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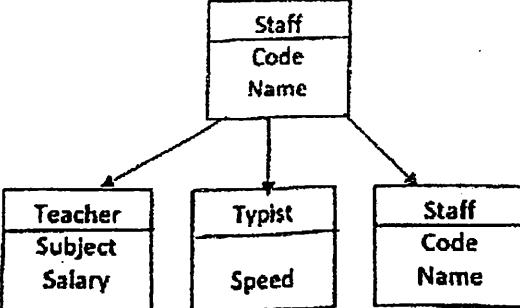
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Examination: ODD SEMESTER-2024
MCA (1st Semester)

Paper Name : Object Oriented Programming**Paper Code:**MCA 101**Time:** 2.5 hours**Maximum marks:**60**Note:** *This question paper contains two sections Section A and B.**Follow proper numbering for answering the questions.***Section-A****All questions are compulsory in this section.****Marking Scheme :4 X 5 =20.**

Q.N.	Questions	Mark	CO	BL
Q1	What is Object Oriented Programming? What are the principles of Object-Oriented Programming?	5	CO1	BL2
Q2	What is the output of the following code? <pre>#include<iostream.h> class Base { public: int a; protected: int b; private: int c;}; }; class Derived: Base {int d; friend Friend;}; class Friend { Derived derid; };</pre> In the above code, which of the following variables can be accessed in "Friend"? What is the significance of using access specifiers?	5	CO2	BL3
Q3	Write a C++ program to display names, rollnos and grades of 3 students who have appeared in the examination. Declare the class of name, rollnos and grade. Create an array of class objects. Read and display the contents of the array.	5	CO2	BL3
Q4	What is a friend function? What are the characteristics of using friend function?	5	CO3	BL2

Section-B**Attempt any FOUR questions in this section.****Marking Scheme :4X 10 =40.**

Q.N.	Questions	Mark	CO	BL
Q1	Write a C++ program to create a text file, check file created or not, if created it will write some text into the file and then read the text from the file?	10	CO5	BL4

Q2	“An overloaded function appears to perform different activities depending the kind of data send to it” Justify the statement with appropriate example. Which operators cannot be overloaded? Write a function to overload + operator so that it can add two complex numbers?	10	CO4	BL4
Q3	How a class accomplishes data abstraction? Explain using an example?	10	CO1	BL2
Q4	An Educational Institute wishes to maintain a data of its employee. The hierarchical relationships of related classes are as follows.  <pre> classDiagram class Staff { Code Name } class Teacher { Subject Salary } class Typist { Speed } class Staff2 { Code Name } Staff < -- Teacher Staff < -- Typist Staff < -- Staff2 </pre> Define all the classes to represent above hierarchy and define functions to retrieve individual information as and when required. Explain which type of inheritance is used .	10	CO3	BL2
Q5	What is the use of constructor and destructor? Write a program for illustrating default constructor, parameterized constructor and copy constructor.	10	CO2	BL3
Q6	What do you mean by exception handling? How exceptions are handled in C++. <pre> #include <iostream> using namespace std; double division (int a, int b) { if (b == 0) {throw "Division by zero condition!";} return (a / b); } int main () { int x = 50; int y = 2; double z = 0; try {z = division (x, y); cout << z;} catch (const char *msg) {cerr << msg;} return 0;} </pre>	10	CO5	BL4

BL - Bloom's Taxonomy Levels (1: Remembering, 2: Understanding, 3: Applying, 4: Analysing, 5: Evaluating, 6: Creating) CO - Course Outcomes.