

REGENT UNIVERSITY
COLLEGE OF SCIENCE AND TECHNOLOGY



EXAMINATION PAPER

**END OF SEMESTER EXAMINATIONS,
LEVEL 200 NOVEMBER 2007**

**COURSE: SICS 152
OBJECT ORIENTED PROGRAMMING
USING C++**

TIME: TWO HOURS

LECTURER: KENNETH AZUMAH

Please Read ALL Instructions



Attempt all questions.

1. Implement the following class diagram using the C++ language. **[20 marks]**
 (Properly indent and adequately comment your code.
main function not required)

Employee	
-	firstname : string
-	lastname : string
-	age : int
-	EmpNo : string
+	Salary : double
+	Employee ()
+	setName (string fn, string ln) : void
+	getAge () : int
+	setAge (int a) : void
+	setEmpNo (string index) : void

2. Answer **True** or **False** for (a) to (j) **[10 marks]**
- A class constructor has the **int** return type by default
 - In a structure members are **public** by default
 - In a class members are **private** by default
 - `int boys[5]; int b = boys[5];` is valid code
 - A **do-loop** is executed at least once
 - Data members of a class must be declared **private**
 - `int hour; hour = "12";` generates a compiler error

- In using an object oriented language like C++ we can define our own data types.
- Members declared as **private** in a class are accessible to all the member functions of that class.
- The value of the expression `13%4` is 3

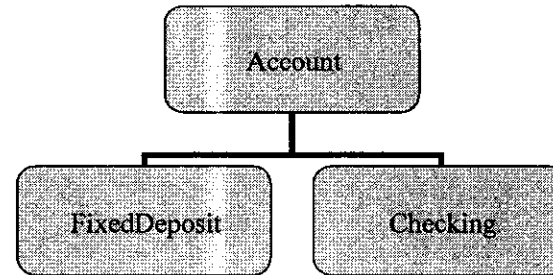
3. Fill in the blanks (write answer in your answering booklet) **[10 marks]**
- A function that has return type does not return anything
 - The process by which objects of one class acquire the attributes of objects of another class is known as
 - Every C++ statement ends with a
 - Every C++ program begins execution at the function
 - Member functions of a class are normally declared as
 - A constructor's name is the same as
 - The wrapping up of data and functions into a single unit is called
 - A function prototype tells the compiler the return type, name and
 - In designing with inheritance, attributes common to classes are normally moved higher up the
 - The elements of an array of size 10 are numbered from
to

4. Below are two classes with common attributes. **[30 marks]**

Using the diagram below modify the classes taking following into consideration.

- a. Fully implement a base class Account
- b. Fully re-implement the Savings and FixedDeposit class.

Fully implement all the member functions. (Fill in with the appropriate code to offer functionality as name implies)



```
class FixedDeposit{
private:
    int accNo;
    double accBalance;
    double interestRate;
public:
    Savings();
    void MakeDeposit(double deposit);
    void CloseAccount();
    double getBalance();
};
```

```
class Savings{
private:
    int accNo;
    double accBalance;
public:
    Checking();
    void MakeDeposit(double deposit)
    void CashCheque(double amt);
    double getBalance();
};
```