SQL COMMANDS

SEP-18

HALF YEARLY REVISION

OCT-18

Data File Handling:

Need for a data file, Types of data files – Text file and Binary file;

Basic file operations on text file: Creating/Writing text into file, Reading and Manipulation of text from an already existing text File (accessing sequentially);

Binary File: Creation of file, Writing data into file, Searching for required data from file, Appending data to a file, Insertion of data in sorted file, Deletion of data from file, Modification of data in a file;

Implementation of above mentioned data file handling in C++; Header file: fstream.h; ifstream, ofstream, fstream classes; Opening a text file in in, out, and app modes; Using cascading operators for writing text to the file and reading text from the file; open(), get(), put(), getline() and close() functions; Detecting end-of-file (with or without using eof() function); Opening a binary file using in, out, and app modes;

open(), read(), write() and close() functions; Detecting end-of-file (with or without using eof() function); tellg(), tellp(), seekg(), seekp() functions

PRACTICAL: PROJECT FILE CREATION



MAHARISHI VIDYA MANDIR PUBLIC SCHOOL



SITAPUR ROAD LUCKNOW

Class – XII

Subject – COMPUTER SCIENCE (CODE 083)

(Session: 2018-2019)

NOV-18	<p>Pointers: Declaration and Initialization of Pointers; Dynamic memory allocation/deallocation operators: new, delete; Pointers and Arrays: Array of Pointers</p> <p>DATA STRUCTURES: Stack (Array and Linked implementation of Stack): Operations on Stack (PUSH and POP) and its Implementation in C++, Converting expressions from INFIX to POSTFIX notation and evaluation of Postfix expression; Queue: (Circular Array and Linked Implementation): Operations on Queue (Insert and Delete) and its Implementation in C++.</p>
DEC-JAN 19	<p>BOOLEAN ALGEBRA: Evolution of Boolean algebra, Binary-valued Quantities, Boolean Variable, Boolean Constant and Boolean Operators: AND, OR, NOT; Truth Tables; Closure Property, Commutative Law, Associative Law, Identity law, Inverse law, Principle of Duality, Idempotent Law, Distributive Law, Absorption Law, Involution law, DeMorgan's Law and their applications; Obtaining Sum of Product (SOP) and Product of Sum (POS) form from the Truth Table, Reducing Boolean Expression (SOP and POS) to its minimal form, Use of Karnaugh Map for minimisation of Boolean expressions (up to 4 variables); Basic Logic Gates (NOT, AND, OR, NAND, NOR) and their use in circuits.</p> <p>REVISION FOR BOARD EXAMINATION AND DOUBT CLEARANCE SESSIONS</p>