

REGENT UNIVERSITY

COLLEGE OF SCIENCE AND TECHNOLOGY



SCHOOL OF INFORMATICS AND
ENGINEERING

END OF SEMESTER EXAMINATION

EXAMINATION PAPER

SICS 152: OBJECT ORIENTED
PROGRAMMING USING C++

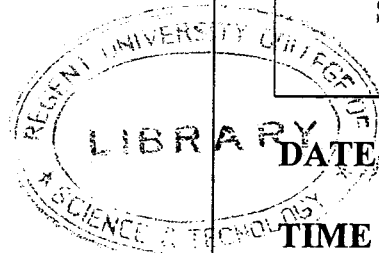
DATE: 16TH NOVEMBER 2007

TIME ALLOWED: 2 HOURS

EXAM MATERIAL PROVIDED: NONE

INSTRUCTIONS: *ATTEMPT ALL QUESTIONS*

LECTURER: MR KENNETH AZUMAH



Attempt all questions.

1. Answer **True** or **False** for (a) to (j) [10 marks]
- The value of the expression `13%4` is 3
 - A `do`-loop is executed at least once
 - `int hour; hour = "12";` generates a compiler error
 - `int boys[5]; int b = boys[5];` is valid code
 - In using an object oriented language like C++ we can define our own data types.
 - In a structure members are **public** by default
 - Data members of a class must be declared **private**
 - In a class members are **private** by default
 - Members declared as **private** in a class are accessible to all the member functions of that class.
 - A class constructor has the **int** return type by default

2. Fill in the blanks (write answer in your answering booklet) [10 marks]
- The wrapping up of data and functions into a single unit is called
 - 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
 - A function that has return type
 - Member functions of a class are normally declared as
 - A constructor's name is the same as

- 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
 - A function prototype tells the compiler the return type, name and
3. Implement the following class diagram using the C++ language. [20 marks]
(Properly indent and adequately comment your code. **main** function not required)

Student	
-	firstname : string
-	lastname : string
-	age : int
-	indexNo : string
+	fees : double
+	Student ()
+	setName (string fn, string ln) : void
+	getAge () : int
+	setAge (int a) : void
+	setIndexNo (string index) : void

4. Below are two classes with common attributes. [30 marks]
- Using the diagram below modify the classes taking following into consideration.
- Fully implement a base class Account
 - Fully re-implement the Savings and Checking class.

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

```
class Savings{
private:
    int accNo;
    double accBalance;
    double interestRate;
public:
    Savings();
    void Deposit(double deposit);
    void Withdraw(double amt);
    double getBalance();
};
```

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

