



SCHOOL OF COMPUTER SCIENCE AND ENGINEERING
Continuous Assessment Test - II, Winter Semester 2021-22

Course Code : BCSE102L **Duration** : 90 Minutes.
Course Name : Structured and Object Oriented Programming **Max. Marks:** 50
Slot : B1

Answer all the Questions

5X10 = 50 Marks

1. Write a c program which stores in an array the details about a person's bank accounts. Each bank account should be a structure, consisting of i) a string which stores the bank name, ii) the amount (float) that the person has in that account. Your program should allow the user (by a choice variable) to deposit, withdraw or transfer certain sum of money from one account to another. Checks should be made such that an amount more than the available amount cannot be withdrawn / transferred, also if the amount to be deleted / transferred from equals the available amount in that account then that account structure is deleted from the array.

CO2, L2 Marks -10

2. Tabulate the differences, between the following, with suitable examples.

- i) A structure variable AND an object with private components
- ii) A member function of an object AND a friend function.

CO3, L2 Marks -10

3. Write a C++ program using classes and objects, which can find out the overall average of the entire group (say n) of patients. A single object with default constructor adds 10 patients with 60 kg average weight, while another object of the same class with parameterized constructor adds ni patients with wi kg overweight or underweight (for eg., ni=5, and wi=10 means 5 patients are added where their average weight is 10 kg above the average weight of 60 kg). ALL objects of this patient class (and ONLY objects of this patient class) update the total weight and the total number (n) of patients and can display the overall average. Your C++ program should provide all these facilities

CO3, L3 Marks -10

4. Distinguish, in terms of functionality and accessibility, between Single, Multilevel, Multiple and Hierarchical Inheritance with corresponding code fragments.

CO3, L2 Marks -10

5. The class employee has the following details: company name (char array), employee id (integer), PAN (char array) and monthly salary (float). The class student has the following details: student id (integer), number (integer) of registered credits (for the entire academic year), cost of a credit (float). The class tenant derives from both employee and student and has the following details: name (char array), PAN (char array) and monthly rent (float). All the classes, employee, student and tenant have their own set of member functions to accept the data through corresponding objects. Write a C++ program which incorporates this relationship. An object of the class tenant should also have two member functions, one to verify that the tenant is a valid employee, and the other to calculate whether the person has enough money to pay the monthly rent, by looking at the salary from the employer as well as the course enrollment costs as a student.

CO3, L4 Marks -10

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